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Enterprise Construction Management Services



**Supplemental Environmental Project:
Independent External Triennial Review**

Los Alamos, New Mexico

Final Review Report

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Acronyms

ADEM	Associate Directorate for Environmental Management
BTF	Beryllium Technology Facility
CAA	Central Accumulation Area
CFR	Code of Federal Regulations
DEP	deployed environmental professional
DOE	U.S. Department of Energy
DP	discharge permit
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
EPC	Environmental Protection and Compliance Division
EPRR	Electronic Public Reading Room
FY	fiscal year
GEL	GEL Laboratories
GHG	greenhouse gas
HEPA	high-efficiency particulate air
HWA	Hazardous Waste Act
HWB	Hazardous Waste Bureau
HWFP	Hazardous Waste Facility Permit
IFGM	interim facility-wide ground water monitoring
IFGMP	Interim Facility-Wide Ground Water Monitoring Plan
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
MCL	maximum contaminant level
MDA	material disposal area
mg/L	milligrams per liter
NA	not applicable
N3B	Newport News Nuclear BWXT-Los Alamos, LLC
NELAP	National Environmental Laboratory Accreditation Program
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMED DOE OB	New Mexico Environment Department DOE Oversight Bureau
NMSA	New Mexico Statutes Annotated
NOx	nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NSR	New Source Review
ODS	ozone-depleting substance
OMB	Office of Management and Budget
PF-4	Plutonium Facility, Building 4
PRID	Permits and Requirements Identification (system)

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QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RLUOB	Radiological Laboratory/Utility/Office Building
RMP	risk management plan
SAA	Satellite Accumulation Area
SEP	supplemental environmental project
SERF	Sanitary Effluent Reclamation Facility
SMEB	Sigma Mesa Evaporation Basin
SOP	standard operating procedure
SWWS	sanitary wastewater system
TA	Technical Area
TEAM	Environmental Assessment and Management (Guide)
TFF	Target Fabrication Facility
TSDF	Treatment, Storage, and Disposal Facility
UIC	Underground Injection Control
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound
WCATS	Waste Compliance and Tracking System
WMC	Waste Management Coordinator
WQA	Water Quality Act

Executive Summary

An independent, external environmental team prepared this Triennial Review Report to assess and summarize the Los Alamos National Laboratory's (LANL) compliance with permits and related regulatory requirements within three functional areas: air, ground water, and hazardous waste.

In 2014, an improperly packaged drum of transuranic waste originating at LANL built up pressure and released radiation into the environment at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. The Waste Isolation Pilot Plant closed, and the New Mexico Environment Department (NMED) opened an investigation. Based on the investigation results, NMED issued an order to LANL (NMED 2014) for alleged hazardous waste and regulatory violations of the LANL Hazardous Waste Facility Permit (hereafter referred to as the HWFP). The co-permittees (U.S. Department of Energy [DOE] and the management and operations contractor for the laboratory, Los Alamos National Security, LLC [LANS])¹ each requested a hearing. They collectively entered into a Settlement Agreement (NMED 2016a) to resolve the alleged violations. As part of the settlement, the respondents agreed to implement five Supplemental Environmental Projects (SEPs) along with Corrective Actions and Other Commitments of the Settlement Agreement (NMED 2016a).

This Triennial Review is one of the SEPs and follows the scope of work and guidelines agreed to by DOE and NMED (NMED 2017b). It is the initial Triennial Review funded by the DOE per the Settlement Agreement.

The Review Team used standard audit practices that it had used in other environmental surveys and dovetailed a checklist tool for the application of the New Mexico regulations, including only areas for which NMED has regulatory responsibility. These checklists enabled the Team to follow a systematic approach to review permit conditions and capture the basis of compliance for the following permits and their associated regulations:

- ◆ Title V Operating Permit P100-R2M1 issued to LANS as the sole permittee
- ◆ Ground Water Discharge Permits (DPs) issued to DOE and LANS as co-permittees:
 - DP-857
 - DP-1589
 - DP-1793
 - DP-1835
- ◆ HWFP, EPA ID NM0890010515, issued to DOE and LANS as co-permittees

The Review Team reviewed these permits and associated regulations along with supporting documentation including plans, procedures, monitoring reports and logs, inventories, and associated

¹ The co-permittees were DOE and LANS during this Review. Prior to completion of this Report, the co-permittees changed to DOE, LANS, and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) (NMED 2018). N3B is the new Environmental Management contractor at LANL.

records. Team members conducted interviews with key personnel at LANL and conducted site visits to observe practices first hand. They maintained site visit logs and captured notes specific to the permit conditions within the functional area checklists to assess and identify any regulatory deficiencies. When a potential deficiency was identified, a pre-decisional observation was documented and sent to key LANL personnel. When possible, additional information was shared to clarify the pre-decisional observation, provide additional information to address the observations, and sometimes effectively resolve and thereby close the observation. The Review Team identified 22 observations: 20 potential deficiencies and 2 positive practices. Table ES-1 summarizes the observations and their status.

Table ES-1: Pre-decisional Observations

No.	Reference	Observation Type	Short Description	Status
Air				
No observations.				
Ground Water				
1	DP-857, Item 8	II – Potential Environmental Regulatory Violation	Signs indicating that wastewater is not potable at Outfall 13S were not posted. After the site visit, signs were installed.	Closed
4	DP-857, Item 8	II – Potential Environmental Regulatory Violation	Signs indicating wastewater is not potable at the SMEB are not posted. After the site visit, signs were installed.	Closed
14	DP-857, Condition 31	II – Potential Environmental Regulatory Violation	pH was not reported to NMED in 2017 for the SWWS or Outfall 001.	Closed
15	DP-857, Conditions 17, 31, 32, 33, 34, 35, and 36 TA	II – Potential Environmental Regulatory Violation	The GEL SC laboratory reports NELAP accreditation through its Utah laboratory. Documentation was not evident that this is acceptable to NMED and subsequent documentation was provided documenting its accreditation.	Closed
16	HWFP Section 11.10.2.7.i: Ground Water Levels	I Operational Deficiency (not following LANL procedure).	The permit requires that all water levels be collected when monitoring activities begin. However, the 2018 IFGMP, Section 1.8, indicates that ground water levels will be measured within a 21-day sampling event rather than the 14-day timeframe specified in the HWFP.	Open
17	HWFP Sections 11.10.2.8.ii and 11.10.2.13	I –Operational Deficiency	On-site interviews and a review of waste management SOPs in the IFGMP indicate that purged ground water is not transferred to temporary satellite accumulation areas, transfer stations, or 90-day storage areas.	Open

No.	Reference	Observation Type	Short Description	Status
18	HWFP Section 11.10.2.8.iv: Ground Water and Surface Water Sample Types	II – Potential Environmental Regulatory Violation	Permit requirement specifies that field blanks will be obtained at a frequency of no less than one per day per site or unit. The 2018 IFGMP, Appendix D, indicates that field blanks are collected at a minimum frequency of 10% of all samples collected in a sampling campaign. Neither the HWFP nor the IFGMP stipulations were met.	Open
19	HWFP Section 11.12.4.12 (3): Periodic Monitoring Report Figures	II – Potential Environmental Regulatory Violation	None of the IFGM reports reviewed include a report figure that denotes ground water flow direction related to a specific monitoring group, or facility-wide.	Open
20	HWFP Section 11.12.4.12 (4): Periodic Monitoring Report Figures	II - Potential Environmental Regulatory Violation	The 2016 and 2017 Annual Periodic Monitoring Reports for the General Surveillance Monitoring Group showed ground water and surface water analytical results exceeding applicable screen values that are not represented on maps.	Open
21	HWFP Section 11.12.4.13.i: Field Methods and Section 11.12.4.13.ii: Analytical Program	I –Operational Deficiency (not following LANL procedure)	Periodic monitoring reports did not include a field methods appendix for the field measurement and sampling procedures. Periodic monitoring report appendices did not have specific narratives for the analytical program, analytical methods, DQOs, or data quality review procedures.	Open
22	Permit DP-1835, Condition 15	II – Potential Environmental Regulatory Violation	Flow arrows were missing from all quarterly potentiometric surface maps reviewed.	Closed
Hazardous Waste				
2	Procedural	I – Operational Deficiency (not following LANL procedure)	A container in a satellite accumulation area had inaccurate content labels.	Closed
3	Procedural	I – Operational Deficiency (not following LANL procedure)	A container in a satellite accumulation area had multiple, conflicting content labels.	Closed
5	Hazardous Waste Permit Condition 3.6(1)	II – Potential Environmental Regulatory Violation	A container in a permitted storage area of TA-54 had multiple, conflicting labels.	Closed
6	Hazardous Waste Permit Condition 3.6(1)	II – Potential Environmental Regulatory Violation	Containers LA0000067634 and LA0000066425 in a permitted storage area of TA-54-G were labeled as hazardous waste and non-RCRA waste.	Closed
7	Hazardous Waste Permit Condition 3.6(2) Waste Container Labeling	II – Potential Environmental Regulatory Violation	Seven containers in permitted storage area TA-54 were missing a “free liquids” label: W842005, W842409, W841816, W841013, W841815, W841998, and W841530.	Closed

No.	Reference	Observation Type	Short Description	Status
8	40 CFR 265.171 Condition of containers (July 2008)	II – Potential Environmental Regulatory Violation	A plastic container of waste mineral oil (cutting fluid), labeled as hazardous waste, in a satellite accumulation area was cracked and leaking its contents into secondary containment.	Closed
9	40 CFR 265.173(a) Management of Containers (July 2008)	II – Potential Environmental Regulatory Violation	A container holding high-explosive hazardous waste was overflowing and not properly closed. Two open bags of lab trash, including gloves and a trace amount of powder, were stored on the top of the open container.	Closed
10	Hazardous Waste Permit Condition 2.4.7 Waste Characterization Review (4)	II – Potential Environmental Regulatory Violation	Permitted disposal facility receiving waste from TA-54 Area L provided two waste discrepancies in FY 2017 and one waste discrepancy in FY 2018 for which LANL did not notify NMED within 3 days.	Closed
11	Hazardous Waste Permit Condition 3.8 Inspection Schedules and Procedures (2)	II – Potential Environmental Regulatory Violation	A container in a permitted storage area of TA-55 was stored so the container label was not visible from the aisle.	Closed
12	In Compliance	Positive Practice	A positive culture of communication exists among the Environmental Protection and Compliance Division, waste management coordinators, and LANL's waste generators or storage area managers.	N/A
13	In Compliance	Positive Practice	The Environmental Compliance and Protection Division has conducted annual avian monitoring at the three Interim Status Units and several LANL control sites since 2013.	N/A
CFR = Code of Federal Regulations		NELAP = National Environmental Laboratory Accreditation Program		
DP = discharge permit		NMED = New Mexico Environment Department		
DQO = data quality objective		RCRA = Resource Conservation and Recovery Act		
FY = fiscal year		SC = South Carolina		
GEL = GEL Laboratories		SMEB = Sigma Mesa Evaporation Basin		
HWFP = Hazardous Waste Facility Permit		SOP = standard operating procedure		
IFGM = interim facility-wide ground water monitoring		SWWS = sanitary wastewater system		
IFGMP = Interim Facility-Wide Ground Water Monitoring Plan		TA = Technical Area		
LANL = Los Alamos National Laboratory				

Overall, the management of air quality, ground water, and hazardous waste at LANL is effective and the LANL personnel consistently work to improve their procedures and management techniques. LANL's staff, procedures, training programs, and lines of communications were effective. The generators, process engineers, operators, waste management coordinators (WMCs), deployed environmental professionals (DEPs), and LANL representatives were candid in discussing the unique issues experienced by the facility, showing processes, and providing information during this Review.

The Team made the following suggestions to enhance future compliance:

- ◆ **Air Quality and Ground Water Programs.** Several conditions of the Title V Permit and ground water permits appear to be in error, contain unnecessary conditions, conflict with the Consent Order, are not congruent with plans and processes, or have unclear requirements. The Review Team suggests that LANL review these permit conditions with NMED to ensure a mutual understanding of the requirements, clarify the permit language during permit renewal or sooner, and document agreed-upon language or interpretation. Agreements, clarifications, or changes to permit conditions should be coordinated with NMED and recorded or documented to ensure that each permit is congruent with mutually agreed-upon practices and procedures.
- ◆ **Ground Water Best Practice.** The Review Team suggests installing a clamp on the pipe into the purge water holding tank to provide an air gap between the pipe and purge water. This installation would avoid unintentional siphoning back into the well from the holding tank. If this suggestion is implemented, the use of the clamp should be identified in the ground water well sampling procedures.
- ◆ **Ground Water Well Management.** The Review Team suggests incorporating visual inspections of the concrete pad during sampling events or routine monitoring to advance maintenance of the concrete pads and prevent surface water infiltration into a well boring.
- ◆ **Septic Tank Management.** The Team recognizes that NMED establishes the permit conditions under DP-1589. LANL operations staff continually evaluate the option of modifying septic tanks to holding tanks as appropriate which would reduce regulatory workloads and streamline management of septic tank systems at LANL. The Review Team suggests that the operations staff continue its efforts to coordinate with NMED to consider changes to DP-1589.
- ◆ **Hazardous Waste.** In addition to physical procedural suggestions made during site visits, the Review Team identified two hazardous waste generator requirements that would benefit from clarification.

The first concern addresses the direct shipment from satellite accumulation areas (SAAs). Some WMCs have been directed not to pack for shipment directly from SAAs. The Review Team suggests that LANL continue to work both internally with its WMCs as well as with the NMED Hazardous Waste Bureau (HWB) to provide documented guidance related to direct shipment from SAAs.

The second concern addresses the significant increases in the number of SAAs because of the rigid interpretation of “at or near the point of generation.” A meeting with the NMED HWB is suggested to discuss the EPA guidance and relay the benefits of having centralized SAAs in the laboratories. The Environmental Protection and Compliance Division (EPC) and the NMED HWB have maintained an open dialogue on this issue, and the Review Team suggests that effective guidance will rely on continuing this communication. Due to the unique generating activities at the Technical Area 35 (TA-35) laboratory, as well as throughout LANL, effective management of hazardous waste will rely on this communication.

Final

The Review Team completed the Independent Triennial Review and identified the compliance deficiencies noted in the observations. The coordination and closure of these identified observations and implementation of the suggestions will enhance regulatory compliance at LANL.

1 Overview

1.1 Background

In 2014, an improperly packaged drum of transuranic waste originating at Los Alamos National Laboratory (LANL) built up pressure and released radiation into the environment at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. The Waste Isolation Pilot Plant closed, and the New Mexico Environment Department (NMED) opened an investigation. Based on the investigation results, NMED issued an order to LANL (NMED 2014) for alleged hazardous waste and regulatory violations of the LANL Hazardous Waste Permit (HWFP). The co-permittees (U.S. Department of Energy [DOE] and the management and operations contractor for the laboratory, Los Alamos National Security, LLC [LANS])¹ each requested a hearing. They collectively entered into a Settlement Agreement (NMED 2016a) to resolve the alleged violations. As part of the settlement, the respondents agreed to implement five Supplemental Environmental Projects (SEPs) along with Corrective Actions and Other Commitments of the Settlement Agreement. Each of the following SEPs must be completed to meet the terms of the Agreement: improvement to DOE-owned transportation routes at LANL; watershed enhancements in and around LANL; surface water sampling in and around LANL; potable water line replacement and meter installation within LANL; and conducting triennial reviews of environmental regulatory compliance.

Per the Settlement Agreement, a LANL Triennial Review scope of work (DOE, 2017) was developed for an independent and external party to conduct an environmental review and complete the initial Triennial Review to fulfill one of the SEPs. It was funded by DOE per the Settlement Agreement.

An independent, external environmental team prepared this Triennial Review Report to assess and summarize LANL's compliance with permits and related regulatory requirements within three functional areas: air, ground water, and hazardous waste.

1.2 Scope

The purpose of the Review is to ensure that any regulatory deficiencies are identified with respect to compliance with the functional area permit conditions and associated regulatory requirements. In accordance with the agreed-upon *SEP – Triennial Review Scope of Work and Guidelines* (DOE 2017; NMED 2017b), only the portions for which NMED has regulatory responsibility are included in the following three functional areas:

¹ The co-permittees were DOE and LANS during this Review. Prior to completion of this Report, the co-permittees changed to DOE, LANS, and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) (NMED 2018). N3B is the new Environmental Management contractor at LANL.

◆ **Air – Title V Operations**

- Title V Operating Permit P100-R2M1 (NMED 2017a), issued February 3, 2017, to LANS as the sole permittee
- New Mexico Title V Air Quality Permitting Program (New Mexico Administrative Code [NMAC] 20.2.70)

◆ **Ground Water**

- Ground Water Discharge Permits (DP)
 - DP-857 (NMED 2016f),
 - DP-1589 (NMED 2016c, NMED 2016e, NMED 2017d, NMED 2017f),
 - DP-1793 (NMED 2015), and
 - DP-1835 (NMED 2016d, NMED 2017e), issued to DOE and LANS as co-permittees
- Water Quality Control Commission regulations pertaining to ground water protection (NMAC 20.6.2)
- Ground water monitoring program of the HWFP (NMED 2017g; sometimes referred to as the Resource Conservation and Recovery Act [RCRA] Permit)

◆ **Hazardous Waste**

- HWFP, EPA ID NM0890010515 (NMED 2017g), issued to DOE and LANS as co-permittees
- New Mexico Hazardous Waste Act (HWA), New Mexico Statutes Annotated (NMSA) 1978, Sections 74-4-1 to -14
- New Mexico Hazardous Waste Management Regulations (NMAC 20.4.1)

This report summarizes the results of the initial triennial review for LANL and was completed and made available to the public by posting a copy on the Electronic Public Reading Room (EPRR) (<http://epr.lanl.gov>; LANL 2018g). Stipulated by the agreed-upon Statement of Work and Guidelines (NMED, 2017b) for Post Triennial Review Activities, The NMED, DOE, and LANS (or its management and operations successor) “will meet to discuss the review findings/issues, identify lessons learned, and opportunities for future reviews. A specific discussion topic should include the need for future reviews under this format and approach. It is anticipated that a minimum of two separate triennial reviews will be performed before enough data will have been generated to support a discussion on the need for additional reviews.” This Report documents the results of the first triennial review.

The Settlement Agreement (NMED 2016a), Section 11.B.38 (in part), states:

The Respondents, their constituent agencies, contractors, and affiliates agree to address any potential regulatory violations identified in the triennial reviews. NMED agrees to refrain from taking any enforcement action against the Respondents, their constituent agencies, contractors and affiliates for any potential regulatory violations, or operational deficiencies, that could lead to potential environmental regulatory violations identified in the triennial reviews so long as the Respondents and their

facility operators correct any deficiencies identified in the course of such reviews within sixty (60) calendar days of the finalization of each triennial review report, or for good cause shown, within another period of time beyond sixty (60) calendar days, if approved by NMED.

1.3 Elements of Ground Water Monitoring Program Reviewed

For permitted treatment, storage, and disposal facilities (TSDF) such as LANL, a ground water monitoring program is required and consists of three phases: detection monitoring (40 Code of Federal Regulations [CFR] 264.98), compliance monitoring (40 CFR 264.99), and corrective action (40 CFR 264.100). The phases are sequential with a facility able to move back and forth between phases as criteria are met. The RCRA regulations establish performance standards that require each facility's ground water monitoring program to have a sufficient number of wells installed at appropriate locations. The regulations also require ground water monitoring wells to be located at depths that can yield representative samples of background conditions and water quality at the point of compliance (i.e., the wells downgradient of the waste management unit) in the uppermost aquifer (defined as the geological formation nearest the natural surface that can yield significant quantities of ground water to wells or springs). To meet these standards, each facility must design, install, and operate a ground water monitoring program based on the site's specific geology and hydrology. The program must also address the type of waste management unit and the characteristics of the waste being managed. The monitoring wells must be appropriately designed and installed, and consistent sampling and analytical procedures must be in place to ensure that accurate and representative samples are taken. The specific sampling requirements and procedures (including frequency of sampling) are specified in a facility's hazardous waste permit. Typically, these requirements are included in a sampling and analysis plan. All data collected as part of a facility's ground water monitoring program must be maintained in the facility's operating record.

The LANL ground water monitoring program was evaluated against portions of Section 11 of the HWFP pertaining to:

- ◆ drilling and monitoring well installation specifications (Section 11.11)
- ◆ ground water monitoring, sample collection (Sections of 11.10.2 and 11.10.3)
- ◆ periodic reporting requirements (Section 11.12.4).

Parts of Section 11 that were not included in the scope of this Review include actions related to assessments of releases (soil, rock, sediment, surface water), laboratory procedures and laboratory quality assurance/quality control (QA/QC), risk assessment, interim measures, remedy evaluations, and corrective actions.

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2 Triennial Review Methodology

2.1 General Approach

Through a combination of document reviews, interviews, and site visits, the Review Team evaluated compliance with the aforementioned permits and associated regulations. The Review Team divided into three functional area groups to conduct the Review for air, ground water, and hazardous waste per the *SEP – Triennial Review Scope of Work and Guidelines* (DOE, 2017). The Review Team prepared for the on-site Review effort by conducting research and evaluating permit conditions. Using standard audit practices, tools, and guidelines (e.g., the Environmental Assessment and Management Guide [USACE, 2018]) the team members had used in other environmental surveys, they created permit-specific and often site-specific checklists. The Team ensured that New Mexico regulations were incorporated and that areas for which NMED had regulatory responsibility were the Review focus. These checklists enabled the Team to follow a systematic approach to review the permit conditions and capture the basis of compliance.

Site visits were conducted from February 27 through March 15, 2018, with staggered finishes for the three functional areas. The Team reviewed current operational records predominantly from 2017 and through February 2018, unless otherwise noted. Historic records were also reviewed as appropriate. Checklists for each functional area were completed with the basis of compliance for each permit condition. The basis of compliance was attributed to document research, interviews, and on-site reviews conducted throughout the course of the Review. A representative sample of compliance elements associated with each functional area was reviewed in accordance with the methods outlined as provided in the following subsections. Checklists are provided in Appendices A.1, B.1, and C.1 for air, ground water, and hazardous waste, respectively. Pre-decisional observations of suspected deficiencies were identified during the Review, and appropriate parties were notified. Pre-decisional observations (potential deficiencies and positive practices) made during the site visit and subsequently during review of the information collected were shared with LANL key personnel upon discovery. The completed pre-decisional observation forms are shown in Appendices A.2, B.2, and C.2, as applicable. Members of the Review Team and their qualifications are summarized in Appendix D. The 3-week Triennial Review schedule followed during the on-site visit is included as Appendix E.

2.2 Preparatory Activities

Prior to the preliminary site visit held October 16–19, 2017, key documents were reviewed, including the permits, associated federal and state regulations, and LANL programmatic environmental documents and plans for air, ground water, and hazardous waste functional areas. The Review Team held regular meetings, typically weekly, with LANL key personnel to request information or documents, identify compliance practices, and address any questions related to Title V air

operations, ground water discharge practices, and hazardous waste management and associated permit conditions.

The purpose of the October 2017 preliminary site visit was for the Review Team to learn about the LANL environmental compliance program. The Review Team visited areas identified in the permits and met key personnel. The preliminary site visit also allowed:

- ◆ The LANL environmental compliance team to share the roles and challenges of their program
- ◆ The LANL subject matter experts an opportunity to discuss the permits and related compliance activities within each functional area
- ◆ The Review Team to refine the compliance checklists with site-specific conditions.

After the preliminary site visit and before the on-site Review, routine weekly meetings continued. The Review Team (with support from LANL) developed the on-site schedule, collected supporting records, and finalized the compliance checklists and the Review Plan.

2.3 On-Site Review Activities

The team conducted the Triennial Review through a series of document reviews, interviews, and site visits as detailed in the following subsections.

2.3.1 Document Review

The Team evaluated documents to support the Review. Documents evaluated included regulations, permits, programs, procedures, records, regulatory agency correspondence, facility layouts, flow diagrams, monitoring data, operation and maintenance manuals, plans, and training records primarily from 2016 and 2017. Historic records were reviewed in context of the permit requirements. The team reviewed documentation indicating that the procedures and records follow the regulations and permit requirements and that they are complete and current.

2.3.2 Site Visits and Interviews

The Review Team conducted site visits to make visual observations and gather evidence of permit compliance or noncompliance. During site visits, the Team interviewed key staff to better understand the nature of facility operations, practices, and recordkeeping, and to clarify questions identified while reviewing records and observing site activities. The Review Team inspected the designated activities and facilities to evaluate environmental compliance with each respective permit and identified:

- ◆ Facilities addressed within each permit
- ◆ Processes used to record and monitor compliance
- ◆ Operational units or areas assigned to fulfill a regulatory requirement

The Team used the compliance checklists to capture evidence that practices were following procedures, records were maintained in accordance with regulatory requirements, and permit requirements were met. The Team completed site visit logs that included brief notes and identified any photographs taken. They also recorded pre-decisional deficiency observations as needed. Due to security concerns, photographs were only taken by LANL personnel upon request of the Review Team. The schedule followed for the on-site Review is included as Appendix E. Details regarding site visits and methodology for each functional area are detailed in Section 3.

2.4 Reporting

The Review Team used the following reporting mechanisms during the Triennial Review:

- ◆ In-brief
- ◆ Compliance checklists
- ◆ Site visit logs
- ◆ Observation forms
- ◆ Out-briefs
- ◆ SEP Triennial Review Report

The Review Team conducted an in-brief that provided an overview of the planned methodology, when observations would be provided, and the coordinated schedule for all on-site activities.

The Team used the compliance checklists to capture evidence specific to each permit condition within the three functional areas. The Team used the checklists as working documents to identify if and how the condition was met and if further clarification was needed. The air, ground water, and hazardous waste compliance checklists are provided in Appendices A.1, B.1, and C.1, respectively.

Review Team members completed site visit logs to capture where they visited, documents reviewed, contact information, and photographs taken during the on-site Review. The Review Team identified specific instances of pre-decisional environmental compliance deficiencies and noteworthy practices.

Any potential compliance deficiencies or positive practices identified with the compliance checklists were entered on an observation form and communicated directly with designated representatives at the close of each day of the site visit. Additional observations were communicated after the on-site visits upon evaluation of collected data. Observation forms are included in Appendices A.2, B.2, and C.2, as applicable.

Upon completion of the on-site visits, the Review Team provided out-briefs by functional area on the likely conclusions to be presented in the Triennial Review Report, a summary of the observations made, suggestions, and exemplary practices noted.

The results of the Review are presented by functional area in this SEP Triennial Review Report.

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3 Implementation of Methodology by Functional Area

The methods used by the Review Team are described in the following subsections for each functional area.

3.1 Air

The review of the air compliance program at LANL focused primarily on the Title V Operating Permit issued by NMED (NMED 2017a). The Title V Permit compiles nearly all air pollution control and management regulatory requirements for the facility. These requirements are derived from state and federal regulations and from construction permits issued to LANL by NMED.

The Title V Permit has more than 400 requirements that LANL must meet on an ongoing basis. LANL has a dedicated Air Compliance Group; one of its functions is to manage compliance with the Title V permit requirements. The Review Team's approach to the triennial air review was to evaluate the current state of compliance with the Title V permit in a comprehensive and detailed fashion, and to understand and evaluate the systems and practices used by the Air Compliance Group to manage air matters at LANL.

The Review Team developed and used its compliance checklist (provided in Appendix A.1) to organize the Title V Permit review and evaluate permit conditions. The permit has distinct sections that typically address one emission source (e.g., the asphalt plant) or a group of similar sources (e.g., diesel generators). The compliance checklist was organized by these groupings to facilitate the review.

The general review process was to go through the checklists line by line and determine if LANL is complying with each requirement. The Review Team made brief notes on the checklists regarding the method of compliance and documented the basis of compliance for each requirement. Some of the information needed to make the determinations was gathered through visits to technical areas at LANL to observe equipment, air pollution controls, monitoring devices, etc., and to interview site operators and deployed environmental professionals (DEPs) at these areas. Other requirements were evaluated by reviewing reports, data, calculations, and other records kept at the LANL central air compliance office in White Rock, New Mexico.

In addition to the detailed review of NMED-regulated Title V Permit conditions, the Review Team conducted, for completeness, an overview of other federally regulated aspects of air quality management and compliance conducted by the LANL Air Compliance Group. Some of these other areas are usually covered by the Title V Permit but were explicitly excluded from the Review Team's scope of work for conducting the detailed review. Therefore, the Review Team only provided an overview of these federal-only regulatory programs including National Emissions Standards for

Hazardous Air Pollutants (NESHAP) for radionuclides, radon and asbestos; management of ozone-depleting substances (ODS); and tracking and reporting greenhouse gas (GHG) emissions.

The entire schedule of on-site review activities spanned 2 weeks with each day generally divided between TA visits and technical staff discussions and review of records in White Rock. The schedule of review activities is shown in Appendix E.

The Review Team visited 11 technical areas or buildings to view air pollution emission sources regulated by the Title V Permit and to discuss air management practices with the staff dedicated to each area. The following subsections summarize the emission unit site visits and key activities accomplished at the various locations.

3.1.1 TA-3 Power Plant

TA-3 houses three large boilers that generate steam for the facility and the combustion turbine. Title V Permit Sections A1300–A1307 list the specific requirements for these emission sources. During this site visit, the Review Team observed the three boilers, their stacks, their flue gas recirculation fans (used for nitrous oxides [NO_x] control), the control room with digital display of monitored operating parameters (tracked for permit compliance), and the logbook for manually recording the monitored readings. The Review Team also saw the combustion turbine, its stack, control room and digital display, and logbook. The area also has a fuel oil tank used for Boiler No. 3 (rarely used) in lieu of natural gas. The Review Team observed the natural gas meter used to measure flow to the combustion turbine. The Team interviewed the plant manager and the DEP during the site visit, and reviewed compliance procedures and practices.

3.1.2 TA-52 Data Disintegrator

TA-52 houses the data disintegrator that is used to shred paper documents. Title V Permit Sections A1200–A1207 list the specific requirements for this emission source. During this site visit, the Review Team observed the disintegrator and the two-stage dust collection system used to control particulate emissions. The Team interviewed the equipment operator and the DEP and reviewed the compliance procedures along with the logbook for the required monthly records. The building that houses this equipment also houses another shredder that does not vent outside the building, is not a source of air pollution, and is not regulated under the Title V Permit.

3.1.3 Sanitary Effluent Reclamation Facility Evaporators

Five evaporative sprayers were permitted in 2017 to operate at the Sigma Mesa Evaporative Basins (water holding ponds) at the Sanitary Effluent Reclamation Facility (SERF) to aid evaporation and manage the volume in the ponds. The sprayers are considered sources of particulate matter; Title V Permit Sections A1500–A1507 list the specific requirements for these emission sources. The Review Team observed the ponds and the installed evaporative sprayers (only three sprayers were in use). None of the sprayers were operating on the inspection day due to low ambient temperatures. The Review Team also observed the weather monitoring and control module adjacent to the ponds used to activate the sprayers and manage their operation. During the visit, the Review Team met

with the facility manager, reviewed compliance procedures, and reviewed the logbook for required monthly records.

3.1.4 TA-60 Asphalt Plant

The LANL asphalt plant is located in TA-60. Title V Permit Sections A600–A607 list the specific requirements for this emission source. During the site visit, the Review Team observed the hot mix asphalt plant, the two-stage dust collection system used to control particulate emissions, exhaust stack, and covered conveyors to prevent fugitive dust. The Review Team also saw the chart recorder used to record dust collector pressure drop readings in the control room. During the visit, the Review Team met with the plant operator and the DEP, reviewed compliance procedures, and reviewed the logbook for required readings, opacity test reports, and records.

3.1.5 Radiological Laboratory/Utility/Office Building Boilers and Generators

The Radiological Laboratory/Utility/Office Building (RLUOB) has three hot water boilers and three emergency diesel generators. A fourth boiler is permitted but has not been installed. Title V Permit Sections A800–A807 (External Combustion) and A1100–A1107 (Internal Combustion) list the specific requirements for these emission sources, respectively. During this site visit, the Review Team observed three boilers and stacks, and three generators. The Review Team confirmed the readings on the non-resettable hour meters on the generators and the natural gas flow meter for the boilers. During the visit, the Review Team met with the DEP, reviewed compliance procedures, and reviewed the logbook for required meter readings.

3.1.6 TA-53 Boilers

Title V Permit Sections A800–A807 (External Combustion) list the requirements for ten boilers at various locations at LANL, including three at the RLUOB discussed above. The Review Team visited TA-53 as a sample of the other boilers addressed in the permit. During this site visit, the Review Team observed the two boilers and their stacks, met with the DEP, reviewed compliance procedures, and reviewed the logbook for monthly gas meter readings.

3.1.7 TA-33 Generators

Title V Permit Sections A1100–A1107 (Internal Combustion) list the requirements for eleven diesel generators at various locations at LANL, including three at the RLUOB discussed above. The Review Team visited site TA-33 as a sample of the other generators in the permit. During this site visit, the Review Team observed the three portable generators and confirmed the readings on the non-resettable hour meter on each generator. During the visit, the Review Team met with the DEP, reviewed compliance procedures, and reviewed the logbook for required meter readings and opacity test results.

3.1.8 TA-55 Plutonium Facility Beryllium Sources, Degreaser

The plutonium facility (PF-4, Building 4) has several beryllium emission sources located in TA-55. Title V Permit Sections A700–A707 list the specific requirements for these emission sources. An

organic halogenated solvent degreaser is also located at PF-4. Title V Permit Sections A1000–A1007 list the specific requirements for this emission source. Due to the sensitive nature of work performed in PF-4 and the requirement for special security clearance, none of the emission sources in PF-4 could be visually inspected. Instead, the Review Team met with project engineers, the DEP, and the environment, health, and safety team lead to discuss and review operations, including compliance procedures and practices. During the visit, the Review Team inspected logbooks for required recordkeeping. The project engineer confirmed that the degreaser process is being changed to eliminate the regulated solvent and render the degreaser exempt from current permit requirements.

3.1.9 TA-3 Beryllium Technology Facility and Sigma Facility

The Beryllium Technology Facility (BTF) and the Sigma Facility with beryllium emission sources are located in TA-3. Title V Permit Sections A700–A707 list the specific requirements for these emission sources. At the BTF, the Review Team observed one processing area with flexible hose and hood for local ventilation through glass windows (entrance restricted to trained beryllium workers). All sources are vented to a high-efficiency dust collection system consisting of a cartridge fabric filter dust collector followed by a bank of high-efficiency particulate air (HEPA) filters. The stack of the air pollution control system is continuously sampled for particulate matter. These samples are then analyzed for beryllium and the results are reported to NMED. During the visit, the Review Team observed the air pollution control system, stack, sampling port, and sampling system.

At the Sigma Facility, the Review Team observed the electroplating room (all electroplating baths have slot hoods ducted to the dust collection system) and metallography area. During the visit, the Review Team met with the DEP and one process engineer, reviewed compliance procedures, and confirmed the entry of required records in the permit compliance logbook.

3.1.10 TA-35 Target Fabrication Facility

The Target Fabrication Facility (TFF) has beryllium emission sources and is located in TA-35. The Review Team observed the micromachining area with equipment ducted to the dust collection system. During the visit, the Review Team met with one process engineer and reviewed his operation. This facility has no ongoing compliance monitoring requirements; the only requirement is to maintain records of past source emission tests (Title V Permit Section A707; NMED 2017a). The Review Team confirmed that this test report was maintained at the TFF and at the Central Air Compliance department. In addition to site visits, the Review Team examined records and reports in the Air Compliance Group office in White Rock to confirm compliance with monitoring, recordkeeping, and reporting requirements.

3.1.11 Other Air Compliance Programs

The Review Team met with the responsible staff in the LANL Air Compliance Group to review the group's management of the air compliance areas described below.

- ◆ **Chemical Tracking.** LANL tracks potential emissions of volatile organic compounds (VOCs) and hazardous air pollutants from the use of chemicals in laboratories. This information is needed for

the annual emission inventory (LANL 2017d) and to assess compliance with the chemical usage requirements in Title V Permit (Sections A900–A907), which include an annual VOC emission limit for the RLUOB. LANL maintains a database of all chemicals purchased, and the Air Compliance Group has a system to use this information and conservatively calculate maximum emissions from the use of these chemicals.

- ◆ **Risk Management Plan (RMP).** A risk management plan and program could be needed by facilities that store extremely hazardous substances above thresholds defined by federal regulation (40 CFR 68). LANL effectively tracks the purchase and storage of listed substances to assess the applicability of the RMP regulations. LANL does not currently need an RMP because no listed materials are present at LANL in quantities approaching their thresholds.
- ◆ **Emissions Inventory.** LANL must report its actual emissions to NMED and the U.S. Environmental Protection Agency (EPA) every year. The Air Compliance Group systematically collects operational data from its emission sources and has a system of spreadsheets to reliably and accurately calculate emissions for this purpose.
- ◆ **NESHAP Radionuclides Program.** LANL is subject to NESHAP for radionuclide emissions (40 CFR 61 Subpart H) and radon emissions (40 CFR 61 Subpart Q). These regulations and their applicability are specified in Title V Permit Section A115. A detailed evaluation of LANL compliance with this regulation is outside the scope of the SEP Triennial Review, but the Review Team was provided with an overview of the LANL program. LANL measures radionuclide emissions from stacks with the highest emission levels (28 stacks) and measures radionuclide concentrations in the ambient air at the property line and other locations of interest via a network of approximately 40 ambient air monitors. This network is referred to as Airnet. Airnet is used to demonstrate compliance with the annual 10-millirem radionuclide dose limit in NESHAP. These results are reported to EPA and DOE annually (Fuehne and Lattin 2017), and they are available to the public via the EPRR. LANL has consistently complied with the NESHAP dose limit: extremely low levels have been measured over the last 4 years.
- ◆ **New Project Review/Management of Change.** When a new activity takes place at LANL (e.g., one of the laboratories introduces a new emission source) or a newly installed piece of equipment could emit air pollutants, it must be recognized and reviewed to determine if it is subject to air regulations and if an air permit is required. LANL has developed a consistent process for these reviews. The facility has a written procedure for air quality reviews that describes the review process (LANL 2017c). The process involves use of the Integrated Review Tool (LANL system) and the Permits and Requirements Identification (PRID) system. Through these systems, all goods, services, and activities are identified for review by air compliance specialists. Additional written procedures are available for air quality regulatory review and permitting, review of new or modified air emission sources (LANL 2015b) and review of new or modified radioactive air emission sources (LANL 2015c).

- ◆ **Open Burning.** Open burning of vegetative material on LANL grounds is regulated under Title V Permit Sections A1400–A1407. LANL has not conducted open burning since the open burning requirements were added to the Title V Permit, and it has no plans to do so in the future.
- ◆ **Greenhouse Gases.** Per 40 CFR 98, LANL is required to report GHG emissions to the EPA annually. The Air Compliance Group tracks natural gas usage for all combustion sources at the facility, including the significant emission sources in the Title V Permit (e.g., asphalt plant, combustion turbine, and boilers) and insignificant sources. LANL calculates GHG emissions from this natural gas usage and from diesel fuel combustion in generators.
- ◆ **Title VI Refrigerant Program.** LANL is required to manage its use and emissions of ODSs under the Clean Air Act stratospheric ozone protection rules (40 CFR 82). These regulations and their applicability are specified in Title V Permit Section A117. Although a detailed evaluation of LANL compliance with this regulation is outside the scope of the SEP Triennial Review, the Review Team was provided with an overview of the LANL program. The ODSs at LANL are primarily chlorofluorocarbons and hydrochlorofluorocarbons used in the refrigeration and halon systems. LANL has a rigorous program for tracking the purchase and use of new ODSs, as well as for servicing and maintaining ODS-containing equipment, disposing of ODSs, and training staff members who service this equipment. The Air Compliance Group tracks ODSs in all appliances at LANL regardless of size (40 CFR 82 only regulates equipment with at least 50 pounds of ODS) and in fleet vehicles.
- ◆ **Asbestos Program.** Asbestos disturbance and removal during construction is regulated by the NESHAP for asbestos (40 CFR 61 Subpart M). These regulations and their applicability are specified in Title V Permit Section A116. Although a detailed evaluation of LANL compliance with this regulation is outside the scope of the SEP Triennial Review, the Review Team was provided with an overview of the LANL program. All construction and demolition projects are reviewed in the PRID system, where potential presence of asbestos material is identified. The Air Compliance Group ensures that the EPA and NMED are properly notified of asbestos removals as required under 40 CFR 61 Subpart M.

3.2 Ground Water

The Review Team examined activities and facilities for compliance with state-specific regulations for ground water defined under the following:

- ◆ New Mexico Water Quality Act (WQA) NMSA 1978 Sections 74-6-1 through 74-6-17
- ◆ New Mexico Water Quality Control Commission Regulations, NMAC 20.6.2
- ◆ Federal regulations for ground water monitoring for all regulated units defined under the HWFP (40 CFR 264.90(a)(2))
- ◆ Monitoring requirements of 40 CFR 264 Subpart F and general conditions in the HWFP Section 11.3, Ground Water Monitoring.

These regulations address the control of discharge of contaminants from activities and facilities into ground and surface water to protect these resources for future use and to protect public health. They also provide the basis for the following regulatory permits and their associated corrections and modifications issued by NMED and EPA to DOE and LANS as co-permittees:

- ◆ Ground Water Discharge Permit Renewal and Modification, LANL Domestic and Industrial Wastewater Facilities: DP-857 (NMED 2016f)
- ◆ Ground Water Discharge Permit, LANL Groundwater Projects: DP-1793 (NMED 2015)
- ◆ Ground Water Discharge Permit, LANL Septic Tank-Disposal Systems: DP-1589 (NMED 2016c). NMED issued permit corrections in November 2016 (NMED 2016e), and two amendments in March 2017 and August 2017 (NMED 2017d, NMED 2017f).
- ◆ Ground Water Discharge Permit, LANL Underground Injection Control Wells: DP-1835 (NMED 2016d). NMED issued an amendment to DP-1835 in July 2017 (NMED 2017e).
- ◆ HWFP EPA ID NM0890010515 – Ground Water Monitoring Program (NMED 2017g)

The Review Team reviewed documents (e.g., work plans, sampling records, field notes, standard operating procedures (SOPs), published papers, analytical results, and monitoring reports) to determine compliance with the individual permit conditions. Individual ground water permit checklists are provided in Appendix B.1. and identified in the reference sections. The Team reviewed report data and regulatory submittal documentation maintained on the EPRR (LANL 2018g), in the Intellus New Mexico (IntellusNM; LANL 2018h) electronic database, and in LANL files. IntellusNM contains environmental monitoring data provided by LANL and the New Mexico Environment Department DOE Oversight Bureau (NMED DOE OB). All data contained in IntellusNM (including documents, maps, and charts) are unclassified.

The Review Team developed and used its compliance checklists (provided in Appendix B.1) to evaluate each permit condition. The Review Team noted the method of compliance and documented the basis of compliance for each ground water discharge permit requirement. Some evidence was gathered from documents. The Team also gathered information through site visits to areas addressed in the LANL ground water permits to observe activities and to interview site operators and DEPs.

The following subsections summarize key activities and methods used to address each ground water permit.

3.2.1 Ground Water Discharge Permit Renewal and Modification LANL Domestic and Industrial Wastewater Facilities, DP-857

Ground water discharge permit for domestic and industrial wastewater facilities, DP-857 regulates operations and water quality of discharges for the sanitary wastewater system (SWWS), SERF, and the Sigma Mesa Evaporation Basins (SMEB). Each system is discussed below.

The SWWS, located in TA-46, is an extended aeration/activation sludge treatment system. The SWWS treats domestic sewage and industrial wastewater. Treated effluent is discharged to the SERF or Outfalls 001 and 13S. Outfall 001 is also regulated under a federal National Pollutant Discharge Elimination System (NPDES) Permit (Permit NM0028355) issued by the EPA and certified by NMED. Outfall 13S is an emergency gravity discharge option at the SWWS and has never been used.

The SERF is located within TA-03 and contains a 400,000-gallon storage tank and two reverse osmosis unit buildings. The SERF was recently expanded to extract a larger percentage of treated water from the SWWS effluent. The reverse osmosis reject water is sent to the SMEB. The SMEB is located in TA-60 and uses five double-lined basins to evaporate the reverse osmosis reject water. Mechanical evaporators (or evaporative sprayers) are used during low-velocity wind conditions.

The Review Team studied records; interviewed SWWS, SERF, and SMEB managers, environmental compliance personnel, operators, and other points of contact; and conducted site visits to the SWWS, SERF, SMEB, and Outfalls 001, 03A027, and 13S. The Review Team completed a checklist for DP-857 (Appendix B.1.1) to document compliance with each condition identified in the permit. During site visits, the Review Team noted operating conditions, reviewed compliance procedures and SOPs, reviewed logs and on-site records, and interviewed operators, as applicable.

3.2.2 Ground Water Discharge Permit, LANL Ground Water Projects, DP-1793

DP-1793 regulates the disposal of treated ground water (from ground water remediation projects) by the application of land irrigation within TA-05, TA-09, and TA-16. The Review Team collected and reviewed information (primarily from work plans and monitoring reports) and interviewed operators and environmental compliance personnel regarding land application sites, treatment units, storage units, disposal methods, operations and maintenance, and monitoring and reporting activities. The Review Team conducted site visits at TA-05 and observed the ion exchange treatment system as well as the four land application zones. The Review Team also visited the TA-09 ground water treatment system and irrigation area.

For safety reasons, the Review Team was not able to visit TA-16. However, irrigation has not occurred in TA-16. The Review Team completed a checklist for DP-1793 (Appendix B.1.2) to document compliance with each permit condition.

3.2.3 Ground Water Discharge Permit LANL Septic Tank-Disposal Systems, DP-1589

DP-1589 was issued by NMED to control the discharge of water contaminants from LANL's septic tank disposal systems into ground and surface water. When the original discharge permit was issued (July 22, 2016), LANL had seven active septic tank disposal systems, four inactive septic tank disposal systems, and six abandoned septic tank disposal systems that were not classified as potential release sites. An additional 53 abandoned septic tank disposal systems were identified as potential release sites, which are or will be addressed under the Compliance Order on Consent (NMED 2016b). Three of the seven active septic tank disposal systems (TA-16-0178, TA-33-0031, and TA-49-0118) were converted to domestic wastewater holding tanks on September 20,

October 3, and October 12, 2016, respectively. Therefore, these three systems are no longer subject to regulation under DP-1589 and were not included in this Review. The Review Team evaluated active septic tank disposal systems TA-33-0179, TA-33-0375, TA-39-0132, and TA-58-0052. Inspection and monitoring reports were reviewed, and compliance personnel were interviewed. The Review Team observed conditions of the leach fields at each active system location:

- ◆ TA-33-0179: 1,000-gallon tank serving building TA-33-178
- ◆ TA-33-0375: 5,000-gallon tank serving buildings TA-33-19 and -114
- ◆ TA-39-0132: 1,000-gallon tank serving building TA-39-111
- ◆ TA-58-0052: 1,000-gallon tank serving building TA-58-49

The septic tank disposal systems are pumped out annually to meet the requirements of Permit Condition 10 and have therefore effectively been turned into holding tanks. The Review Team completed the checklist for DP-1589 (see Appendix B.1.3) and provided notes for the basis of compliance.

3.2.4 Ground Water Discharge Permit, LANL Underground Injection Control Wells, DP-1835

Discharges of contaminants from the injection of treated ground water (effluent) into the regional aquifer are regulated under DP-1835. This permit regulates the pumping of extraction wells installed in the regional aquifer (currently three wells; the permit allows for more); the ion exchange treatment systems (for meeting regulatory requirements), and injection of treated ground water into the regional aquifer through six or more Class V underground injection control (UIC) wells. Ground water is currently permitted to be pumped from three extraction wells (CrEX-1, CrEX-2, and CrEX-3) and conveyed to ion exchange treatment systems to treat chromium concentrations to less than 90% of the concentration limits set by NMAC. The permit regulates the injection of treated water into the regional aquifer from the UIC wells (CrIN-1 through CrIN-6). Ground water generated by backflushing the injection wells or during well maintenance activities, as well as purge water collected from ground water sampling activities, is permitted to be pumped to storage tanks, transported to an ion exchange treatment unit for treatment if necessary, stored in lined impoundments, and then land applied under DP-1793 (see Section 3.2.2). The Review Team reviewed quarterly monitoring reports, analytical results, chain-of-custody documentation associated with ground water sampling activities, and operating procedures. The Team also conducted site visits of the monitoring, extraction, and injection wells; ion exchange treatment systems, and the supervisory control and data acquisition control system. The Review Team completed the checklist for DP-1835 (see Appendix B.1.4).

3.2.5 Ground Water Monitoring Program of the Hazardous Waste Facility Permit

Ground water monitoring is conducted under NMED approved Interim Facility-Wide Ground Water Monitoring Plans (IFGMP) and Long-term Ground Water Monitoring Plans as approved under the Consent Order (NMED, 2016b). The General Conditions (Section 11.3) of the HWFP (NMED 2017g) issued to LANL, state:

So long as the Consent Order is in effect, fulfilling the ground water monitoring requirements of the Consent Order shall fulfill the ground water monitoring requirements of 40 CFR Sections 264.90 through 264.100.

The Review Team reviewed applicable portions of Section 11.3 through 11.12 of the HWFP to develop a checklist (provided in Appendix B.1.5) to evaluate the installation and construction of monitoring wells, along with the sampling and reporting procedures inherent with fulfilling both the Consent Order and HWFP. The checklist was developed from pertinent sections of the HWFP that provide specifications for well installation and construction (Section 11.11), ground water sampling (relevant Sections 11.10.2 and 11.10.3), and periodic monitoring reporting for ground water (Section 11.12.4). Any other activity expressly related to release assessment investigations, risk assessments, interim measures, or corrective actions/compliance with the various requirements of detection, compliance, or corrective action monitoring are not within the scope of this Review. This Review did not include an evaluation of the spatial and temporal adequacy of the monitoring networks.

The Review Team recognized that the HWFP was not congruent with all conditions of the Consent Order. Although the Consent Order takes precedence in the administration of the monitoring program, the Review Team identified these inconsistencies during the Review as potential operational deficiencies.

Records reviewed included workplans, well completion reports, well reconfiguration field summary reports, borehole completion reports, and ground water level status reports. Well construction procedures were reviewed for a subset of wells (33 wells, approximately 25% of the well monitoring network from the 2016, 2017, and 2018 Facility-Wide Monitoring Plans [LANL 2015a; LANL 2016a; and LANL 2017b]) with a focus on downgradient well locations from the five monitoring groups and a representation of downgradient wells from the general surveillance monitoring group (see Table 3-1 for breakout). The well checklists are located in Appendix B, Ground Water.

Table 3-1: Well Monitoring Network Sample Set

IFGMP Monitoring Group	Number of Wells Evaluated
TA-21	2
Chromium Investigation	4
TA-54	5
TA-16 260	3
Material Disposal Area AB	4
General Surveillance	15
IFGMP = Interim Facility-Wide Ground Water Monitoring Plan	

The Team also reviewed three public water supply wells (O-1, PM-1, and PM-4) to understand the water supply regime of these wells relative to the aquifer intervals monitored under the IFGMP (LANL 2016a; LANL 2017b).

Drilling and well installation methods and materials reviewed included the following:

- ◆ Type of drilling method
- ◆ Borehole diameter, casing diameter
- ◆ Alignment
- ◆ Type of well
- ◆ Centralizers
- ◆ Annular seal
- ◆ Bentonite seal
- ◆ Filter pack
- ◆ Well construction materials
- ◆ Well screen slot size
- ◆ Number of screened intervals and screen length
- ◆ Well development procedures
- ◆ Surface completion
- ◆ Geophysical data
- ◆ Source of information
- ◆ Aquifer interval
- ◆ Sampling pump selection
- ◆ Drilling date
- ◆ Use of additives

These details are provided in Appendix B.1.6. A subset of ground water monitoring wells was visually inspected, and ground water sampling at Monitoring Well R-29 was observed during the site visit. Observations, interviews, and records reviewed were taken into consideration when completing the HWFP ground water monitoring program checklist (see Appendix B.1.5).

The majority of information reviewed was compiled from publicly available records in either the LANL EPRR or the IntellusNM online database. These applications were valuable tools for performing the desktop review of the documentation associated with the ground water program. The EPRR was primarily used for obtaining technical reports and work plans, transmittals between LANL and NMED, approval and rejection letters, and monthly notification letters. The IntellusNM database was used to obtain well completion, ground water sampling results, and water level measurement information; and review chain-of-custody information.

The Review Team examined internal LANL data provided by the Associate Directorate for Environmental Management (ADEM) that included montages of well construction, maintenance and calibration histories, equipment specifications, and graphics with analytical and water level historical

trends (LANL 2018b). The Review Team also inspected ADEM internal documentation on how sampling events are planned, tracked, and executed in the field by ground water contactors. Field notes, forms, and calibration and custody records were specifically reviewed for a typical monitoring event that the Review Team observed at Well R-29. Additional documentation reviewed included information on the process of managing and disposing ground water purge waters after a sampling campaign.

3.3 Hazardous Waste

As part of the SEP Triennial Review, relevant facilities at LANL were reviewed for compliance with RCRA regulations (Protection of the Environment, 40 CFR 124, 260–268, 270, 273, and 279–280 [2008]); state-specific regulations defined in NMAC 20.4.1 and The New Mexico HWA Sections 74-4-1 to -14 (2018); as well as the HWFP, EPA ID NM0890010515 (NMED 2017e), issued to DOE and LANS as co-permittees. All CFR references in this hazardous waste section are from the version dated July 2008, as incorporated in NMAC 20.4.1.

Based on the quantity, type, and activities associated with the generation, storage, treatment, and transportation of RCRA-regulated wastes, LANL is regulated as the following:

- ◆ Large Quantity Generator of Hazardous Waste
- ◆ Transporter of Hazardous Waste
- ◆ Interim Status Treatment Facility
- ◆ Permitted Hazardous Waste Treatment and Storage Facility
- ◆ Large Quantity Handler of Universal Waste
- ◆ Generator of Used Oil

Checklists were developed for each RCRA-regulated unit. These checklists were developed from either the direct text of the regulatory requirements, regulatory requirement interpretations by The Environmental Assessment and Management (TEAM) Guide authored by the U.S. Army Corps of Engineers (USACE 2018), the permit conditions, or a combination based on the regulated unit's applicability.

Each RCRA-regulated unit associated with the above activities is managed by a waste management coordinator (WMC). These WMCs are defined in the LANL RCRA Personnel Training Course 7488 (LANL 2017a) as:

The individual responsible for coordinating waste management activities on behalf of waste generators, line managers, facility managers, field project leaders, waste management groups, and other LANL organizations. This individual also coordinates resolution of waste management issues on behalf of his/her waste-generating organization and reviews documents pertaining to the management of waste.

The WMC for each unit accompanied the Review Team during its field assessment. The WMCs were available to answer any questions and were open to discussing any challenges they encountered in their daily activities.

3.3.1 Document Review

LANL uses the EPRR to make documents available to the public. The Review Team attended the annual public training for EPRR in October and then used the site to review publicly available documents for compliance.

Many records related to tracking of wastes are maintained on the Waste Compliance and Tracking System (WCATS, LANL 2018a). The Review Team used WCATS to verify inventories at permitted storage areas, review waste characterization documents, and track wastes generated on site from generation to final disposal. This waste life cycle is commonly referred to as “cradle to grave.”

If a required record was not maintained on either the EPRR or in WCATS, the LANL Environmental Compliance staff was requested to review the record and a note was included in the associated hazardous waste review checklist.

3.3.2 Large Quantity Generator of Hazardous Waste

LANL is defined as a large quantity generator of hazardous waste based on the amount of hazardous waste generated on site, exceeding the threshold of 1,000 kilograms per calendar month. Generator sites at LANL include approximately 500 sites that are exempt from permitting requirements and are defined as either central accumulation areas (CAAs) or satellite accumulation areas (SAAs). CAAs allow for the accumulation and storage of an unlimited amount of waste for up to 90 days under the regulatory requirements of 40 CFR 262.34(a). SAAs allow for the accumulation and storage of up to 55 gallons of hazardous waste or 1 liter of acutely hazardous waste for an unlimited period under the regulatory requirements of 40 CFR 262.34(c). Figure 3-1 shows an SAA. The Review Team developed a field checklist based on the requirements of 40 CFR 262.34(a) and (c) to review the generator sites (Accumulation Time, 40 CFR 262.34 (2008)). This checklist is combined with the used oil accumulation areas checklist and the universal waste accumulation areas checklist and is provided in Appendix C.1.1.2.

As the Review Team completed its field visits, some generators, defined as the person whose act or process first causes a hazardous waste to become subject to regulation, were interviewed to determine their waste management procedures, their understanding of generator requirements, and the lines of communication for waste generation activities to determine the effectiveness of training. If no generators were available, training records were reviewed for a representative sample of generators and a note was made in the associated checklist. The generator checklist (Appendix C.1.1.2) has a column that includes WCATS inventory numbers associated with either a container or waste stream profile to review the profile documentation, hazardous waste codes, and path for treatment and disposal with the associated WMC.



Figure 3-1: Example of Satellite Accumulation Area

3.3.3 Interim Status Treatment Facility

LANL is defined as an interim status treatment facility based on the treatment activities at the TA-16 open burn unit and the TA-36 and TA-39 open detonation units. Facility-wide compliance and field compliance were reviewed against a checklist adopted from the USACE TEAM Guide (USACE 2018). The interim status treatment facility checklists are provided in Appendix C.1.2. Inspection and use records were reviewed, on-site contingency plans were evaluated, communication systems were tested, and evacuation procedures were discussed while in the field with the interim status unit operators or the associated WMCs. In addition to the general conditions, each interim status unit's associated permit application was reviewed for accuracy.

3.3.4 Permitted Treatment and Storage Facility

LANL operates under a hazardous waste treatment and storage permit issued by NMED (NMED 2017g). The HWFP regulates storage of hazardous waste at five LANL technical areas (TA-3, TA-50, TA-54, TA-55, and TA-63) and treatment at two facilities (TA-50's waste characterization, reduction, and repackaging facility and TA-55's mixed waste stabilization unit). Examples of container storage at permitted units are shown in Figure 3-2 and Figure 3-3.



Figure 3-2: Container Storage at Permitted Storage Area



Figure 3-3: Container Storage at Permitted Storage Area

Each of these technical areas has specific location and storage requirements associated with the storage and treatment of hazardous waste, in addition to the general requirements identified in the HWFP Section 2, General Facility Conditions; and Section 3, Storage in Containers (NMED 2017g). The Review Team developed a checklist for each of the five permitted technical areas, which included requirements under Site-Specific Permit Conditions and General Permit Conditions, with some checklist items acting as a field condition checklist.

In addition to the checklists specific to storage and treatment at each individual facility at LANL, the Team developed and completed a checklist that identified facility-wide permit conditions. The facility-wide checklist identified recordkeeping, reporting, public notification and outreach, and emergency response requirements of the HWFP. The five site-specific review checklists and one facility-wide checklist are presented in Appendix C.1.3.

3.3.5 Large Quantity Handler of Universal Waste

LANL is defined as a large quantity handler of universal waste based on the amount of universal waste handled and stored on site that exceeds the threshold of 5,000 kilograms per year. The Team developed and completed a field checklist based on the large quantity handler of universal waste regulations of 40 CFR 273 and the modifications and omissions identified in NMAC 20.4.1.1001. This checklist was combined with the generator checklist and used oil checklist and was organized according to the respective WMC. This checklist is provided in Appendix C.1.1.2.

3.3.6 Generator of Used Oil

LANL is defined as a used oil generator based on the generation of oil that has been refined from crude oil or any synthetic oil that has been used and, as a result of such use, is contaminated by physical or chemical impurities. The Review Team developed a field checklist based on the used oil generator regulations of 40 CFR 279 and modifications of NMAC 20.4.1.1003. This checklist was combined with the generator checklist and universal waste checklist and was organized according to each respective WMC. This checklist is provided in Appendix C.1.1.2.

3.3.7 Transportation of Hazardous Waste

LANL is defined as a transporter of hazardous waste, although all transport of hazardous waste, universal waste, and used oil from LANL is currently handled on a contract basis. LANL's activities as a transporter of hazardous waste were not within the snapshot-in-time scope of the review. The Team reviewed the pre-transport and recordkeeping requirements of preparing a waste for off-site shipment, manifesting an off-site shipment, and contracting the transport of waste to a permitted TSDF to ensure RCRA compliance.

WMCs are responsible for packaging and initiating the transfer of hazardous waste through a Waste Disposition Request on WCATS once a generator notifies them that the waste is ready to be removed. Although each SAA allows for the accumulation of up to 55 gallons of hazardous waste, the Team noted that most waste shipments are initiated well before meeting this threshold. During the on-site walkthrough, each generator was interviewed and described how LANL procedures, specifically Preparing and Shipping Waste/Material Off-Site (LANL 2018e) and LANL Waste Management (LANL 2018f), are implemented for shipment of hazardous waste, universal waste, or used oil. Select WMCs demonstrated the procedure for initiating a shipment of waste through WCATS during the review, as well as showed examples of WCATS tracking of the transport of hazardous waste to the appropriate permitted TSDF.

During the walkthrough, the Team identified a small number of waste containers prepared for shipment. These containers were reviewed for compliance with requirements of 40 CFR Part 262 Subpart C: Pre-Transport Requirements by reviewing the packaging, labeling, marking, and placarding.

A generator that transports, or offers for transport, a hazardous waste for off-site treatment, storage, or disposal, or a TSDF that offers for transport a rejected hazardous waste load must prepare a manifest (Office of Management and Budget [OMB] Control No. 2050-0039) on EPA Form 8700-22, and, if necessary, EPA Form 8700-22A, in accordance with 40 CFR 262.20 and 262.23. Minimal transportation activity from LANL has taken place in the past year. A representative sample of manifests was evaluated against the requirements of 40 CFR 262.20 and 262.23. These regulations were incorporated into a checklist that is provided in Appendix C.1.4.

4 Observations and General Impressions

4.1 Overall

The Review Team defined observations as potential compliance deficiencies or positive practices and identified four observation types:

- ◆ Type I: Operational deficiency (not following LANL procedure)
- ◆ Type II. Potential environmental regulatory violation
- ◆ Type III. Immediate negative impact to human health or the environment
- ◆ Positive practice

The Review Team identified 22 observations. Of the 22 observations reported, five were Type I, 15 were Type II, zero were Type III, and two were positive practices. The Review Team completed pre-decisional observation forms (Appendices A.2, B.2, and C.2 for air, ground water, and hazardous waste, respectively). The Team submitted each observation form to key LANL personnel for consideration with an opportunity to clarify the observation, provide additional information, or change conditions to address the observation, effectively resolving and thereby closing out the observation. Fourteen of the 20 Type I and Type II observations were closed to date. Each observation form includes the observation number, technical area, type, contact information, and category. Descriptions of general impressions, observations, and positive practice for each functional area are provided in the following subsections.

4.2 Air

4.2.1 Observations

The Review Team identified no observations.

4.2.2 General Impressions

Compliance with air regulations and the Title V Permit is well managed and executed at LANL. The compliance program is well developed and has adequate staffing of air quality specialists with clear lines of responsibility. The group has an excellent management system and processes in place to ensure compliance with each condition in the Title V Permit and to ensure that new activities at LANL are identified and reviewed for air emissions and applicability of air rules.

All equipment, including the air pollution control system, appeared to be in good working order and well maintained.

The level of coordination between the Central Air Compliance Group and the DEPs at each emission source, and the group's data and report management system are exemplary. For each significant emission source, the Air Compliance Group has developed an air quality compliance binder that

clearly describes the Title V Permit requirements and responsibilities for the DEP. The binders have a consistent, clear, and logical organization that captures all required monitoring and maintenance for each source. Based on interviews and site visits, the DEPs are well trained and conversant in requirements, and records are properly maintained and organized in the binders. A copy of each binder is also maintained in the White Rock Air Compliance Office for redundancy and to ensure compliance.

The Air Compliance Group tracks air pollutant emissions for the facility and prepares regular reports to NMED and EPA as required by the Title V Permit. The group has an excellent system for collecting, analyzing, and processing operational data from each emission source, and for completing calculations and producing the required reports. This system includes a chemical usage tracking methodology and database, a set of operations and emissions spreadsheets, and a clear network folder structure for organizing this material.

4.3 Ground Water

4.3.1 Observations

Eleven pre-decisional observations were noted during the on-site and subsequent desktop reviews of the ground water permit conditions. They were categorized as follows:

- ◆ DP-857: Observations 1, 4, 14, and 15
- ◆ DP-1835: Observation 22
- ◆ HWFP Ground Water Monitoring: Observations 16, 17, 18, 19, 20, and 21

Forms were completed for each observation named above and are included in Appendix B.2.

4.3.1.1 Ground Water Discharge Permit Renewal and Modification, LANL Domestic and Industrial Wastewater Facilities, DP-857

- ◆ **Observations 1 and 4: Condition 8, Signage:** Condition 8 of DP-857 requires signs to be posted and maintained at the entrances and outfalls to indicate that the wastewater is not potable. The signs are to be posted in English and Spanish. The Team did not observe signage at Outfall 13S or at the SMEBs during visits to these facilities. The LANL facility is gated; therefore, potential public access to these sites is limited. In addition, there has never been a discharge from Outfall 13S in the 25 years of operation of this facility. Signage was posted at Outfall 13S and the SMEBs in accordance with Condition 8 following the site visit. These observations are therefore closed.
- ◆ **Observation 14: Condition 31, Reporting:** Condition 31 of DP-857 requires semiannual reporting of the pH of the water within the SWWS (SERF wet well) and the discharge from Outfall 001. In 2017, the pH for the SWWS and Outfall 001 were not reported to NMED. The lack of pH reporting was an oversight and the sampling and analysis plan for DP-857 has been corrected to ensure that field measurements for pH will be taken and reported to NMED in the future. This observation is therefore closed.

- ◆ **Observation 15: Conditions 17, 31, 32, 33, 34, 35, and 36:** These conditions require LANL to use an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program (NELAP). It was unclear whether GEL Laboratory had such certification. After the site visit, the Team received clarifying documentation (LANL 2018b) that the laboratory is NELAP accredited. This observation is therefore closed.

4.3.1.2 Ground Water Discharge Permit, LANL Underground Injection Control Wells Discharge Permit, DP-1835

- ◆ **Observation 22: Condition 15, Potentiometric Surface Maps:** Condition 15 of DP-1835 requires LANL to develop quarterly potentiometric surface maps and to submit those maps to NMED as part of the quarterly monitoring reports. The permit stipulates that the maps illustrate the direction of ground water flow with arrows. These flow arrows were missing from all quarterly potentiometric surface maps reviewed. LANL was notified of the oversight and steps were taken to correct the maps. The corrected maps were resubmitted to NMED (LANL 2018c). This observation is therefore closed.

4.3.1.3 Ground Water Discharge Permit LANL, Septic Tank-Disposal Systems, DP-1589

- ◆ **Condition 27, General Terms and Conditions Section, Recordkeeping:** Condition 27 of DP-1589 stipulates that facility record drawings (plans and specifications) showing the actual construction of the septic tank disposal systems bearing the seal and signature of a licensed New Mexico professional engineer be kept on file. These records exist for the two newer septic tank disposal systems (TA-58-52 and TA-33-0375) but not for the older systems (TA-33-0179 and TA-39-0132). The two older systems were installed before the permit was issued and such records were not required at that time. Therefore, it was noted and was not considered an observation.

4.3.1.4 Hazardous Waste Facility Permit – Ground Water Monitoring Program

- ◆ **Observation 16: Section 11.10.2.7.i, Ground Water Levels:** The HWFP requires that all water levels be collected at the commencement of monitoring activities. Water level measurements are collected in accordance with the current Consent Order (NMED 2016b), which states that ground water levels will be measured within a 21-day sampling event rather than within the 14-day timeframe specified in the HWFP. Water levels are measured in ground water monitoring wells immediately before each purge and sampling event. For most ground water monitoring wells, water level measurements are obtained from installed pressure transducers that record water level data every 1 to 2 hours, which meet both the 14-day HWFP requirement and the 21-day Consent Order requirement by default. In wells not equipped with pressure transducers, or if the pressure transducer is not functioning properly, portable instrumentation is used to measure the water level (i.e., a manual measurement). These data are used in conjunction with water level data collected during the sampling events and from wells or well screens not sampled under the 2018 IFGMP (Table 1.8-1) (LANL 2017b). As an operational deficiency, the Review Team noted that the HWFP requirement has a shorter window than the Consent Order to make manual water

level measurements and the IFGMP and associated procedures follow the Consent Order. This observation identifies incongruent language between the HWFP and the Consent Order and requires evaluation by the permittee and the NMED. Changing the language in the permit or the Consent Order would require NMED action outside the permittee's authority. This operational observation remains open.

- ◆ **Observation 17: Sections 11.10.2.8.ii and 11.10.2.13, Collection and Management of Investigation-Derived Waste:** These HWFP sections require that all purged ground water and decontamination water be temporarily stored at SAAs, transfer stations, or less-than-90-day storage areas in labeled 55-gallon drums or other containers approved by the NMED until proper characterization and disposal can be arranged. On-site interviews and review of waste management SOPs in the IFGMP (LANL 2017b) indicate that purged ground water is not transferred to temporary SAAs, transfer stations, or 90-day storage areas. Instead, the purged ground water remains at the wellhead until waste can be characterized and is then managed in accordance with the LANL investigation-derived waste decision tree. Ultimately, the management of nonhazardous purge water complies with ENV-RCRA-QP-010.3, Land Application of Ground Water (LANL 2012) in accordance with NMED DP-1793. If the purge water is hazardous, it is managed in accordance with hazardous waste management requirements. NMED approved the LANL procedures for managing purged ground water on March 12, 2010. The procedure, however, contradicts the permit condition, Collection and Management of Investigation-Derived Waste. This observation identifies incongruent language between the HWFP and the Consent Order and requires evaluation by the permittee and the NMED. Changing the language in the permit or the Consent Order would require NMED action, outside of the permittee's authority. This operational observation remains open.
- ◆ **Observation 18: Section 11.10.2.8.iv, Ground Water and Surface Water Sample Types:** This HWFP requirement specifies that field blanks be obtained at a frequency of no less than one per day per site or unit. Per Appendix D of the 2018 IFGMP (LANL 2017b), field blanks are collected at a minimum frequency of 10% of all samples collected during a sampling campaign. This frequency is contrary to the HWFP requirement of one sample per day per site or unit. The Consent Order (NMED 2016b) stipulates that all QA/QC samples be collected in accordance with an approach presented in each annual IFGMP. For the second quarter of monitoring year 2018, it was confirmed in the IntellusNM database that only one field blank was collected for the Ancho Watershed campaign of 12 sample locations. This frequency was less than the 10% frequency specified in the IFGMP and therefore does not comply with the HWFP or the IFGMP stipulation. This observation identifies incongruent language between the HWFP and the Consent Order, and neither the HWFP or the Consent Order conditions were met. This observation requires evaluation by the permittee and the NMED. Changing the language in the permit or the Consent Order would require NMED action outside of the permittee's authority. This potential environmental regulatory violation remains open.

- ◆ **Observation 19: Section 11.12.4.12 (3), Figures:** This permit section requires that illustrative figures presenting the locations of piezometers, monitoring wells and other wells, ground water elevation data, and ground water flow directions be included in the periodic monitoring reports. None of the interim facility-wide ground water monitoring (IFGM) reports reviewed include a figure that denotes ground water flow direction related to a specific monitoring group or facility-wide. The reports do include a figure that shows well locations and hydrograph insets for selected wells and do show the water level history for a given well. However, this inclusion does not fully satisfy the permit requirement for flow direction. The Consent Order (NMED, 2016b) also indicates that ground water maps with flow directions should be included in the periodic monitoring reports (Consent Order Section IV(n)(3)). This regulatory observation remains open.
- ◆ **Observation 20: Section 11.12.4.12 (4), Figures:** This permit section requires figures presenting ground water analytical data for the current monitoring event. The analytical data corresponding to each sampling location may be presented as individual concentrations, or in table form on the figure, or as an isoconcentration map. The 2016 and 2017 Annual Periodic Monitoring Reports for the General Surveillance Monitoring Group (LANL 2016b; LANL 2017e) included ground water and surface water analytical results that exceeded applicable screening values but were not represented on maps. The Consent Order (NMED 2016b) also indicates that the periodic monitoring reports should include contaminant maps for the current event and that these maps should show analytical results for each contaminant exceeding screening levels at more than one location (Section IV(n)(4) of the Consent Order). LANL did not include the required maps in all reports, which is a potential environmental regulatory violation. This observation remains open.
- ◆ **Observation 21: 11.12.4.13.i, Field Methods and 11.12.4.13.ii, Analytical Program:** The HWFP requires that field methods and analytical programs be defined in appendices to periodic monitoring reports. Details of field methods and analytical programs were not provided in periodic monitoring reports. However, they were included in the 2018 IFGMP and other stand-alone SOPs as defined in the Consent Order.

Permit condition 11.12.4.13.i stipulates that field methods used to acquire field measurements of ground water elevations, vapor and water quality data, and vapor, surface water and ground water samples be provided. Methods and types of instruments used to take measurements should also be defined along with decontamination, well purging techniques, and methods of measuring and sampling well remediation systems. Copies of purge and decontamination water disposal documentation shall also be provided under this permit condition. The periodic monitoring reports did not include a field methods appendix for each of the elements defined in this condition.

Similarly, permit condition 11.12.4.13.ii requires that an analytical appendix for monitoring reports be provided and that it include the analytical methods, a summary of data quality objectives (DQOs), and data quality review procedures. The appendix should also include a summary of data quality exceptions and their effect on the acceptability of the analytical data

regarding the monitoring event and the site status, along with references to case narratives provided in the laboratory reports. The monitoring report appendices did not include specific narratives on the analytical program, analytical methods, DQOs, or data quality review procedures. However, the IFGMP contents of the analytical appendices appear to comply with the language of the Consent Order (NMED 2016b).

These observations identify incongruent language between the HWFP and the Consent Order and requires evaluation by the permittee and the NMED. Changing the language in the permit or the Consent Order would require NMED action, outside of the permittee's authority. The operational deficiencies identified for these two appendices remain open.

4.3.2 General Impressions

The Review Team noted excellent qualifications of personnel and years of experience at LANL. These technical resources provide benefits by presenting a consistent face with the regulators, having the ability to expedite problem resolution, and having a historic knowledge of decisions made. This expertise enables LANL to avoid potential rework and potential notices of violation when meeting regulatory requirements.

The availability of data through electronic databases allows the public access to records in a timely and transparent fashion. The use of the internet-based EPRR and IntellusNM database are outstanding tools for accessing plans, reports, correspondence, maps, water quality data, and other materials related to the regulation of LANL activities. Overall, the IFGMP is thorough, robust, effective, and well documented. The internal procedures in place to continually review the quality of and usability of monitoring well data is a proactive approach to ensure that the results are accurate and meaningful. Specific examples include the LANL procedures to review the effects of drilling methods on ground water and sample quality, evaluations of the best-suited types of multilevel monitoring well completions and sampling equipment, and the rehabilitation/recompletion of existing wells to improve their data quality result and eliminate questionable data or potential avenues of cross contamination.

LANL operators and managers have implemented asset management procedures and tracking tools that result in proactive decision making at LANL's three treatment units (SWWS, SMEB, and SERF). In addition, the use of LANL's SharePoint site allows for efficient and effective electronic tracking, processing of work orders, and triggering action items across user groups. The tracking of plan of the day, plan of the month, plan of the year, and mobile work practices (electronic, integrated work documentation) identify procedures, steps, and pre-job and post-job requirements for work orders. New procedures are reviewed, and changes to the design are tracked.

Collectively, LANL ground water personnel and the tools and systems implemented provide a means for effective communication across groups and with the public.

The subset of wells examined during the Review were in most cases installed and constructed per the specifications outlined in Section 11 of the HWFP and the Consent Order. Deviations in

construction and installation procedures were explained and approved by NMED in well construction work plans or subsequent completion reports. Specific sampling and reporting requirements were outlined in the annual IFGMP.

The drilling methodology, well construction, and material aspects of the LANL ground water monitoring program were found to comply with HWFP Section 11. Over the years, a contentious aspect of the drilling program was related to drilling fluids interfering with the restoration of natural ground water conditions in the monitoring well. LANL has conducted extensive evaluations (LANL 2007a; LANL 2007b) to assess the potential impact of drilling additives to the ground water analytical program and has eliminated, rehabilitated, or even replaced monitoring wells where drilling additives may have compromised the integrity of the analytical results. As the drilling program has matured, LANL has also adjusted by changing drilling methodologies that exclude or limit the amount and type of drilling additives required to achieve the necessary depths of the monitoring intervals. The current drilling methodology employs dual rotary methods that advance protective casings to minimize drilling additives, cross contamination, and sloughing materials into the annular space. Other evolutions of the monitoring program have included refinement of the methodology and sampling equipment used in multilevel screened wells. LANL has performed a thorough evaluation of multilevel well technologies and has settled on a two-screen system with dedicated sampling equipment. LANL has been systematically rehabilitating legacy wells with three or more screened intervals to reduce the number of screens or otherwise compromised zones with suspected cross contamination or drilling additive contamination.

4.4 Hazardous Waste

4.4.1 Observations

Eleven observations were noted during the Review. They were categorized as follows:

- ◆ Generator Labeling: Observations 2 and 3
- ◆ Permitted Area Labeling: Observations 5, 6, and 11
- ◆ Permitted Area Housekeeping: Observation 7
- ◆ Generator Storage: Observations 8 and 9
- ◆ Permitted Reporting Requirements: Observation 10
- ◆ Positive Observations: Observations 12 and 13

Forms were completed for each observation named above and are included in Appendix C.2.

4.4.1.1 General Labeling

Observations 2 and 3 are procedural observations and are identified as observed items that complied with all applicable regulations, but due to a deviation from the established procedure, could lead to noncompliance. To help manage the waste, most waste containers (specifically in areas that have multiple waste streams) have a label that lists their contents. The contents on the

label of the Observation 2 subject container were incorrect, and the Observation 3 subject container had multiple conflicting labels. Due to inaccurate or multiple labels, the two containers identified in these observations could be mischaracterized when manifested for treatment or disposal. After discussions with the generator staff, these observations were corrected in the field and the observation was therefore closed out.

4.4.1.2 Permitted Area Labeling

Observations 5 and 6 identified waste containers in TA-54 Shed 8 and Dome 153 that had multiple conflicting labels in not in compliance with Permit Condition 3.6(1); Observation 11 identified a waste container in TA-55 B40 that did not have the label facing the aisle, which did not comply with Permit Condition 3.8(2). These are labeling issues that should have been identified and fixed when the drums were initially placed in the permitted storage area or during follow-up inspections (NMED 2017g). When a waste container is moved to a permitted storage area, the container should be inspected to ensure that it does not have multiple labels and that the labeling does not conflict with the waste stream profile. Once stored, container labels should face outward to allow for inspection. These observations were corrected while in the field and are now closed.

4.4.1.3 Permitted Area Housekeeping

Observation 7 identified waste containers with liquids not properly labeled as “free liquids,” which does not comply with Permit Condition 3.6(2). This is a labeling issue; the Review Team determined the root cause to be poor housekeeping in the TA-54 Area L permitted storage area (NMED 2017g). The “free liquid” labels that were originally affixed to the containers had come off and were found on the ground in the storage area. In addition to the labeling issue, the Review Team noticed that the facility had other housekeeping and inspection issues, such as empty drums blown over and scattered in the area. All empty drums were properly labeled, but if the empty drums are not organized, their “empty” labels might become illegible due to weathering. In addition, a non-empty drum could be mishandled and exposed to the elements if it is mistaken for an empty drum. Without improved housekeeping in this area, there is an elevated potential for continued noncompliance issues associated with TA-54 Area L. This observation was immediately closed out while in the field by writing “free liquids” on all containers identified as missing the required label.

4.4.1.4 Generator Storage

Observation 8 identified a leaking container in violation of 40 CFR 264.171; Observation 9 identified an open and overflowing container in violation of 40 CFR 264.173(a). These are generator storage issues (40 CFR 264.170–179). Under regular use of an SAA, all wastes are expected to be properly containerized. If a container has been compromised or is nearing capacity, the generator is expected to notify the associated WMC to re-containerize the waste or provide additional containers to store it. These observations were closed out shortly after discovery, after the field visits to these areas.

4.4.1.5 Permitted Reporting Requirements

Observation 10 identifies a noncompliance with Permit Condition 2.4.7(4), which requires LANL to notify NMED within 3 days of receipt of the notice of the discrepancy of a waste manifest from a receiving facility. On at least three occasions in 2017, NMED was not notified when a receiving facility issued a waste discrepancy to LANL. The waste associated with these discrepancies was not returned to LANL and the discrepancies were only provided to the transportation contractor. The contracted transporter had not made LANL aware of the waste discrepancies; therefore, LANL did not report the waste discrepancy to NMED. LANL is revising its procedure with the contracted transporter and the receiving facility to ensure that they receive any future waste discrepancies to ensure future compliance. These discrepancies were discovered when providing a response to the NMED Hazardous Waste Bureau's (HWB's) Request for Information (NMED 2017h). This observation was formally closed out in LANL's response to the NMED Request for Information dated April 5, 2018, including procedural adjustments to ensure reporting requirements are met in the future (LANL 2018d).

4.4.1.6 Lines of Communication Positive Practice

Observation 12 identifies a proactive culture of communication among the Environmental Protection and Compliance Division (EPC), WMCs, and LANL's waste generator or storage area managers. Whether communicating up or down the chain of command, generator issues are shared equally, along with solutions, management practices, or management changes. Generators communicate directly with WMCs and do not feel threatened when sharing concerns. WMCs are responsive to requests and inquiries, and generators are also responsive to feedback. When a question arose during the Review, WMCs were often able to reach generators within seconds. WMCs work together to implement management practices or solutions and share lessons learned. They also provide support in the execution of procedural changes that impact generators throughout LANL to ensure the changes are made. WMCs are quick to elevate unresolved issues to the EPC when additional input is required.

4.4.1.7 Interim Status Unit Avian Monitoring Positive Practice

Observation 13 identified a positive practice: the Environmental Compliance and Protection Division has conducted annual avian monitoring at the three interim status units and at several LANL control sites since 2013. The results of these studies are published annually and are made available to the public through the EPRR. Although avifauna studies are not required environmental performance standards of Subpart X (40 CFR 264.600–603), LANL performs these studies to assess potential impacts of the interim status units' activities on avifauna. Results of the 2013–2016 avian monitoring reports suggest that LANL operations are not negatively affecting the bird populations at the three study sites in comparison to the control sites, and caution that continuing research using long-term datasets will be required to form a conclusion (Hathcock et al., 2017).

4.4.2 General Impressions

The Review Team recognized a well-developed hazardous waste compliance program. The WMCs and other personnel generating or otherwise handling hazardous waste are committed, coordinated, and highly competent. The Team noted excellent hazardous waste management processes and management systems, including the WCATS. The competent staff has tremendous process experience and acceptable knowledge to make a hazardous waste determination.

5 Suggestions

5.1 Air

Overall, the LANL Air Compliance Group does an excellent job complying with the Title V Permit and ensuring compliance with air regulations. Based on the detailed review of the LANL Title V Permit, the Review Team recommends that LANL negotiate several revisions to specific current permit language to correct errors, clarify requirements, or remove unnecessary conditions. Specific suggestions are presented in the following subsections.

5.1.1 Periodic Emission Tests for the Combustion Turbine

Permit condition A1307.H(1) states: “The test period shall be annually, based on calendar year.” However, LANL understands that less frequent testing is allowed due to the low percentage of time the turbine actually operates based on Section B108.D. For example, because the turbine operated for only 500 hours in 2016 (less than 10% of the monitoring period), no testing was required according to Section B108.D. The permit condition should be amended to clarify that reduced testing for the turbine is allowed under these circumstances.

5.1.2 Unnecessary Requirements for Asphalt Plant

Permit conditions A607.E and A607.F contain requirements that are either obsolete, nonapplicable, or more stringent than necessary for air pollution control from the asphalt plant. Condition A607.E, Recordkeeping, requires calculation of “a weekly rolling, 12-month total production rate.” Emissions are controlled by the annual 6,000 ton/year production limit for the plant; a monthly rolling average calculation would be equally effective for maintaining compliance, require less recordkeeping, and be better aligned with monthly rolling average calculations required for other sources at LANL.

Condition A607.F(3), Monitoring, states “all monitoring required under NSR [New Source Review] Permit GCP-3-2195G.” Several requirements of that general permit do not apply to LANL, such as monitoring the scrubber (the LANL asphalt plant has no scrubber). LANL should pursue the removal of nonapplicable requirements from the Title V Permit.

5.1.3 Internal Combustion

Permit condition A1107.A references Table 1102.B, which is not included in the permit. The table reference appears to be in error and should be deleted.

5.2 Ground Water

During the ground water review, several best practices were identified that may benefit LANL. These best practices and other suggestions are summarized below:

- ◆ **Purge well water handling best practice.** During the site visit to Well R-29, the Team noted that it would be prudent to install a clamp on the pipe into the purge water holding tank to provide an air

gap between the pipe and purge water. This air gap would avoid unintentional siphoning back into the well from the holding tank. This practice could be added to the ground water well sampling SOP.

- ◆ **Ground water well best practice.** Concrete pad installations surround each well casing. The status of each concrete pad could be checked during sampling events or routine monitoring. Any cracked concrete surface completions could be noted and replaced with new pads. Maintenance of the concrete would prevent surface water infiltration into a well boring.
- ◆ **Permit management best practice.** Overall, the LANL ground water compliance group does an outstanding job of complying with the ground water permit requirements. During the ground water review, several instances were noted in which agreements were made with NMED or clarifications were made to permit conditions (e.g., under DP 857, changes to analytical methods for nitrate-nitrogen to nitrate-nitrite-nitrogen and analyzing unfiltered samples for metals); however, these changes were not incorporated into the permit language for the record. Based on the Review, the Team suggests that LANL discuss revising permit language to correct or clarify actual practices and procedures (as approved via email and verbal agreements with NMED) for the record.
- ◆ **DP-1589 septic isolated status.** The Team recognizes that NMED establishes the permit conditions under DP-1589. LANL operations staff continually evaluate the option of modifying septic tanks to holding tanks as appropriate, which would reduce regulatory workloads and streamline management of septic tank systems at LANL. The septic tanks and systems service few people in remote areas. Collectively, they do not exceed 4,840 gallons per day. Because they are not contiguous but are isolated, they could be viewed as individual tanks/systems/leach fields and therefore not considered as one combined discharge with one volume. The Team suggests that the operations staff continue its efforts to coordinate with NMED to consider these changes to DP-1589.
- ◆ **HWFP and Consent Order Incongruencies.** The Team noted that the requirements of the HWFP and the Consent Order are not congruent in some instances. Where these disparities are noted, the monitoring program complies with the Consent Order rather than with the HWFP. In some cases, the exceptions relate to the quantity (e.g., days to complete water levels, frequency of QA/QC samples). Other exceptions involve the content of the periodic monitoring reports. In other cases, the required information (e.g., laboratory and data validation procedures, DQOs) are not documented in the periodic monitoring reports. These requirements have been documented in either the IFGMP or the appropriately referenced LANL SOPs. The other notable exception involves the management of purged ground water from monitoring wells. The HWFP states that these wastes should be transported to a storage location other than the wellhead, but that does not appear to be the current practice that has been approved by NMED (March 12, 2010). The Review Team suggests that instances of incongruent language between the HWFP and the Consent Order be evaluated by the permittee and the NMED. Changing the language in the permit or the Consent Order would require NMED action, outside of the permittee's authority.

5.3 Hazardous Waste

The Review Team considered potential management and handling procedural suggestions during this Review. In addition to physical observations, the Review Team also discussed potential issues faced by the Environmental Compliance Division, WMCs, and generators. To improve management procedures, the WMCs and generators had an open dialogue with the Review Team, which resulted in several minor improvements on site.

Although most issues associated with management of hazardous waste are clarified through the proactive lines of communication both within the LANL organization and between LANL and external regulatory agencies, two minor items were identified in discussions with WMCs. The following two generator requirements would benefit from clarification as discussed in the following subsections:

- ◆ **Direct shipment from satellite accumulation areas:** some WMCs have been directed not to pack for shipment directly from SAAs.
- ◆ **Significant increase of SAAs:** rigid definition of “at or near the point of generation” has caused a significant increase in the number of SAAs.

5.3.1 Direct Shipment from Satellite Accumulation Areas

During the onsite review of TA-48, the WMC noted that several new central accumulation areas (CAA) were established for the sole purpose of packing waste for shipment. Although the Review Team was not provided any official documentation, discussions with the TA-48 WMC indicated that previous internal and external reviews gave them guidance that direct shipment from SAAs was not permitted at TA-48.

After completing the review of TA-48, the Review Team discussed this specific issue with the EPC. Both the Review Team and EPC noted the newly revised federal requirements regarding SAAs, which became effective at the federal level on May 30, 2017, specifically allows direct shipments from SAAs in 40 CFR 262.15(a)(6)(ii)(C). The new revision reads as follows:

A generator who accumulates either acute hazardous waste listed in § 261.31 or § 261.33(e) of this chapter or non-acute hazardous waste in excess of the amounts listed in paragraph (a) of this section at or near any point of generation must... Remove the excess from the satellite accumulation area within three consecutive calendar days to... An off-site designated facility... (Satellite accumulation area regulations for small and large quantity generators, 40 CFR 262.15 [2017])

The NMED HWB has until July 2019 to incorporate these updates into its regulations or develop more stringent requirements. The guidance to package wastes for shipment only in CAAs, specifically at TA-48, creates unnecessary movement of hazardous waste and moves the process away from the waste generators who can provide necessary information on the waste generation activities when needed. The Review Team understands that there may be unrealized concerns with allowing for direct shipment of wastes from SAAs at LANL’s unique facilities, specifically at TA-48.

The Review Team suggests that LANL continue its internal discussions with the TA-48 WMC, as well as its external discussions with the NMED HWB to provide documented guidance related to this issue to the TA-48 WMC. This guidance document will provide future review teams, as well as the TA-48 WMC, with specific advantages of using CAAs for preparing shipments.

5.3.2 Significant Increase of Satellite Accumulation Areas

In completing the review of TA-35, the WMCs and EPC noted that several new SAAs were established based on NMED HWB guidance that each generator is required to have its own SAA. One laboratory with several similar activities had 60 SAAs established close to each other, several of which had been established solely based on this NMED guidance. The EPC has been in continued contact with the NMED HWB to clarify the SAA requirement and the NMED HWB provided a guidance document (NMED 2017c) on March 2, 2017, titled *Satellite Accumulation Area Policy* to clarify definitions for “at or near the point of generation” and “under the control of the operator.”

Discussions between the Review Team, the EPC, and the TA-35 WMC on the disadvantages of the smaller SAAs noted that it will take longer to accumulate a shippable amount of hazardous waste, leading to an increase in accumulation time; increase the potential volume of waste that can be stored at an SAA, since each SAA is allowed up to 55 gallons of accumulation; and significantly increase the time required to perform an in-depth inspection of each SAA. The Review Team alternatively notes that a centralized SAA allows access to waste containers by several generators, rather than only the specific generator of the container, which can increase the potential for mismanaging the waste container.

The EPA discusses and recommends centralized SAAs, specifically for generating activities producing similar waste streams in a memo titled Guidance on 40 CFR 264.173(a) and 265.173(a): Closed Containers dated December 3, 2009 (Dellinger 2009). This guidance reads as follows:

In cases where there are multiple points of generation within the same SAA, movement or consolidation within the SAA is permissible, as long as the waste remains “at or near” the point of generation and under the control of the operator of the process generating the waste (Dellinger 2009).

The document further expounds on this language, noting that waste can be generated at each work space, then transferred to the SAA at the end of each shift.

The EPC and the NMED HWB have maintained an open dialogue on this issue and the Review Team suggests that effective guidance will rely on continuing this communication. Due to the unique generating activities at the TA-35 laboratory as well as throughout LANL, effective management of hazardous waste will rely on this communication.

6 Conclusions

This Review Report documents the systematic, independent process of objectively reviewing environmental regulatory compliance and procedural LANL operations for areas for which NMED has regulatory responsibility. Three functional areas were considered in this Review: air, ground water, and hazardous waste. The Review addressed the Title V Air Permit; ground water discharge permits DP-857, DP-1589, DP 1793, and DP-1835; Water Quality Control Commission ground water protection regulations, HWFP, New Mexico HWA, and New Mexico Hazardous Waste Management Regulations.

The Review Team conducted the Review through a series of document and record reviews, interviews, and site visits. The Team developed checklists specific to the permit conditions and programs for line-by-line compliance review. The Team prepared observations of noncompliance and best practices resulting from the Review and communicated them to key LANL personnel.

During the Review, the Review Team issued 22 pre-decisional observations. These observations are summarized in Table 6-1. No observations were recorded during the Review of the Title V Permit. During the review of the Ground Water Discharge and Monitoring Programs, the Team issued 11 observations, which were identified as potential environmental regulatory violations or operational deficiencies. Four of the 11 observations were identified for the Ground Water Discharge Permit Renewal and Modification, LANL Domestic and Industrial Wastewater Facilities, DP-857; each of these four observations were closed. One observation was identified for the Ground Water Discharge Permit, LANL Underground Injection Control Wells Discharge Permit, DP-1835, which was closed. Six of the 11 observations remain open with respect to the Interim Facility-Wide Ground Water Monitoring under Section 11 of the HWFP. These pre-decisional observations related to operational deficiencies identified as incongruent language between the HWFP and the Consent Order, or potential environmental regulatory violations where HWFP or Consent Order conditions were not met. No observations were made for Ground Water Discharge Permit, LANL Groundwater Projects: DP-1793.

Hazardous waste observations consisted of a total of eleven observations: two procedural observations of improper labeling in a generator area (both were closed out immediately upon discovery), three observations of improper labeling in a permitted area (all closed out immediately upon discovery), one observation of improper housekeeping in a permitted area (which was subsequently closed), two observations of improper storage in a generator area (both of which were closed out shortly after the field visit of these areas) and one observation of not meeting permitted reporting requirements in fiscal years 2017 and 2018 (which was closed out subsequent to official communication with NMED). The Review Team also identified two positive practice observations:

- ◆ The proactive culture of communication among the EPC, WMCs, and LANL’s waste generators or storage area managers was noted as a positive practice. Communication is open and timely, and lessons learned are readily shared; issue resolution is streamlined.
- ◆ The EPC has been proactive in conducting annual avian monitoring at the three interim status units and at several LANL control sites since 2013. The results of these studies are published annually and are made available to the public through the EPRR.

Table 6-1: Status of Pre-Decisional Observations

Functional Subarea	Observations	Closed	Open
Air			
Title V	0	0	0
Ground Water			
DP-857	4	4	0
DP-1835	1	1	0
Ground Water Monitoring Program - Hazardous Waste Facility Permit	6	0	6
Hazardous Waste			
Generator Labeling	2	2	0
Permitted Area Labeling	3	3	0
Permitted Area Housekeeping	1	1	0
Generator Storage	2	2	0
Permitted Reporting Requirements	1	2	0
Positive Practices	2		NA
Total	22	14	6

Overall, the management of air quality, ground water, and hazardous waste at LANL is effective and the LANL personnel consistently work to improve their procedures and management techniques. LANL’s staff, procedures, training programs, and lines of communications were effective internally and externally with regulators and the public. The generators, process engineers, operators, WMCs, DEPs, and LANL representatives were candid in discussing the unique issues experienced by the facility, showing processes, and providing information during this Review.

During the Review, the Team made the following suggestions for improvement:

- ◆ Air Quality and Ground Water Programs. Several conditions of the Title V Permit and ground water permits appear to be in error, contain unnecessary conditions, conflict with the Consent Order, are not congruent with plans and processes, or have unclear requirements. The Review Team suggests that LANL review these permit conditions with NMED to ensure a mutual understanding of the requirements, and if possible, clarify the permit language upon permit renewal or sooner by documenting agreed-upon language or interpretation. Any agreements, clarifications, or changes to permit conditions should be coordinated with NMED and recorded in writing to ensure that each permit is congruent to mutually agreed-upon practices and procedures.
- ◆ Ground water best practices suggest installing a clamp on the pipe into the purge water holding tank to provide an air gap between the pipe and purge water would avoid unintentional siphoning back into the well from the holding tank. This practice could be added to the ground water well sampling SOP.
- ◆ Ground water well management. Concrete pad installations could be checked during sampling events or routine monitoring to advance maintenance of the concrete to prevent surface water infiltration into a well boring.
- ◆ Ground water permit DP-1589 could be amended to reduce regulatory workloads and streamline management of septic tank systems at LANL. The operations staff continually evaluates the option of modifying septic tanks to holding tanks. The Team suggests that the operations staff continue its efforts to coordinate with NMED to consider these changes to DP-1589.
- ◆ In addition to physical procedural suggestions made during site visits, the HW Review Team identified two generator requirements that would benefit from clarification among LANL personnel and regulatory agencies. The first concern addresses the direct shipment from SAAs. Some WMCs have been directed not to pack for shipment directly from SAAs. The Review Team suggests that LANL continue its internal discussions with the TA-48 WMC, as well as its external discussions with the NMED HWB to provide documented guidance related to direct shipment from SAAs.

The second concern addresses the significant increases in the number of SAAs because of the rigid interpretation of “at or near the point of generation.” The EPC and the NMED HWB have maintained an open dialogue on this issue and the Review Team suggests that effective guidance will rely on continuing this communication. Due to the unique generating activities at the TA-35 laboratory as well as throughout LANL, effective management of hazardous waste will rely on this communication.

The Review Team completed the independent Triennial Review and identified compliance deficiencies noted in the pre-decisional observations. The coordination and closure of these identified observations and implementation of the suggestions will enhance regulatory compliance at LANL.

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8 Codes and Standards

8.1 Code of Federal Regulations

40 CFR Protection of Environment

40 CFR Part 60 Standards of Performance for New Stationary Sources,
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40 CFR 60 Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional
Steam Generating Units (2014)

40 CFR 60 Subpart GG—Standards of Performance for Stationary Gas Turbines (2014)

40 CFR 60 Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal
Combustion Engines (2014)

40 CFR 61 National Emission Standards for Hazardous Air Pollutants,
Subpart C—National Emission Standard for Beryllium (2014)

40 CFR 61 Subpart H—National Emission Standards for Emissions of Radionuclides other than
Radon from Department of Energy Facilities (2014)

40 CFR 61 Subpart M—National Emission Standard for Asbestos (2014)

40 CFR 61 Subpart Q—National Emission standards for Radon Emissions from Department of Energy
Facilities (2014)

40 CFR 68 Chemical Accident Prevention Provisions (2014)

40 CFR 82 Protection of Stratospheric Ozone (2014)

40 CFR 98 Mandatory Greenhouse Gas Reporting (2014)

40 CFR 104 Public Hearings on Effluent Standards for Toxic Pollutants (2017)

40 CFR 105 Recognition Awards under the Clean Water Act (2017)

40 CFR 108 Employee Protection Hearings (2017)

40 CFR 109 Criteria for State, Local and Regional Oil Removal Contingency Plans (2017)

40 CFR 110 Discharge of Oil (2017)

40 CFR 112 Oil Pollution Prevention (2017)

40 CFR 113 Liability Limits for Small Onshore Storage Facilities (2017)

- 40 CFR 116 Designation of Hazardous Substances (2017)
- 40 CFR 117 Determination of Reportable Quantities for Hazardous Substances (2017)
- 40 CFR 121 State Certification of Activities Requiring a Federal License or Permit (2017)
- 40 CFR 122 EPA Administered Permit Programs: National Pollutant Discharge Elimination System (2017)
- 40 CFR 123 State Program Requirements (2017)
- 40 CFR 124 Procedures for Decisionmaking (2017)
- 40 CFR 125 Criteria and Standards for the National Pollutant Discharge Elimination System (2017)
- 40 CFR 127 NPDES Electronic Reporting (2017)
- 40 CFR 129 Toxic Pollutant Effluent Standards (2017)
- 40 CFR 130 Water Quality Planning and Management (2017)
- 40 CFR 131 Water Quality Standards (2017)
- 40 CFR 132 Water Quality Guidance for the Great Lakes System (2017)
- 40 CFR 133 Secondary Treatment Regulation (2017)
- 40 CFR 135 Prior Notice of Citizen Suits (2017)
- 40 CFR 136 Guidelines Establishing Test Procedures for the Analysis of Pollutants (2017)
- 40 CFR 260 Hazardous Waste Management System: General (2008)
- 40 CFR 261 Identification and Listing of Hazardous Waste (2008)
- 40 CFR 262 Standards Applicable to Generators of Hazardous Waste (2008)
 - 40 CFR 262.15 Satellite Accumulation Area Regulations for Small and Large Quantity Generators (2017; effective May 30, 2017).
 - 40 CFR 262.34 Accumulation Time (2008)
- 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste (2008)
- 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (2008)
- 40 CFR 264, Subpart F—Releases from Solid Waste Management Units (2008)
 - 40 CFR 264.98 Detection and Monitoring Program (2008)

- 40 CFR 264.99 Compliance Monitoring Program (2008)
- 40 CFR 264.100 Corrective Action Program (2008)
- 40 CFR 264 Subpart I—Use and Management of Containers (2008)
 - 40 CFR 264.170 Applicability (2008)
 - 40 CFR 264.171 Condition of Containers (2008)
 - 40 CFR 264.172 Compatibility of Waste with Containers (2008)
 - 40 CFR 264.173 Management of Containers (2008)
 - 40 CFR 264.174 Inspections (2008)
 - 40 CFR 264.175 Containment (2008)
 - 40 CFR 264.176 Special Requirements for Ignitable or Reactive Waste (2008)
 - 40 CFR 264.177 Special Requirements for Incompatible Wastes (2008)
 - 40 CFR 264.178 Closure (2008)
 - 40 CFR 264.179 Air Emission Standards (2008)
- 40 CFR 264 Subpart X—Miscellaneous Units (2008)
 - 40 CFR 264.600 Applicability (2008)
 - 40 CFR 264.601 Environmental Performance Standards (2008)
 - 40 CFR 264.602 Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action (2008)
 - 40 CFR 264.603 Post-Closure Care (2008)
- 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (2008)
- 40 CFR 265 Subpart I—Use and Management of Containers (2008)
 - 40 CFR 265.171 Condition of Containers (2008)
 - 40 CFR 265.173 Management of Containers (2008)
- 40 CFR 266 Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste (2008)

40 CFR 267 Standards for Owners and Operators of Hazardous Waste Facilities operating under a Standardized Permit (2008)

40 CFR 268 Land Disposal Restrictions (2008)

40 CFR 270 EPA Administered Permit Programs: The Hazardous Waste Permit Program (2008)

40 CFR 273 Standards for Universal Waste Management (2008)

40 CFR 279 Standards for the Management of Used Oil (2008)

40 CFR 280 Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (2008)

8.2 New Mexico Administrative Code

Title 20: Environmental Protection

NMAC 20.2 - Air Quality (Statewide) (2017)

NMAC 20.2.11 Asphalt Process Equipment (Air Quality) (2017)

NMAC 20.2.70 Operating Permits (Air Quality) (2017)

NMAC 20.4.1 Hazardous Waste Management (2009)

NMAC 20.4.1.1001 Adoption of 40 CFR 273, Modifications, Exceptions, and Omissions (2009)

NMAC 20.4.1.1003 Adoption of 40 CFR 279, Modifications, Exceptions, and Omissions (2009)

NMAC 20.6.2 Ground and Surface Water Protection (2017)

8.3 New Mexico Statutes Annotated

NMSA 1978, Chapter 74—Environmental Improvement

Article 2, Air Quality Control Act

Section 74-2-1 Short title.

Section 74-2-2 Definitions.

Section 74-2-3 Environmental improvement board.

Section 74-2-4 Local authority.

Section 74-2-5 Duties and powers; environmental improvement board; local board.

Section 74-2-5.1 Duties and powers of the department and the local agency.

Section 74-2-5.2 State air pollution control agency; specific duties and powers of the department.

Section 74-2-5.3 Duties and powers of environmental improvement board and local board for attainment and maintenance of national ambient air quality standards for ozone.

Section 74-2-6 Adoption of regulations; notice and hearings.

Section 74-2-7 Permits; permit appeals to the environmental improvement board or the local board; permit fees.

Section 74-2-7.1 Local governing body authority; construction permits; electric generation facilities.

Section 74-2-8 Variances.

Section 74-2-9 Judicial review; administrative actions.

Section 74-2-10 Emergency powers of the secretary and the director.

Section 74-2-11 Confidential information.

Section 74-2-11.1 Limitations on regulations.

Section 74-2-12 Enforcement; compliance orders; field citations.

Section 74-2-12.1 Civil penalty; representation of department or local authority; limitation of actions.

Section 74-2-13 Inspection.

Section 74-2-14 Criminal penalties.

Section 74-2-15 State air quality permit fund.

Section 74-2-15.1 Repealed.

Section 74-2-16 Municipal or county air quality permit fund.

Section 74-2-17 Continuing effect of existing laws, rules and regulations.

Article 4, Hazardous Waste Act

Section 74-4-1 Short title.

Section 74-4-2 Purpose.

Section 74-4-3 Definitions.

Section 74-4-4 Duties and powers of the board.

Section 74-4-5 Hazardous waste fund created; appropriation.

Section 74-4-6 Repealed 2017.

Section 74-4-7 Containment and cleanup of hazardous substance incidents; division powers.

Final

Section 74-4-8 Emergency fund.

Section 74-4-9 Existing hazardous waste facilities; interim status.

Section 74-4-10 Enforcement; compliance orders; civil penalties.

Section 74-4-11 Penalty; criminal.

Section 74-4-12 Penalty; civil.

Section 74-4-13 Imminent hazards; authority of director; penalties.

Section 74-4-14 Administrative actions; judicial review.

Article 6, Water Quality Act

Section 74-6-1 Short title.

Section 74-6-2 Definitions.

Section 74-6-3 Water quality control commission created (repeal effective July 1, 2020).

Section 74-6-4 Duties and power of commission (repeal effective July 1, 2020).

Section 74-6-5 Permits; certification; appeals to commission.

Section 74-6-6 Adoption of regulations and standards; notice and hearing.

Section 74-6-7 Administrative action; judicial review.

Section 74-6-8 Duties of constituent agencies.

Section 74-6-9 Powers of constituent agencies.

Section 74-6-10 Penalties enforcement; compliance orders; penalties; assurance of discontinuance.

Section 74-6-11 Emergency; powers of delegated constituent agencies; penalties.

Section 74-6-12 Limitations.

Section 74-6-13 Construction.

Section 74-6-14 Recompiled.

Section 74-6-15 Confidential information; penalties.

Section 74-6-16 Effect and enforcement of Water Quality Act during transition.

Section 74-6-17 Termination of agency life; delayed appeal.

Appendix A Air

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A.1 Compliance Checklist

The Review Team used the following checklist to assess compliance with the Los Alamos National Laboratory's (LANL) Title V Operating Permit.

Source Name			Source I.D. Number	
Los Alamos National Laboratory			856-PRT20130004	
Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
A101.A	Permit expires 5 years from the date of issuance. Renewal application is due 12 months prior to the date of expiration.	Y	Review permit.	Permit expires 2/27/20. Application not due until 2019.
A101.B	If a renewal permit is not issued prior to the expiration date, the permittee may continue to operate beyond the expiration date, provided that a renewal application was submitted on time.	NA		LANL is operating under a valid permit and is not in renewal cycle.
A102.A-C and Tables 102.A and 102.B	Facility Description - Information Only	NA		
A103	Facility: Applicable Regulations and Non-Applicable Regulations - Information Only	Y		
A104	Facility: Regulated Sources - Information Only	Y		
A105	Facility: Control Equipment - Information Only	Y		
A106.A	Facility: Allowable Emissions. Table 106.A: Facility: Allowable Emissions per Source Category	Y	Review semiannual and annual emission reports.	Emission reports for 2016 and H1 2017 show compliance with all limits

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A106.B	Facility-wide emissions for criteria pollutants, volatile organic compounds (VOC), and hazardous air pollutants (HAPs) from all emission units, combined, shall not exceed the limits in Table 106.B.	Y	Review semiannual and annual emission reports.	Emission reports for 2016 and H1 2017 show compliance with all limits
A106.C	Maintain records of the Facility-Wide annual emissions totals for each pollutant listed in Table 106.B. The record shall include estimated actual emissions from all sources on a semiannual and calendar year basis.	Y	Review semiannual reports.	Emission reports for 2016 and H1 2017 document emission records.
A107.A	Separate startup, shutdown, and scheduled maintenance (SSM) emission limits are not required for this facility. Maintain records in accordance with Condition B109.E.	Y	Information Only. See General Condition B109.E for SSM emissions recordkeeping.	
A108	Facility: Hours of Operation - Information Only	Y	Operational hours restrictions (if any) are in source category sections of the permit.	
A109.A	A Semi-Annual Report of monitoring activities is due within 45 days following the end of every 6-month reporting period. The six month reporting periods start on January 1st and July 1st of each year.	Y	Review semiannual monitoring report and date of submittal.	Semiannual monitoring reports for H1 and H2 2017 submitted and on time.
A109.B	(i) A Semi-Annual Report of actual emissions from all permitted sources is due within 90 days following the end of every 6-month reporting period as defined at Condition A109.A.	Y	Review semiannual emission report and date of submittal.	Semiannual emissions report for H2 2016 and H1 2017 submitted and on time.
	(ii) Emission estimates of NOx, CO, SO2, VOC, total suspended particulates (TSP), particulate matter (PM)10, and PM2.5 shall not include fugitive emissions.	Y	Information Only.	

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	(iii) Emission estimates of HAPs shall include fugitive emissions.	Y	Review emission report and confirm that fugitive HAP emissions included.	confirmed
	(iv) Emission estimates shall not include Insignificant or Trivial Activities, except that facility-wide emissions from all natural gas combustion sources shall be estimated.	Y	Review emission report and list of Insignificant activities.	Confirmed
	(v) The reports shall compare actual emissions during the reporting period with the facility-wide allowable emission limits at Table 106.B.	Y	Review emission report.	Emission reports for 2016 and H1 2017 show compliance with all limits
A109.C	The Annual Compliance Certification Report is due within 30 days of the end of every 12-month reporting period. The 12-month reporting period starts on January 1st of each year.	Y	Review annual compliance certification and date of submittal.	2017 Compliance certification submitted on 1/18/18.
A109.D	Post start-up notifications required by 20.2.72.212(B) NMAC and 40 CFR Parts 60, 61 or 63, to the permittee's Electronic Public Reading Room at http://epr.lanl.gov/oppie/service .	Y	Review notices posted to the Reading Room.	There were no equipment startups in 2017 requiring such notification.
A110	Facility: Fuel Sulfur Requirements - Information only.	NA		
A111	Facility: 20.2.61 NMAC Opacity - Information only	NA		
A112	Alternative Operating Scenario - Not required	NA		
A113	Other Provisions - Not Required.	NA		
A114	Reducing Facility Emissions - Not required	NA		

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A115.A	Comply with the requirements of 40 CFR 61, Subpart H – NESHAP for Radionuclides other than Radon from DOE Facilities.	--		Part 61 NESHAP compliance not in scope of this review.
A115.B	Comply with the requirements of 40 CFR 61, Subpart Q – NESHAP for Radon Emissions from DOE Facilities.	--		Part 61 NESHAP compliance not in scope of this review.
A116	Comply with the requirements of 40 CFR 61, Subpart M - NESHAP for Asbestos.	--		Part 61 NESHAP compliance not in scope of this review.
A117.A	Comply with the standards for servicing of motor vehicle air conditioners pursuant to 40 CFR 82, Subpart B.	--		Part 82 Ozone Depleting Substances compliance not in scope of this review.
B	comply with the standards for servicing and maintaining and disposing equipment containing refrigerants pursuant to 40 CFR, Subpart F.	--		Part 82 Ozone Depleting Substances compliance not in scope of this review.
C	Comply with the standards for servicing and maintaining equipment that contains halons pursuant to 40 CFR 82, Subpart H.	--		" "
D	comply with the standards on the ban on refrigeration and air-conditioning appliances containing HCFCs pursuant to 40 CFR 82, Subpart I.	--		" "
A200 - A500	EQUIPMENT SPECIFIC REQUIREMENTS - Not Required	NA		
A600	Regulated Sources – Asphalt Production. Table 600.A lists all of the process equipment authorized for this source category. Information Only.	Y		
A601	Control Equipment – Asphalt Production. Table 601.A lists all of the pollution control equipment required for the applicable regulated equipment in this source category. Information only.	Y		

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A602	Emission Limits – Asphalt Production. Table 602.A lists the emission units, and their allowable emission limits. Information only.	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
A603	Comply with all applicable sections of the requirements listed in Table 603.A:			
	NSR Permit GCP-3-2195G	Y	See below	
	20.2.11 NMAC Asphalt Process Equipment	Y	Production limited to 6,000 pounds/hour	PM emission limit only for production > 10,000 pounds/hour
	40 CFR 60, Subpart A	Y	Only for modification or reconstruction	no recent changes
	40 CFR 60, Subpart I	Y	Only for modification or reconstruction	no recent changes
A604.A Operational Limitations	Meet the requirements of Air New Source Review (NSR) permit no. GCP-3-2195G, including the requirements in this permit.	Y	See listing below under Permit GCP-3-2195G	
A604.B Operational Limitations	The equipment in this source category is authorized to operate during daylight hours between one-half hour after sunrise through one-half hour before sunset each day of the year. Annual operation limited to 4,380 hr/yr. This limitation on operating hours does not apply to the hot oil heater or the loading and/or hauling of asphalt products or materials.	Y	Review of operating logs.	Daily operating log shows operation only during daytime hours and hours per month of operation. Total annual hours on emissions calculations.
	Monitoring, recordkeeping, and reporting for operational hours shall be conducted according to NSR Permit GCP-3-2195G.	Y	Review of logs and reports.	
A605.A Fuel Requirements	Combustion sources - combust only fuels allowed under condition III.A.3 of NSR permit GCP-3-2195g.	Y	Inspection of site and operator interview	Natural gas is only fuel combusted for asphalt plant.
	Meet the recordkeeping requirements of GCP-3 and maintain records in accordance with Section B109.	Y	Review of records	records are maintained

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	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A606	20.2.61 NMAC Opacity – Asphalt Production – Not Required	NA		
A607.A Asphalt Production – Other	Asphalt Plant Baghouse – Differential Pressure. The baghouse shall be equipped with a device to continually measure the pressure drop across the baghouse.	Y	Visual inspection.	Pressure gauge on dust collector noted by visual inspection.
	Monitor the differential pressure (inches of water) across the filters with a differential pressure gauge. Pressure gauge readings and the time period the rotary dryer drum operates shall be recorded by a datalogger each time the rotary dryer drum is operating. The pressure data shall confirm whether the filter(s) are operating within the unit's specifications.	Y	Review of logs.	Strip chart noted in control room.
	Manually record the baghouse pressure drop readings at least once each day the rotary drum dryer operates and maintain records of all baghouse differential pressure readings in accordance with Section B109.	Y	Review of logs.	Pressure drop recorded at start and end of each batch on operating log.
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A607.B Asphalt Production – Other	Asphalt Plant Baghouse - Stack Height. The rotary dryer/baghouse exhaust stack shall be no less than 10 meters in height.	Y	Confirm by visual inspection or drawings.	Stack is 33 feet (10.06 m) tall, according to reports and table of stack conditions.
	Maintain records in accordance with Section B109.	Y	Review of records	records are maintained
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
C.	Asphalt Plant Baghouse – Opacity			
	Visible emissions from the rotary dryer/baghouse exhaust stack: opacity \leq 20% averaged over a (6) minute period.	Y	Review of recent visible emissions (VE) tests.	All opacity readings = 0% in 2017 from review of reports.
	Monitoring: Perform six (6) minute opacity readings on the rotary dryer/baghouse stack, at least once per month during any month the drum dryer operates. The observations shall be conducted according to 40 CFR 60, Appendix A, Method 9.	Y	Review of recent VE tests.	Opacity readings taken whenever asphalt plant is operated.
	Maintain records of all opacity observations and in accordance with Section B109.	Y	Review of records of recent VE tests.	Opacity readings taken whenever asphalt plant is operated.
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of reports.	Opacity readings are reported when required.
D.	Asphalt Plant Baghouse – Fines Cleanout. Sequester or remove particulates collected by the control equipment to prevent wind-blown particulate emissions. Recycled baghouse fines shall be recycled into the drum mixer via a closed-loop system.	Y	Review written procedures and interview operator.	Visual inspection: Conveyors are covered, including conveyor that returns baghouse fines to drum.
	Maintain records in accordance with Section B109.	Y	Review of records	records are maintained
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
E.	Asphalt Plant Production Rate. Asphalt production \leq 6,000 tons per year.	Y	Review of production records.	
	Monitor the total daily production rate.	Y	Review of daily production log.	Noted on monthly operating log.

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	Calculate weekly rolling, 12-month total production rate and maintain records in accordance with Section B109.	Y	Review records.	Weekly rolling 12-month production is calculated.
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
F.	Asphalt Plant Operations – General.			
	1) Install, operate, and maintain equipment in accordance with standard operating procedures,	Y	Review SOP	Reviewed Asphalt Plant Maintenance Operation Instruction dated 1/12/16.
	2) equip and operate the asphalt processing equipment such as screens, conveyor belts, and conveyor transfer points with dust control systems to control particulate matter emissions,	Y	Review controls.	Conveyors are covered, collected dust is recycled to drum, and cyclone and baghouse are in place.
	3) operate the Plant in accordance with NSR Permit GCP-3-2195G, Section III, A, B, C, D, E, F, and H.		See listing below under Permit GCP-3-2195G	
	4) Ensure that no visible emissions from the facility are observed crossing the perimeter of the restricted area for no more than 5 minutes during any 2 consecutive hours during facility operations.	Y	Review of recent VE tests.	Documented in stack opacity readings and Method 22 fugitive dust readings during each production run.
	Perform all monitoring required under NSR Permit GCP-3-2195G.		See listing below under Permit GCP-3-2195G	
	Maintain records of all standard operating procedures, records of all maintenance and/or replacement of dust control systems, and all records required under NSR Permit GCP-3-2195G, Section IV.B.	Y	Review records.	Records are maintained.
	including records of: actual hours of operation	Y	Review records.	On daily operating log.

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	all required monitoring, daily and weekly total asphalt production and the weekly rolling 12 month total production	Y	Review production records.	All values are recorded or calculated.
	number of haul truck trips daily including materials delivery and product,	Y	Review records.	On daily operating log.
	frequency of haul road sweeping	Y	Review records.	On daily operating log.
	copies of the applicant's proposed maintenance requirements and records demonstrating conformance with said requirements.	Y	Review records.	Reviewed Asphalt Plant Maintenance Operation Instruction dated 1/12/16.
	Maintain records of all compliance test results for total suspended particulates (TSP), particulate matter (PM10), nitrogen oxides, carbon monoxide, and records of all opacity/visible emissions observations performed.	Y	Review of test reports	Last test in 2009. Report gives results for NOx, CO, PM and opacity.
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of reports.	Reporting documented in semiannual monitoring report.
G.	Asphalt Plant Fugitive Dust. Fugitive dust emissions from asphalt processing equipment, including the system used to recycle fabric filter fines, shall exhibit no more than 5 minutes of visible emissions during any 2 consecutive hours.	Y	Equipment inspection and discussion with staff	Conveyors are covered, collected dust is recycled to drum, and Method 22 readings done for each production batch.
	The above condition does not apply to fugitive dust emissions from other support operations such as storage piles, front end loaders, or materials handling around the asphalt process equipment.	Y	Nothing required by this condition.	
	Perform a Method 22 test at least once per month on all screens, conveyor drop points, and hoppers during the months the asphalt plant operates. The duration of the test shall be a minimum of ten (10) minutes.	Y	Review visible emissions (VE) monitoring records.	Method 22 performed for each asphalt batch.

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	If visible emissions are observed for more than two (2) minutes, the Method 22 test shall continue for two (2) hours or until scheduled operation of the plant ends.	Y	Review of visible emission reports	No visible emissions observed.
	Maintain records of all equipment standard operating procedures, records of all maintenance and/or replacement of dust control systems, results of all visible emissions observations, and all records required under NSR Permit GCP-3-2195G.	Y	Review records.	Records are maintained in air compliance department.
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of reports.	Reporting documented in semiannual monitoring report.
Permit GCP-3-2195G-R1 IV.A	Monitoring			
IV.A.1	Perform a 6-minute opacity reading on each screen, conveyor drop point and hopper at least once per month using Method 9.	Y	Method 9 is appropriate for stacks; LANL conducts Method 22 readings for these potential emission points.	Accept Method 22 for this requirement.
IV.A.2	Monitor the differential pressure (inches of water) across the Filter(s) by the use of a differential pressure gauge. Pressure gage readings and the current operational status of heater drum(s) and silo loading shall be recorded by a continuous emission monitoring system (CEMS) or datalogger each time the heater drum is operating or a silo is being filled.	Y	Differential pressure for the baghouse is read and recorded on chart whenever the asphalt plant is operating, and also indicates operational status of the heater drum and silo (or feed hopper).	Accept continuous ΔP recording as indicative of all requirements.

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
IV.A.3	Continuously monitor the differential pressure across the scrubber, the water inlet flow rate (gallons per minute) and the water inlet pressure (pounds per square inch, psi).	NA	There is no scrubber on the asphalt plant.	
Permit GCP-3-2195G-R1 IV.B	Recordkeeping			
IV.B.1	Compliance with recordkeeping requirements shall be based on Department inspections of records and logs.	Y	nothing required by this condition. Instructions for NMED.	
IV.B.2	retain records for at least two (2) years after collection.	Y	Confirm record retention.	Records maintained at least this long.
IV.B.3	collect and retain the following records:			
	a. Actual hours of operation (e.g., beginning and end of daily operation) for each day of the operation;	Y		
	b. Monitoring required under Subsection IV.A - Monitoring;			
	c. Daily and weekly total asphalt production and the weekly rolling 12-month total production	Y		
	d. Number of haul truck trips per day including materials delivery and product;	Y		
	e. Fuel delivery manifest that states the fuel type as gasoline, natural gas, LPG (propane), or the manifest states the sulfur content by weight % of used oil and number of gallons purchased.	NA	Natural gas delivered by pipeline is only fuel used at asphalt plant.	
	In addition, for Used Oil:			
	(1) Analysis or certification from the transporter. demonstrating that each shipment of Used Oil meets the fuel specification of 40.CFR.279.11, or	NA	Used oil not used as fuel.	
	(2) An annual certification from each supplier, indicating that all shipments of Used Oil will meet the fuel specification of 40.CFR.279.11.	NA	Used oil not used as fuel.	

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	f. The quantity and frequency of water or surfactant applied to haul roads	NA	Not done at LANL asphalt plant.	
	g. The frequency of haul road sweeping (if paved);	Y	Review logbook	Log shows sweeping activity.
	h. Other haul road control measures (if used);	NA	no other measures used.	
	i. Copies of the manufacturer's (or applicant's proposed) maintenance requirements and records demonstrating conformance with said requirements;	Y	Review records.	Reviewed Asphalt Plant Maintenance Operation Instruction dated 1/12/16.
	j. For a scrubber, records of water flow and water pressure through the scrubber and pressure drop across the scrubber twice each day, once in the morning and once in the afternoon: the date and time of the measurement and the name of the person making the measurement shall be included in the record;	NA		No scrubber associated with the Asphalt Plant.
	k. Weekly available horsepower at the site and the maximum available horsepower of equipment listed in subparagraph II.C.5.f at any time during the previous 52 weeks (<i>equipment list from permit application</i>).	NA		
Permit GCP-3-2195G-R1 IV.C	Department Notification			
	This section has notification req'ts for shutdown, relocation, modification and excess emissions.	Y	Review records.	No such notifications required in 2017.
	<i>Review if any incidents during review year.</i>			
A700	<i>Regulated Sources – Beryllium Activities. Table 700.A: Regulated Sources List - Information Only</i>	Y		
A701	<i>Control Equipment – Beryllium Activities. Table 701.A: Control Equipment List - Information Only.</i>	Y		

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A702	<i>Emission Limits – Beryllium Activities. Table 702.A: Allowable Emissions - Information Only.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
A703	<i>Comply with all applicable sections of the requirements listed in Table 703.A.</i>			
	<i>NSR Permits 632; 634-M2; 1081-M1, 1081M1-R1, 1081-M1-R3, 1081-M1-R5, and 1081-M1-R6</i>	Y	as shown below	Requirements in this permit.
	<i>40 CFR 61, Subpart C</i>	Y	Source emission limits in Table 702.A at least as stringent as 40 CFR 61 Subpart C.	
A704	<i>The equipment/operations in this source category are authorized to operate any time during the year. No monitoring, recordkeeping, or reporting requirements are required to demonstrate compliance with its hours of operation.</i>	Y	Nothing required by this condition.	
A705-A706	<i>Not Required</i>	NA		
A707.A	<i>Operational Requirements – Beryllium Activities</i>			
Sigma Facility (TA-3-66)	<i>Operating Requirements. Beryllium operations will consist of registered metallographic operations, electroplating /chemical milling, and relocated machining, and arc melting/casting sources.</i>	Y	Confirm by inquiry that all operations are within these definitions.	Operations confirmed during site inspection on 3/7/18
	<i>Control Equipment Requirements. Metallographic operations and electroplating /chemical milling operations shall be conducted in aqueous solution or lubricant bath.</i>	Y	Confirm by inquiry or review of process documents.	Confirmed during site inspection on 3/7/18
	<i>Emissions from machining and arc melting/casting operations shall be exhausted through a HEPA filtration system prior to entering the atmosphere.</i>	Y	Review of drawings or inspection.	HEPA control of machining confirmed during site inspection on 3/7/18

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
Beryllium Technology Facility (BTF; TA-3-141)	<i>Operating Requirements. The continuous emission monitor will be maintained in accordance with the Laboratory's quality program.</i>	Y	Review maintenance on the CEM.	This is not a conventional "CEM". This is a long-term filter sample that gets changed out about once a week. LANL follows Quality Assurance Performance Plan (QAPP) for this monitoring.
	<i>Process Limit. Beryllium processed by the facility $\leq 10,000$ pounds/calendar year, and ≤ 1000 pounds/day.</i>	Y	Review of production records.	Records maintained at BTF, reviewed by air quality dept every 6 mos. Production much lower than limit.
	<i>Control Equipment Requirements. All processes shall be exhausted through a HEPA filtration system prior to entering the atmosphere.</i>	Y	Review of drawings or inspection.	Confirmed during site inspection on 3/7/18
	<i>Powder operations, other than closed glovebox operations, and machining operations, other than the processes used in metallographic preparation shall be exhausted through a cartridge filtration system then through the HEPA filtration system.</i>	Y	Review of drawings or inspection.	Confirmed during site inspection on 3/7/18
	<i>Metallographic preparation activities shall be conducted in lubricating baths or equivalent.</i>	Y	Review of drawings or inspection.	Confirmed during site inspection on 3/7/18
Target Fabrication Facility (TA-35-213)	<i>Operating Requirements. Beryllium operations will consist of only beryllium machining and associated cleanup activities.</i>	Y	Confirm by inquiry or review of process documents.	Confirmed during site inspection on 3/7/18
	<i>Control Equipment Requirements. All processes shall be exhausted through a HEPA filtration system prior to entering the atmosphere.</i>	Y	Review of drawings or inspection.	Confirmed during site inspection on 3/7/18
Plutonium Facility (TA-55-PF4)	<i>Operating Requirements. Regulated beryllium activities will be ducted through the pollution control equipment and out the north or south stack of PF-4.</i>	Y	Review of drawings or inspection.	Confirmed by LANL air quality staff and PF4 engineers.
	<i>The electric furnace shall be enclosed in a glove box, have a maximum operating temperature of 1600°C, and an inside volume space < 1.1 cubic feet.</i>	Y	Review of drawings or inspection.	Furnace has not been installed.

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	<i>Process Limit. 44 pounds. of beryllium (20 kilograms) in any 24 hour period; 1100 pounds/year (500 kilograms/year) as a rolling total.</i>	Y	Review of production records.	Records maintained at TA-55 in classified logbook, reviewed by air quality dept every 6 mos. Production much lower than limit.
	<i>Control Equipment Requirements. Weld cutting, weld dressing, metallography, and electric furnace operations shall be controlled with 4 HEPA filters with a control efficiency of 99.95% each.</i>	Y	Review of drawings or inspection.	All processes conducted in glove boxes with dedicated HEPA filter and 3 building service HEPA filters.
	<i>The non-accessible filters shall be replaced when the pressure drop across the filter either falls to levels indicating filter breakthrough or increases to levels indicative of excessive loading.</i>	Y	Review of monitoring and maintenance records.	Reviewed daily ΔP logs, annual challenge tests and maintenance records.
A707.B	<i>Emissions Monitoring Requirements</i>			
Sigma Facility (TA-3-66).	<i>Maintain a log which shows the number of metallographic specimens used in the metallographic operation and the weight or volume of Be samples processed in the electroplating/chemical milling, machining, and arc melting/casting operations.</i>	Y	Review of log.	Logs maintained and provided to air quality dept semiannually.
Beryllium Technology Facility (TA-3-141)	<i>Equip facility exhaust stack with a continuous emission monitor to measure beryllium emissions.</i>	Y	Review of drawings and monitoring records.	Sampling system confirmed during site inspection on 3/7/18
	<i>Equip cartridge and HEPA filters with differential pressure gauges to measure the differential pressure across the cartridge and HEPA filters while the exhaust fans are in operation.</i>	Y	Review of drawings and monitoring records.	Pressure monitoring confirmed during site inspection on 3/7/18
Target Fabrication Facility (TA-35-213)	<i>Retain records of the stack emission test results and other data needed to determine total emissions and make available for inspection by the Department.</i>	Y	Review records.	Stack test report on file with LANL air quality dept.
Plutonium Facility (TA-55-PF4)	<i>Equip the HEPA filtration systems with a differential pressure gauge that measures the differential pressure (inches of water) across the HEPA filters while the exhaust fans are in operation.</i>	Y	Review of drawings and monitoring records.	Confirmed by LANL air quality staff and PF4 engineers.

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>Verify control efficiency by daily HEPA filter pressure drop tests and annual HEPA filter challenge tests of accessible filters.</i>	Y	Review of monitoring records.	Daily Δ P recorded in logbook. Annual HEPA filter test report.
	<i>Continuously monitor the furnace temperature, and the flow rate from the glove box containing the furnace shall be measured once during each metal melt operation.</i>	Y	Review of monitoring records.	Furnace has not been installed.
	<i>Measure the flow rate from the glove box containing the furnace once during each metal melt operation.</i>	Y	Review of monitoring records.	Furnace has not been installed.
A707.C	<i>Recordkeeping Requirements</i>			
Sigma Facility (TA-3-66).	<i>See Condition A707.B.</i>	Y	see A707.B	
Beryllium Technology Facility (BTF; TA-3-141)	<i>Generate and maintain beryllium inventory records to demonstrate compliance with the 10,000 pounds of beryllium per calendar year and the 1000 pounds of beryllium per day processing limit.</i>	Y	Review of records.	Records maintained at BTF, reviewed by air quality dept every 6 mos. Production much lower than limit.
	<i>Record pressure drop across the cartridge and HEPA filters once per day that the exhaust fans are in operation and the facility is occupied.</i>	Y	" "	Daily pressure drop records reviewed.
	<i>Record control equipment maintenance and repair activities.</i>	Y	" "	
Target Fabrication Facility (TA-35-213)	<i>See Condition A707.B.</i>		see A707.B	
Plutonium Facility (TA-55-PF4)	<i>Stack emission test results</i>	Y	Review of records.	Copy of test report dated Oct 2002 kept in permit binder.
	<i>Facility operating parameters including a daily record of the pressure drop measured across each appropriate HEPA plenum filtration stage, when the exhaust fans are operating.</i>	Y	" "	Daily Δ P recorded in logbook.
	<i>Keep a copy of the annual HEPA test, a log of the daily pressure drop readings and a control equipment maintenance log.</i>	Y	" "	Daily Δ P recorded in logbook. Annual HEPA filter test report and HEPA filter maintenance log maintained.
	<i>Provide upon request.</i>	Y	" "	Provided in semiannual monitoring report

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	<i>Keep a log of the filter replacement make available to the Department personnel upon request.</i>	Y	" "	HEPA filter maintenance log maintained.
	<i>Keep records of the number and weight of classified parts processed during a 24-hour period and year using a rolling total.</i>	Y	" "	Weight of parts recorded at TA-55; air quality dept reviews semiannually.
	<i>Make available to properly cleared Department personnel upon request.</i>	Y	" "	done upon request
	<i>For each use of the furnace, record the following operating parameters: metal type, theoretical melting point of the metal, metal melt duration once melting is commenced, maximum furnace temperature and glove box flow rate.</i>	Y	" "	Furnace has not been installed.
	<i>Maintain a record of the furnace's internal volume.</i>	Y	" "	Furnace has not been installed.
A707.D	<i>Reporting Requirements</i>			
Sigma Facility (TA-3-66)	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
Beryllium Technology Facility (TA-3-141)	<i>Anticipated date of initial startup of each new or modified source not less than 30 days prior to the date.</i>	Y	Review of records.	No recent new or modified sources.
	<i>Actual date of initial startup of each new or modified source within 15 days after the startup date.</i>	Y	" "	No recent new or modified sources.
	<i>Provide the date when each new or modified emission source reaches the maximum production rate at which it will operate within 15 days after that date.</i>	Y	" "	No recent new or modified sources.
	<i>Notify the Department within 60 days after each calendar quarter of the facility's compliance status with the permitted emission rate from the continuous monitoring system.</i>	Y	" "	Reviewed quarterly reports; submitted on time.

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>Provide any data generated by activities described in the QAPP that will assist the Air Quality Bureau's Enforcement Section in determining the reliability of the methodology used for demonstrating compliance with the permitted emission rate within 45 days of such a request.</i>	Y	" "	No such requests in 2017.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
Target Fabrication Facility (TA-35-213)	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
Plutonium Facility (TA-55-PF4)	<i>Make stack emission test results and facility operating parameters available to Department personnel upon request.</i>	Y	Review of records.	LANL air quality dept provides info to NMED on request, and in semiannual reports.
	<i>Reports may be required to be submitted to the Department if inspections of the source indicate noncompliance with this permit or as a means of determining compliance.</i>	Y	" "	No claims or noncompliance or requests for info in 2017.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
A800	<i>Regulated Sources – External Combustion. Table 800.A lists all of the process equipment authorized for this source category. Information Only.</i>	Y		
A801	<i>Table 801.A: Pollution Control Equipment List. Information Only.</i>	Y		
A802	<i>Table 802.A: Allowable Emissions.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
A802B	<i>Table 802.B lists specific emission units and their allowable emission limits.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.

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A802C	<i>Units RLUOB-BHW-1 through -4 shall not emit NOx in excess of 30 ppmv, corrected to 3% oxygen on a dry basis. This emissions limitation applies to natural gas fuel only.</i>	Y	Installation of boilers with low-NOx burners and initial performance test.	Test results show NOx < 30 ppm (uncorrected for O2). Permit at time of test did not specify 3% oxygen dry basis.
A803	<i>Applicable Requirements. Table 803.A</i>			
	<i>NSR Permit 2195N-R2 for RLUOB-BHW-1 through -4</i>	Y	see below	requirements in this permit
	<i>20.2.61 NMAC Smoke and Visible Emissions - all sources.</i>	Y	see below	requirements in this permit
	<i>40 CFR 60, Subpart Dc - TA-55-6-BHW-1, TA-55-6-BHW-2, RLUOB-BHW-1 through -4</i>	Y	see below	requirements in this permit
A804	<i>Operational Limitations</i>			
A804.A	<i>All external combustion equipment except Units RLUOB-BHW-1 through -4 when operating with fuel oil is authorized to operate any time during the year. No monitoring, recordkeeping, or reporting requirements are required to demonstrate compliance with its hours of operation.</i>	Y	Nothing required.	
A804.B	<i>Units RLUOB-BHW-1 through -4 shall be operated on fuel oil ≤ 48 hours per year per boiler for non-emergency maintenance and readiness testing.</i>	Y	Review records.	No fuel oil use since 2013.
A804.C	<i>Total annual fuel oil consumption for Units RLUOB-BHW-1 through -4 ≤ 289,100 gallons on a rolling 365-day total basis.</i>	Y	Review records.	No fuel oil use since 2013.
A805	<i>Fuel Sulfur Requirements</i>			
A805.A All Boilers and Heaters (except Units RLUOB-BHW-1 through -4)	<i>Combust only natural gas containing no more than 2 grains of total sulfur per 100 dry standard cubic feet.</i>	Y	Review of natural gas contract	Contract < 3/4 grain S per 100 cubic ft.

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	<i>Recordkeeping: demonstrate compliance with the natural gas limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, or fuel gas analysis, specifying the allowable limit or less.</i>	Y	Review certificate.	Gas contract from 2010 still in effect.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
A805.B Units RLUOB-BHW-1 through -4	<i>Combust either natural gas containing ≤ 2.0 grains of total sulfur per 100 dry standard cubic feet or No. 2 fuel oil containing ≤ 0.5 weight % total sulfur.</i>	Y	Review of natural gas contract	Gas contract < 3/4 grain S per 100 cubic ft. No fuel oil used since 2013.
	<i>Recordkeeping: demonstrate compliance with the natural gas limit and/or fuel oil limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous or liquid fuel, or fuel analysis, specifying the allowable limit or less.</i>	Y	Review certificate.	Gas contract from 2010 still in effect and maintained in RLUOB air quality binder.
	<i>Or, keep a receipt or invoice from a commercial fuel supplier with each fuel delivery, which shall include the delivery date, the fuel type delivered, and amount of fuel delivered, and the maximum sulfur content of the fuel.</i>	NA	" "	
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
A806.A All Boilers and Heaters (except Units RLUOB-BHW-1 through -4)	<i>Opacity: Exhaust emissions from these external combustion sources shall not exceed 20% opacity averaged over a 10-minute period.</i>	Y	Comply by burning only natural gas (see below).	
	<i>Monitoring: Use of natural gas fuel meeting the requirement at Condition A805.A constitutes compliance unless opacity exceeds 20% averaged over a 10-minute period.</i>	Y	Confirm use of natural gas only as fuel	Boilers fire only natural gas (backup fuel oil supply not available).

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	<i>Record dates of any opacity measurements and the corresponding opacity readings.</i>	Y	Not required for gas burning	
	<i>Report dates of any opacity measurements and the corresponding opacity readings.</i>	Y	Not required for gas burning	
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
A806.B Units RLUOB-BHW-1 through -4: Natural Gas-Fired	<i>Exhaust emissions ≤ 20% opacity averaged over a 10-minute period.</i>	Y	Assured by only natural gas burning	
	<i>Monitoring: Use of natural gas fuel meeting the requirement at Condition A805.A constitutes compliance unless opacity exceeds 20% averaged over a 10-minute period.</i>	Y	Confirm use of natural gas only as fuel	Only natural gas combusted in these boilers.
	<i>Record dates of any opacity measurements and the corresponding opacity readings.</i>	Y	None required for natural gas burning	
	<i>Report dates of any opacity measurements and the corresponding opacity readings.</i>	Y	No opacity readings for natural gas burning	
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
A806.C Units RLUOB-BHW-1 through -4: Fuel Oil-Fired	<i>Exhaust emissions ≤ 20% opacity averaged over a 10-minute period.</i>	Y	No fuel oil use since 2013.	No fuel oil use since 2013.
	<i>Perform a least one (1) opacity observation each day that fuel oil is used to fire any of Units. Opacity shall be measured over a 10-minute period, in accordance with the procedures at 40 CFR 60, Appendix A, Method 9</i>	Y	" "	" "
	<i>Record dates of any opacity measurements and the corresponding opacity readings.</i>	Y	" "	" "
	<i>Report dates of any opacity measurements and the corresponding opacity readings.</i>	Y	" "	" "
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	" "	

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
A807.A Natural Gas Fuel Usage (except RLUOB-BHW-1 through -4)	<i>Combined natural gas fuel usage ≤ 870 million standard cubic feet (MMscf)/year, including all other Insignificant boilers and heaters.</i>	Y	Review records	In emission calculations for small boilers.
	<i>Monitor monthly total volumetric flow of natural gas to Units TA-55-6-BHW-1 and TA-55-6-BHW-2 through totalizing flow meter.</i>	Y	" "	Meters read monthly and provided to air quality dept in monthly facility wide gas usage report.
	<i>Calculate the monthly rolling 12-month total natural gas fuel usage</i>	Y	" "	In emission calculations for small boilers.
	<i>Calculate the actual emissions rate for the emission units based on the actual fuel usage of Units equipped with individual flow meters and the Facility-Wide metered or estimated natural gas usage.</i>	Y	" "	In emission calculations for small boilers.
	<i>Calculate the semiannual and annual total emissions rate (tons/year) for this source category and compare them to the emission limits in Table 802.A.</i>	Y	" "	In emission calculations for small boilers, and semiannual emission reports.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A807.B. Natural Gas and Fuel Oil Usage (Units RLUOB-BHW-1 through -4)	<i>Comply with the emission limits in Table 802.B for each fuel type.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
	<i>Monitor the monthly total volumetric flow of natural gas to Units RLUOB-BHW-1 through -4 using a totalizing flow meter.</i>	Y	Review records	Gas totalizer log and emission calculations.
	<i>Monitor the daily fuel oil consumption during which any of the 4 RLUOB boilers are fired with this fuel type.</i>	Y	" "	No fuel oil use since 2013.
	<i>Monitor the hours of operation for each boiler when fired on fuel oil and during nonemergency maintenance and readiness testing.</i>	Y	" "	No fuel oil use since 2013.

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	<i>Calculate and record the annual fuel oil usage for Units RLUOB-BHW-1 through -4 as a daily rolling 365-day total.</i>	Y	" "	No fuel oil use since 2013.
	<i>Calculate and record the semiannual and calendar year total emissions rate (tons/year) for each fuel type and for the combination of both fuels compare to the emission limits in Table 802.B.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance. No recent fuel oil firing.
	<i>Record the annual hours of operation of each boiler when fired on fuel oil during nonemergency maintenance and readiness testing and compare to the limitation at Condition A804.B.</i>	Y	Review records	No fuel oil use since 2013.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A807.C. 40 CFR 60, Subpart Dc (Units TA-55-6-BHW-1, TA-55-6-BHW-2, RLUOB-BHW-1 through -3)	<i>Use only fuel oil with ≤ 0.5 weight percent fuel sulfur.</i>	Y	Review records	No fuel oil use since 2013.
	<i>Comply with the fuel supplier certification requirements in 40 CFR 60.46c(e)</i>	Y	Review of natural gas contract	Gas contract < 3/4 grain S per 100 cubic ft. No fuel oil used since 2013.
	<i>Monitor fuel usage to meet the recordkeeping requirements of 40 CFR 60.48c(g).</i>	Y	Review record of monthly fuel use or fuel purchase. Ask LANL which option is used.	Monthly natural gas usage monitored on all 5 boilers.
	<i>Comply with the recordkeeping requirements of 40 CFR 60.48c(c), (f) and (g) 40 CFR 60.7(b) and (f)</i>	Y	Review New Source Performance Standard (NSPS) and LANL practices	Recordkeeping meets NSPS conditions.
	<i>Maintain the records according to §60.48c(i) except when records are required to be maintained for a longer time period in accordance with Section B109.</i>	Y	NA - longer (5-yr) record keeping required under CFR Part 70.	

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	<i>Comply with the initial notification requirements of 40 CFR 60.48c(a) and 40 CFR 60.7(a)(1), (a)(4) and (g)</i>	Y	review initial notice letters to EPA	past requirement.
	<i>Comply with periodic reporting requirements of 40 CFR 60.48c(b), (d), (e)(11) and (f).</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
	<i>Submit reports according to §60.48c(j).</i>	Y	Review of reports.	Reporting documented in semiannual monitoring report.
	<i>Report in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A807.D. 40 CFR 60, Subpart Dc (New Unit RLUOB-BHW-4)	<i>Use only fuel oil with ≤ 0.5 weight percent fuel sulfur.</i>	NA	Boiler not installed or operating	
	<i>Demonstrate initial compliance with the SO2 standard through a certification from the fuel supplier per 40 CFR 60.44c(h).</i>	NA	" "	
	<i>Comply with the fuel supplier certification requirements in 40 CFR 60.46c(e)</i>	NA	" "	
	<i>Monitor fuel usage to meet the recordkeeping requirements of 40 CFR 60.48c(g).</i>	NA	" "	
	<i>Comply with the recordkeeping requirements of 40 CFR 60.48c(c), (f) and (g) 40 CFR 60.7(b) and (f)</i>	NA	" "	
	<i>Maintain the records according to §60.48c(i) except when records are required to be maintained for a longer time period in accordance with Section B109.</i>	NA	" "	
	<i>Comply with the initial notification requirements of 40 CFR 60.48c(a) and 40 CFR 60.7(a)(1), (a)(4) and (g)</i>	NA	" "	
	<i>Comply with periodic reporting requirements of 40 CFR 60.48c(b), (d), (e)(11) and (f).</i>	NA	" "	
	<i>Submit reports according to §60.48c(j).</i>	NA	" "	
	<i>Report in accordance with Section B110.</i>	NA	" "	

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
A807.E. Initial Compliance Testing (Units RLUOB-BHW-4)	<i>Initial compliance tests required for NOx and CO while burning natural gas fuel only and only if boiler Unit RLUOB-BHW-4 is not an identical make and model to boiler units RLUOB-BHW-1 through -3.</i>	NA	" "	
	<i>Conduct EPA Method tests for CO and NOx within six (6) months of any new boiler start up. Method 19 may be used for determining stack flow rates.</i>	NA	" "	
	<i>Initial compliance testing shall be conducted in accordance with Section B111.</i>	NA	" "	
	<i>Maintain records in accordance with Section B109.</i>	NA	" "	
	<i>Report in accordance with Section B110 and B111.</i>	NA	" "	
A807.F. Operational Inspection (Sources listed in Table 800.A)	<i>Perform periodic inspections to ensure proper operations.</i>	Y	Review inspection records	Annual inspections and PM.
	<i>conduct annual operational inspections to determine that the boilers are operating properly.</i>	Y	Review inspection records	Last annual inspection 8/30/17, in air quality binder.
	<i>Include operational checks for indications of insufficient excess air, or too much excess combustion air. Include observation of common physical indications of improper combustion, including indications specified by the boiler manufacturer, and indications based on operational experience with these units.</i>	Y	Review inspection records	Checklist for each inspection - in air quality binder attached to inspection work order.
	<i>Maintain records of operational inspections, describing the results of all operational inspections noting chronologically any adjustments needed to bring the boilers into compliance.</i>	Y	" "	Inspection records at site and in air quality binder.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained

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	<i>Submit reports in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
	<i>Within ninety (90) days of permit issuance, the permittee shall submit for Department approval a procedure which the permittee will use to carry out the operational inspections.</i>	Y	Standard practice for LANL boilers.	No recent permits issued for this source.
	<i>Permittee may at any time submit revisions for Department approval.</i>	Y	Nothing required.	No permit revisions submitted.
A900 Chemical Usage	<i>Table 900.A lists all of the process equipment authorized for this source category. Information Only.</i>			
A901	<i>Control Equipment – Chemical Usage – Not Required</i>	NA		
A902	<i>Table 902.A lists the emission units, and their allowable emission limits. Information only.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
A903	<i>comply with all applicable sections of the requirements listed in Table 903.A.</i>			
	<i>NSR Permit 2195N-R2</i>	Y	See below.	requirements in this permit.
A904	<i>Operational Limitations</i>			
	<i>Chemical Usage source category is authorized for continuous operation. No monitoring, recordkeeping, or reporting requirements are required to demonstrate compliance with continuous hours of operation.</i>	Y	Nothing required for compliance with this condition.	
	<i>For Unit RLUOB-CHEM, the permittee shall obtain a NSR permit revision prior to the use of any Toxic Air Pollutant (TAP) that is expected to be emitted in excess of the stack-height-corrected screening levels at 20.2.72.502 NMAC.</i>	Y	Review record of recent changes.	All projects and modifications to current usage are evaluated with Integrated Review Tool, which identifies requirement for permitting, and chemical usage at RLUOB is evaluated semiannually vs. TAP emission threshold. No permit revision required in 2017.
A905-A906	<i>Not Required</i>	NA		

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A907.A. Unit LANL-FW-CHEM Emission Calculations	<i>Comply with the facility-wide VOC and HAP emission limits at Table 106.B.</i>	Y	Review semiannual emission reports.	In semiannual and annual emission reports
	<i>Monitor facility-wide chemical purchasing and site location using an electronic chemical tracking system.</i>	Y	Review records and procedure.	Air compliance group has systematic process for evaluating chemical usage and emissions from LANL purchasing system.
	<i>Estimate the quantity of chemicals vented to the atmosphere on a semi-annual basis, and categorized as VOC, HAP, or a combination of these categories.</i>	Y	" "	In semiannual and annual emission reports
	<i>Record the quantity of total VOC emitted and the quantity of each individual and total HAPs on a semi-annual basis.</i>	Y	" "	In semiannual and annual emission reports
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
	<i>Include any HAP emitted in a quantity greater than 0.5 tons per year.</i>	Y	Review process for calculating HAP	LANL reports evaluate HAPs vs 0.5 ton threshold, but reports ALL HAPs emitted.
A907.B. Unit RLUOB-CHEM Emission Calculations	<i>Comply with the source-specific VOC emission limit at Table 902.A and the facility-wide VOC and HAP emission limits at Table 106.B.</i>	Y	Review semiannual emission reports.	In semiannual and annual emission reports
	<i>Monitor facility-wide chemical purchasing and site location using an electronic chemical tracking system.</i>	Y	Review records and procedure.	Air compliance group has systematic process for evaluating chemical usage and emissions from LANL purchasing system.
	<i>Estimate the quantity of chemicals vented to the atmosphere on a semi-annual basis, and categorized as VOC, HAP, or a combination of these categories.</i>	Y	" "	In semiannual and annual emission reports
	<i>Record the quantity of total VOC and Toxic Air Pollutants (TAP), each individual HAP, and the total HAPs emitted on a monthly rolling, 12-month total basis.</i>	Y	" "	In semiannual and annual emission reports
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.

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	<i>Include any HAP emitted in a quantity greater than 0.5 tons per year.</i>	Y	Review process for calculating HAP	LANL reports evaluates HAPs vs 0.5 ton threshold, but reports ALL HAPs emitted.
A1000	<i>Table 1000.A: Degreasers; Regulated Sources List: Ultrasonic Cold Batch</i>	Y		
A1001	<i>Control Equipment - Not Required</i>	NA		
A1002	<i>Table 1002.A: Allowable Emissions. No source-specific emission limit but emissions included in facility-wide VOC/HAP limits.</i>	Y		
A1003	<i>Applicable Requirements</i>			
	<i>40 CFR 63, Subpart T National Emission Standards for Halogenated Solvent Cleaning</i>	Y	See below.	requirements in this permit.
A1004	<i>Degreasers are authorized for continuous operation. No monitoring, recordkeeping, or reporting requirements are required to demonstrate compliance with continuous hours of operation.</i>	Y		
A1005-A1006	<i>Not Required</i>	NA		
A1007	<i>Operational Requirements</i>			
	<i>1) Ensure the degreaser is closed with a tight fitting cover whenever not in use, and</i>	Y	Review usage of degreaser and inspect unit.	Documented in monthly work practice check list.
	<i>2) Maintain a freeboard ratio of 0.75 or greater, and</i>	Y	" "	" "
	<i>3) Collect and store all waste solvent and wipe rags in closed containers, and</i>	Y	" "	" "
	<i>4) Perform flushing within the freeboard area only, and</i>	Y	" "	" "
	<i>5) Allow cleaned parts to drip for 15 seconds or until dripping stops, and</i>	Y	" "	" "
	<i>6) Do not exceed the fill line on the solvent level, and</i>	Y	" "	" "
	<i>7) Wipe up spills immediately, and</i>	Y	" "	" "
	<i>8) Do not create observable splashing with agitation device, and</i>	Y	" "	" "
	<i>9) Ensure that the degreaser is not exposed to drafts greater than 40 meters/min, and</i>	Y	" "	" "

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	10) Do not clean sponges, fabric, wood, or paper.	Y	" "	" "
	Monitor and record the amount of solvent added to the degreaser.	Y	Review records.	Recorded on monthly log.
	1) Calculate the actual emissions rate (pounds/month) of VOC and HAPs based on the quantity of solvent lost to evaporation on a monthly basis.	Y	Review calcs and records.	In emission calculations and degreaser compliance database.
	2) Calculate the semi-annual emissions rate (tons/year) for this source category and add to the facility-wide emission rates in Table 106.B.	Y	Review semiannual reports.	In emission calculations and degreaser compliance database.
	3) Maintain records of the degreaser solvent content and quantity added and work practice checklists.	Y	Review records.	Records maintained by LANL air compliance group.
	4) Maintain records in accordance with Section B109.	Y	Review of records	records are maintained
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1100	Table 1100.A lists all of the Internal Combustion equipment authorized for this source category.	Y		
A1101	Not Required	NA		
A1102	Table 1102.A lists the emission units, and their allowable emission limits.	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
A1103	Applicable Requirements			
	NSR Permit 2195F-R4	Y	See below	requirements in this permit.
	NSR Permit 2195P and 2195-P3, 2195P-R1 and 2195P-R3	Y	" "	" "
	NSR Permit 2195N-R1 (Admin NOE)	Y	" "	" "
	20.2.61 NMAC Smoke and Visible Emissions	Y	" "	" "
	20.2.77 New Source Performance Standards	Y	" "	" "

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	<i>40 CFR 60, Subpart A, General Provisions</i>	Y		
	<i>1.1 40 CFR 60 Subpart IIII, Stationary Compression Ignition Internal Combustion Engines</i>	Y		
	<i>40 CFR 89, Control of Emissions from New and In-Use Nonroad Compression Ignition Engines</i>	Y		
A1104.A TA-33-G-1P	<i>1) Unit TA-33-G-1P is limited to eight (8) hours of daily operation at full capacity. Operation shall occur between the hours of 7:00 AM and 5:00 PM.</i>	Y	Review of logs.	Operator instructions include daytime hours only. Operating logs show compliance.
	<i>Unit TA-33-G-1P is limited to the emissions limits stated in Table 1102.A.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
	<i>Monitor the time(s) of operation each day, and the daily and monthly rolling 12-month total hours of operation for Unit TA-33-G-1P using a non-resettable hour meter.</i>	Y	View meter, review logs.	On operating log and emission calculations. Generator has hours meter.
	<i>Hours that do not represent hours the unit is operated at the TA-33 site may be monitored separately for subsequent subtraction from the daily and monthly rolling 12-month totals</i>	Y	Review process for logging non-TA33 hours. Did this unit operate elsewhere?	Maintain log of location. Generator has not been moved to other site.
	<i>keep records of the time(s) of operation each day, and the daily, monthly, and the monthly rolling 12-month total hours of operation as indicated on the non-resettable hour meter.</i>	Y	Review records.	Records maintained in log book, air quality binder and emission calculations.
	<i>The permittee may record and subtract hours of operation that do not represent operating hours at the TA-33 site.</i>	Y	" "	Maintain log of location and hours of operation. Generator has not been moved to other site.
	<i>Calculate the annual emissions of all criteria and hazardous air pollutants from Unit TA-33-G-1P.</i>	Y	" "	Review of semiannual emission report confirms compliance.
	<i>The permittee may subtract emissions that are not the result of operations at TA-33.</i>	Y	" "	Only operation at TA-33 in 2017.

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	<i>Submit reports in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1104.B Units TA-33-G-2 through -4	<i>Authorized to operate 500 hours per generator per calendar year.</i>	Y	Review hours log.	All generators operated < 500 hr in 2017; in semiannual monitoring report.
	<i>Each unit shall be certified to be in compliance with applicable non-road emission standards in 40 CFR 89.</i>	Y	Inspect certification.	Certificates maintained in air quality binder.
	<i>Monitor the total hours of operation for each genset using a non-resettable hour meter.</i>	Y	View meter, review logs.	All generators operated < 500 hr in 2017; in semiannual monitoring report.
	<i>Record the total hours operation of the gensets as indicated on the nonresettable hour meter.</i>	Y	Review records.	All generators operated < 500 hr in 2017; in semiannual monitoring report.
	<i>Calculate and record the semi-annual emissions of criteria and hazardous air pollutants from each genset.</i>	Y	" "	In emission calculation spreadsheets and semiannual emission report.
	<i>Maintain a copy of the engine certification to the applicable non road emission standards in 40 CFR 89.</i>	Y	" "	Certificates maintained in air quality binder.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1105	<i>Unit TA-33-G-1P while in use at TA-33 shall combust only diesel fuel containing no more than 500 ppmw total sulfur.</i>	Y	Inspect fuel certificate.	Only ultralow sulfur diesel fuel used.
	<i>Maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the fuel, or fuel analysis, specifying the fuel grade and certification or allowable sulfur limit.</i>	Y	" "	Certificate maintained from fuel vendor.
	<i>Or, keep a receipt or invoice from a commercial fuel supplier with each fuel delivery, which shall include the delivery date, the fuel type delivered, and amount of fuel delivered, and the maximum sulfur content of the fuel.</i>	NA		
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1106	<i>Visible emissions from the stacks ≤ opacity of 20 percent.</i>	Y	Review of visible emission test reports.	Results in attachment to semiannual report all < 20% opacity.

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	<i>During steady state operation, opacity shall be measured over a 10-minute period in accordance with the procedures at 40 CFR 60, Appendix A, Method 9 on a quarterly basis per calendar year as qualified by the Section B108.D monitoring provisions. This requirement excludes Insignificant and Trivial Activities.</i>	Y	Review test records and review method for tracking hours re: Section B108.D exemption.	Since each generator operates infrequently, opacity readings are done annually, as allowed by Section B108.D provisions.
	<i>Maintain records of all Method 9 observations, and in accordance with Section B109.</i>	Y	Review records.	Visible emission reports maintained.
	<i>Report date, time, and results of all Method 9 observations.</i>	Y	Review reports	Visible emission reports include this information.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1107. RLUOB-GEN-1 through -3; 40 CFR 60, Subpart IIII	<i>Comply with the applicable emissions standards and fuel requirements in §60.4205(a), §60.4206 and §60.4207(b) and Table 1102.B.</i>	Y		Certificate from Cummins complies with EPA Tier 1 emission limits. LANL uses only ultralow sulfur diesel in its generators. There is noTable 1102.B.
	<i>Follow the compliance requirements stated in §60.4211(a, b, and f) and the general provisions of 40 CFR 60 Subpart A as required in §60.4218.</i>	Y		
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Comply with all applicable reporting requirements of 40 CFR 60, Subpart A as required in §60.4218 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1107.B Emergency Generators Unit TA-48-GEN-1, TA-55-GEN-1 TA-55-GEN-2 and TA-55-GEN-3 40 CFR 60, Subpart IIII	<i>Comply with the applicable emissions standards and fuel requirements in §60.4202(a)(2), §60.4205(a), §60.4206 and §60.4207(b) and Table 1102.B.</i>	Y	LANL uses on ultralow sulfur diesel fuel.	Vendor certificate confirms TA-55-GEN-1 and GEN-2 meet Tier 4 limits, TA-48-GEN-1 meets Tier 3 limits. 60.4202(a)(2) is for manufacturers only!

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	<i>Follow the compliance requirements stated in §60.4211(a, b, and f) and the general provisions of 40 CFR 60 Subpart A as required in §60.4218.</i>	Y		48-GEN-1 has not started up.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Comply with all applicable reporting requirements of 40 CFR 60, Subpart A as required in §60.4218 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1200	<i>Table 1200.A lists all of the process equipment authorized for this source category: Data Disintegrator/Industrial Shredder</i>	Y		
A1201	<i>Table 1201.A lists all of the pollution control equipment required. Information Only.</i>	Y		
A1202	<i>Table 1202.A lists the emission units, and their allowable emission limits. Information Only.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
A1203	<i>Applicable Requirements</i>			
	<i>NSR Permit No: 2195H</i>	Y	See below	requirements in this permit.
A1204	<i>Processing limit: ≤ 25,000 boxes or 565 tons per year media.</i>	Y	Review of production records	Data disintegrator destruction log and emission calculations.
	<i>Perform the monitoring, recordkeeping and reporting required in Condition A1207.A.</i>	Y	as noted below.	
A1205-A1206	<i>Not Required</i>			
A1207.A Emission Calculations	<i>Calculate Data Disintegrator emissions based on the records of the number of boxes of media that are destroyed.</i>	Y	Review of records and procedures	In emission calculations and emission reports.
	<i>Monitor the quantity of media destroyed on a monthly basis based on a previously determined average box weight. This average weight determination shall be maintained as part of the records for this facility.</i>	Y	Review of logs and records	Log of boxes of paper shredded maintained at the site.

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	<i>Calculate the actual emissions rate (tons per reporting period) for the emission units listed in Table 1200.A on a semi-annual basis.</i>	Y	Review of records and procedures	In emission calculations and emission reports.
	<i>The emission rate in tons per year shall be calculated by summing the emissions from the previous reporting period with the current period.</i>	Y	Review of records and procedures	In emission calculations and emission reports.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1207.B Cyclone/Cloth Tube Filters (Data Disintegrator)	<i>Perform regular maintenance and repair on the cyclone and cloth tube filter(s) per manufacturer's recommendations.</i>	Y	Review maintenance procedures and records	Regular 6-month preventive maintenance plus other service recorded in maintenance log and history. Vendor O & M manual on file.
	<i>Maintain records on site to demonstrate compliance with manufacturer's recommended repair and maintenance schedules for the cyclone and the cloth tube filter(s).</i>	Y	Review records	Maintenance log kept onsite.
	<i>Records shall be maintained in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1207.C Compliance Testing (Data Disintegrator)	<i>If compliance testing is required by the Department, it shall be conducted in accordance with EPA Reference Methods 1 through 4, Method 5 for TSP, and conducted in accordance with 40 (CFR 60, Appendix A. For combined TSP and PM10, testing shall be in accordance with 40 CFR 51, Appendix M, Method 201.</i>	Y	Was testing required?	NMED has not requested testing in 2017.
	<i>Records shall be maintained in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1300	<i>Table 1300.A lists all of the Power Plant equipment authorized for this source category.</i>	Y	Information only	
A1301	<i>Table 1301.A lists all the pollution control equipment required for this source category.</i>	Y	Information only	

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A1302	<i>Table 1302.A lists the emission units, and their allowable emission limits.</i>	Y	Emission calculations - total emissions and comparison with limits in semiannual emission reports.	Review of semiannual emission report confirms compliance.
	<i>NOx emissions from the boilers (Units TA-3-22-1 through -3) shall not exceed 0.3 pound/MMBtu (million British thermal units) of heat input when burning natural gas or oil</i>	Y	Review emission calculations and/or emission tests	NOx emissions measured as < 0.3 pound/MMBtu during Oct 2002 compliance test when burning natural gas.
	<i>For the Combustion Turbine (Unit TA-3-22-CT-1), comply with the NSPS Subpart GG NOx emissions limitation of 110.4 ppmv at 15% O2, dry basis;</i>	Y	Review emission calculations and/or emission tests	Permit limit is more stringent: 25 ppm. Jan 2014 test report measured 17.7 ppm.
	<i>and, the NSPS Subpart GG SO2 emissions limitation of 0.015% by volume at 15% O2 dry basis or through use of any fuel not exceeding 8000 ppmw total sulfur.</i>	Y	Review of natural gas contract	Contract < 3/4 grain S per 100 cubic ft. This equals ~ 23.3 ppm sulfur.
A1303	<i>Applicable Requirements</i>			
	<i>20.2.33 NMAC Gas Burning Equipment – Nitrogen Dioxide</i>	Y	See A1302	requirements in this permit.
	<i>20.2.34 NMAC Oil Burning Equipment – Nitrogen Dioxide</i>	Y	See A1302	requirements in this permit.
	<i>20.2.61 Smoke and Visible Emissions</i>	Y	See below	requirements in this permit.
	<i>40 CFR 60, Subpart A</i>	Y	See below	requirements in this permit.
	<i>40 CFR 60, Subpart GG</i>	Y	See below	requirements in this permit.
	<i>NSR Permit No: 2195B-M2</i>	Y	See below	requirements in this permit.
A1304	<i>This source category is authorized to operate at any time of the day or night on any day of the year. No monitoring, recordkeeping, or reporting requirements are required to demonstrate compliance with continuous hours of operation.</i>	Y	Nothing required for compliance with this condition.	
	<i>Units TA-3-22-1 through -3 shall be operated on fuel oil ≤ 48 hours per year per boiler for non-emergency maintenance and readiness testing.</i>	Y	Review of records.	Documented on monthly totalizer reports and emission calculations

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A1305.A Boilers (Units TA-3-22-1 through -3)	<i>Combust only natural gas containing no more than 2 gr/100 scf (standard cubic feet) total sulfur or No. 2 fuel oil containing no more than 0.05 weight % total sulfur.</i>	Y	Confirm these are the only fuels.	By contract, natural gas is < 3/4 gr/100 scf S.
	<i>Maintain records of a current, valid purchase contract, tariff sheet or transportation contract for the fuel, or fuel analysis, specifying the fuel grade and certification or allowable sulfur limit.</i>	Y	Review certificates.	Gas contract from 2010 still in effect.
	<i>Or, keep a receipt or invoice from a commercial fuel supplier with each fuel delivery, which shall include the delivery date, the fuel type delivered, and amount of fuel delivered, and the maximum sulfur content of the fuel.</i>	NA		
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1305.B Combustion Turbine (Unit TA-3-22-CT-1)	<i>Combust only natural gas containing no greater than 2 gr/100 scf total sulfur.</i>	Y	Confirm natural gas as only fuel.	Use of natural gas only confirmed for the combustion turbine.
	<i>Maintain records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, or fuel analysis, specifying the fuel grade and certification or allowable sulfur limit.</i>	Y	Review certificate.	Gas contract from 2010 still in effect.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1306.A Sources Combusting Natural Gas	<i>All combustion units shall not exceed 20% opacity.</i>	Y	Compliance assured during natural gas combustion.	
	<i>Use of natural gas fuel meeting the requirement at Condition A1305.A or B constitutes compliance with 20.2.61 NMAC unless opacity exceeds 20% averaged over a 10-minute period.</i>	Y	Compliance assured during natural gas combustion.	No instances of opacity > 20% reported with natural gas burning.
	<i>Record dates of any opacity measures and the corresponding opacity readings.</i>	Y	Review test records.	No readings required.

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	<i>Report dates of any opacity measures and the corresponding opacity readings.</i>	Y	Review reports	No readings required.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1306.B Boilers Combusting No. 2 Fuel Oil	<i>All combustion units shall not exceed 20% opacity.</i>	Y	Review visible emission test reports	Reports show opacity < 20%
	<i>During steady state operation, opacity shall be measured over a 10-minute period in accordance with the procedures at 40 CFR 60, Appendix A, Method 9 on a quarterly basis per calendar year whenever the boiler(s) are operational during the monitoring period.</i>	Y	Opacity readings taken whenever a boiler fires oil.	Review visible emission test reports
	<i>Maintain records of all Method 9 observations, and in accordance with Section B109.</i>	Y	Review records	Records maintained.
	<i>Report date, time, and results of all Method 9 observations.</i>	Y	Review visible emissions (VE) reports	Data included on report form.
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.A TA-3 Power Plant	<i>Comply with the hourly and annual emission limits at Table 1302.A. and Conditions A1302.B, C, and D for the combustion turbine and boilers.</i>	Y	Review annual emission calculations and reports	Calculations show compliance
	<i>Annual emission limit is for the combined emissions from all 3 boilers.</i>	Y	Review annual emission calculations and reports	Calculations show compliance
	<i>Calculate monthly:</i>			
	<i>1) the average hourly emissions rates (pph) for each emissions unit based on the monthly total fuel consumption and monthly actual hours of operation.</i>	Y	Review of records.	Shown in emission calculations
	<i>2) the actual annual emissions rates (tpy) for all emissions units based on the monthly rolling 12-month total fuel consumption and the monthly rolling 12-month total hours of operation.</i>	Y	" "	Shown in emission calculations

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	3) NOx emission rates for the boilers in terms of pounds/MMBtu heat input.	Y	" "	Monthly calculations based on emission factor; therefore the pounds/MMBtu value is a constant.
	Maintain records in accordance with Section B109.	Y	Review of records	records are maintained
	Submit reports described in Section A109 and in accordance with Section B110.	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.B Boilers, Units TA-3-22-1 through TA-3-22-3	Combined boiler operation shall not consume more than 1000 MMscf of natural gas and no more than 500,000 gallons of No. 2 fuel oil in any 12-month period.	Y	Review fuel use records.	Shown in emission calculations
	Measure natural gas fuel flow using gas flowmeters installed on the natural gas fuel inlet to each respective unit (3 separate gas flowmeters).	Y	Inspect flow meters and review records.	Done and readings taken in boiler control room.
	Fuel oil usage shall be measured using a single inventory meter located at a storage tank that is dedicated for use by the TA-3 power plant boilers.	Y	Inspect inventory meter.	Fuel oil flowmeter present near air compressor building.
	The liquid fuel flow rate shall be continuously monitored whenever liquid fuel is combusted.	Y	Review fuel use records.	Monitored and recorded in boiler control room; shown on monthly totalizer reports
	Natural gas fuel flow rate for each boiler shall be continuously monitored whenever natural gas is combusted.	Y	Review fuel use records.	Monitored and recorded in boiler control room; shown on monthly totalizer reports
	The hours of operation of each boiler shall be continuously monitored.	Y	Review operating logs.	Monitored and recorded in boiler control room; shown on monthly totalizer reports
	record the monthly total of liquid fuel (gallons) for all boilers combined and gaseous fuel (scf) for each boiler on a monthly basis, to include a monthly total.	Y	Review records	Recorded on monthly totalizer report.
	Calculate and record fuel usage on a monthly rolling 12-month total basis.	Y	" "	Recorded on monthly totalizer reports and emission reports.
	Record the hours of operation of each boiler on a monthly basis, to include a monthly total.	Y	" "	Recorded on monthly totalizer report.
	Include the monthly rolling 12-month total hours of operation for all 3 boilers combined.	Y	" "	Recorded on monthly totalizer reports and emission reports.

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	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.C Combustion Turbine, Unit TA-2-22-CT-1	<i>Combustion turbine shall not consume more than 1400 MMscf of natural gas in any 12-month period.</i>	Y	Review records.	Recorded on monthly totalizer reports and emission reports.
	<i>Measure volumetric flow using a gas fuel flowmeter installed on the fuel inlet of the combustion turbine.</i>	Y	Inspect flow meters and review records.	Gas meter located near compressor bldg.
	<i>Continuously monitor the natural gas fuel flow rate for the combustion turbine whenever natural gas is combusted.</i>	Y	Review records.	Monitored and recorded in turbine control room
	<i>Record the daily total of gaseous fuel (scf) for the turbine on a monthly basis, to include a monthly total.</i>	Y	" "	Recorded monthly log in turbine control room
	<i>Calculate and record annual fuel usage on a monthly rolling 12-month total basis.</i>	Y	" "	On turbine gas usage spreadsheet and emission calculations
	<i>Record the daily hours of operation of the combustion turbine on a monthly basis, to include a monthly total.</i>	Y	" "	Monitored and recorded in turbine control room
	<i>Include the monthly total hours and monthly rolling 12-month total hours of operation.</i>	Y	" "	On turbine gas usage spreadsheet and emission calculations
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.D Combustion Turbine, Unit TA-3-22-CT-1	<i>The combustion turbine shall be operated at no less than 80% and no greater than 100% load as determined by the manufacturer's supplied algorithm, except for minimal periods during startup and shutdown conditions. The permittee shall follow the manufacturer's recommended startup/shutdown procedures in order to minimize the duration of these events.</i>	Y	Review procedure for confirming operating load.	Operating load monitored and recorded on log hourly in turbine control room; evaluated for % load.
	<i>The operating load of the combustion turbine shall be monitored once daily during normal operations of that unit.</i>	Y	Review records.	Operating load monitored and recorded on log hourly in turbine control room
	<i>Record the daily monitored operating load for the combustion turbine.</i>	Y	" "	Operating load monitored and recorded on log hourly in turbine control room

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	<i>Maintain a record of the manufacturer's recommended startup/shutdown procedure and the manufacturer's criteria for the determination of turbine load.</i>	Y	" "	Operations procedure includes this.
	<i>Maintain a record for each startup/shutdown or malfunction event for the combustion turbine.</i>	Y	" "	Startup/shutdown reflected on operating log. No malfunctions in 2017.
	<i>Include the date, the start/end time and duration for each event, which is defined as the length of time the combustion turbine is operating at less than 80% or greater than 100% load.</i>	Y	" "	No such malfunctions in 2017.
	<i>For any malfunction event, the record shall also include the nature of the malfunction and any corrective action taken.</i>	Y	" "	No such malfunctions in 2017.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.E Boilers, Units TA-3-22-1 through -3	<i>Each boiler (Units TA-3-22-1 through -3) shall only be operated with a properly operating flue gas recirculation fan</i>	Y	Confirm monitoring of flue gas recirculation.	FGR fan speed recorded hourly on boiler log
	<i>Any malfunction of the flue gas recirculation system during boiler operation may be subject to the excess emissions requirements of 20.2.7 NMAC.</i>	Y	Inquire about malfunctions	No such malfunctions in 2017.
	<i>Inspect the flue gas recirculating fans for proper operation and maintenance once during each calendar month that the unit was operating.</i>	Y	Review maintenance and inspection practices and records.	Monthly inspection and maintenance conducted - work orders in boiler control room AQ permit binder.
	<i>Record all inspections of the flue gas recirculating fans and any event during which a fan malfunctions.</i>	Y	Review records.	Inspections recorded in boiler control room permit binder. No fan malfunctions.
	<i>Include the date, time, name of operator conducting the inspection, and any discrepancies noted.</i>	Y	" "	Data included on inspection form.
	<i>For any malfunction event, the record shall also include the nature of the malfunction and any corrective action taken.</i>	Y	" "	No such malfunctions in 2017.

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	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.F Combustion Turbine, Unit TA-3-22-CT-1	<i>Equip the combustion turbine with Rolls-Royce Dry Low Emissions (DLE) control technology (pre-mix, lean-burn series staged combustion system) to control NOx emissions.</i>	Y	Confirm equipment.	Turbine is equipped with DLE .
	<i>Maintain a record of the DLE system associated with the combustion turbine.</i>	Y	Review records.	DLE confirmed in turbine literature.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Submit reports described in Section A109 and in accordance with Section B110.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1307.G Combustion Turbine, Unit TA-3-22-CT-1	<i>Comply with the applicable requirements of 40 CFR 60, Subpart A and Subpart GG.</i>	Y	Requirements for startup and modifications.	No current activity in 2017 triggered these requirements.
	<i>Comply with the monitoring and testing requirements of 40 CFR 60.334 and 60.335.</i>	Y	Compliance with requirements below.	Required monitoring and testing conducted.
	<i>Comply with the recordkeeping requirements of 40 CFR 60.334 and 40 CFR 60.7.</i>	Y	Review records.	Records of startup, shutdown, malfunction and monitoring meet requirements
	<i>Comply with the reporting requirements of 40 CFR 60.7.</i>	Y	Review records	No notifications per 60.7 required in 2017.
A1307.H Combustion Turbine, Unit TA-3-22-CT-1	<i>Comply with the allowable emission limits at Table A1302.A, including the NOx ppmv limitation.</i>	Y	Review records and reports	Emission calculations show compliance
	<i>Test emissions using a portable analyzer or EPA Reference Methods, subject to Section B108. For periodic testing of NOx and CO emissions tests shall be carried out as described below.</i>	Y	Review procedure and records.	Outside testing firm used.

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>(1) The test period shall be annually, based on a calendar year.</i>	Y	Review of test reports	The most recent version of the Title V permit, P100-R2M1, modified the prior version by removing language preventing reduction in test schedule when an emission unit operates infrequently (Sec. B108.D). LANL environmental staff understand this change to allow less frequent monitoring, as documented in LANL comments on the draft Title V permit (P100-R1-M3). Since the turbine has typically operated less than 10% of the time in a monitoring period, a testing frequency of once per permit term (5 years) is allowed per B108.D(3). LANL has documented this test frequency in its semiannual monitoring reports.
	<i>(2) The tests shall continue based on the existing testing schedule.</i>	Y	Discussion with LANL environmental staff	Testing is conducted in the winter when maximum turbine output is achieved.
	<i>(3) All subsequent monitoring shall occur in each succeeding monitoring period. No two monitoring events shall occur closer together in time than 25% of a monitoring period.</i>	Y	Discussion with LANL environmental staff	See comment for #1 above.
	<i>(4) Follow the General Testing Procedures of Section B111.</i>	Y	Review of reports	Test protocol, notifications, and test report provided per procedures.
	<i>(5) Performance testing required by 40 CFR 60, Subpart GG or 40 CFR 60, Subpart KKKK may be used to satisfy these periodic testing requirements if they meet the requirements of this condition and are completed during the specified monitoring period.</i>	NA	Allowed testing with portable analyzers used.	
	<i>Test results that demonstrate compliance with the NOx and CO emission limits shall also be considered to demonstrate compliance with the VOC emission limits.</i>	Y	Review of reports	Test results show compliance with NOx and CO limits.
	<i>Record the results of the periodic emissions tests, including the turbine's fuel flow rate and horsepower at the time of the test, and the type of fuel fired.</i>	Y	Review of reports	Most recent test report (Jan 2014) includes all of this information.

Source Name			Source I.D. Number	
Los Alamos National Laboratory			856-PRT20130004	
Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>If a combustion analyzer is used to measure excess air in the exhaust gas, records shall be kept of the make and model of the instrument and instrument calibration data. If an ORSAT apparatus or other gas absorption analyzer is used, the permittee shall record all calibration results.</i>	Y	Review of reports	Most recent test report (Jan 2014) includes make/model of combustion analyzer and instrument calibration results.
	<i>Keep records of all raw data used to determine exhaust gas flow and of all calculations used to determine flow rates and mass emissions rates.</i>	Y	Review of reports	Calculations are documented in Jan 2014 test report. Raw data for flow rates stored in files in air compliance dept.
	<i>Maintain records in accordance with Section B109.</i>	Y	Review of records	records are maintained
	<i>Report in accordance with Section B109, B110, and B111.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
A1400	<i>Regulated Sources – Facility-Wide Open Burning. Information Only.</i>	Y		
A1401	<i>Not Required</i>	NA		
A1402	<i>Table 1402.A lists the emission units, and their allowable emission limits.</i>	Y	LANL is not open burning.	
A1403	<i>Comply with all applicable sections of the requirements listed in Table 1403.A.</i>			
	<i>20.2.60 NMAC Open Burning</i>	Y	See below	requirements in this permit.
	<i>20.2.65 NMAC Smoke Management</i>	Y	See below	requirements in this permit.
A1404	<i>This source category is authorized to operate at any time of the day or night on any day of the year. No monitoring, recordkeeping, or reporting requirements are required to demonstrate compliance with continuous hours of operation.</i>	Y	Nothing required for compliance with this condition	
A1405-A1406	<i>Not Required</i>	NA		
A1407	<i>Comply with the applicable requirements of 20.2.60 NMAC and 20.2.65 NMAC, including, but not limited to:</i>			

Source Name		Source I.D. Number		
Los Alamos National Laboratory		856-PRT20130004		
Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>1) Prior to initiating a burn consisting of vegetative material, the permittee shall submit to the Department a sampling and analysis plan and upon approval conduct representative sampling of the intended burn material and analyze samples for radionuclides, target analyte list (TAL) inorganic elements, polychlorinated biphenyls (PCBs), and high explosives (HE); and</i>	Y	Review submittals related to open burning.	LANL is not conducting open burning. No open burning in 2017.
	<i>2) Submit to the Department a background concentration report for the contaminants listed in Condition A1407.A, Requirement (1). The report shall indicate locations where background concentrations were taken and compare sample results with background concentrations of the constituents; and</i>	Y	" "	" "
	<i>3) Don't burn vegetative material which includes any contaminant above the relevant background concentration; and</i>	Y	LANL is not open burning.	" "
	<i>4) Upon receiving Department approval, conduct public notification in a display ad in at least four newspapers: Los Alamos Monitor, Rio Grande Sun, Santa Fe New Mexican, and the Albuquerque Journal, no less than 21 days in advance of a planned burn.</i>	Y	" "	" "
	<i>Monitor all open burning as required by Department regulation or burn approval.</i>	Y	" "	" "
	<i>Maintain records of all sampling and analysis plans and any representative sampling conducted.</i>	Y	" "	" "
	<i>Submit reports as outlined in the Condition 1407.A Requirements, as described in Section A109, and in accordance with Section B110.</i>	Y	" "	" "
A1500	<i>Regulated Sources – Evaporative Sprayers. Information Only</i>	Y		
A1501	<i>Not Required</i>	NA		

Source Name		Source I.D. Number		
Los Alamos National Laboratory		856-PRT20130004		
Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
A1502.A	<i>The federally enforceable work practice standards in Conditions A1507.A and B establish the emissions allowable under the permit (20.2.70.7.H and I NMAC) since separate numerical pph and tpy emission limits for TSP, PM10, VOCs, and HAPs from the evaporators are not appropriate for this operating scenario. Hazardous air pollutants (HAPs) from the evaporative coolers are included in and subject to the individual and total HAP facility-wide emission limits in Table 106.B.</i>	Y	Nothing required for compliance with this condition	HAP emissions are calculated and included in emission reports.
A1503	<i>No additional applicable requirements other than those listed for the entire facility in Table 103.A.</i>	Y	Nothing required for compliance with this condition	
A1504	<i>Equipment is authorized for continuous operation.</i>	Y	Nothing required for compliance with this condition	
A1505 & A1506	<i>Not Required</i>	NA		
A1507	<i>Work Practice Standards</i>			
	<i>A. Operational Requirements</i>			
	<i>Demonstrate compliance with the allowable emission limits in Table 106.B by calculating the annual total HAPs emissions in tons per year. The emissions shall be calculated based on the most recent water analysis and hours of operation for the evaporative sprayers.</i>	Y	Review of records	Annual HAP emissions shown in emission calculations based on hours of operation and Dec 2015 analytical data.
	<i>Monitoring: Conduct an analysis of the basin water, including analytical results (water concentrations) for all HAPs and TAPs, at the Sanitary Effluent Reclamation Facility (SERF) every two years beginning no later than calendar year 2018.</i>	Y	Review analytical results if available.	Not due until end of 2018.
	<i>Monitor the hours of operation for each sprayer.</i>	Y	Review of logs and records	Hours recorded on PLC for the sprayers and shown in emission calculations.

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>Recordkeeping: Record a monthly rolling, 12-month total of HAPs emissions based on the sum of emissions from all the evaporative sprayers. The emission factors for the HAPs shall be based on the values from the most recent water analysis.</i>	Y	Review of records	2017 first year of operation; no rolling totals yet. LANL has procedure for rolling 12-month totals.
	<i>Reporting: The permittee shall submit reports described in Section A109 and in accordance with Section B111.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
	<i>An electronic copy of the required water analysis including analytical results (water concentrations) for all HAPs, TAPs, and the total dissolved solids (TDS) shall be sent to AQB with the Semi-annual Monitoring Report specified in A109.A for any year in which the water sampling is conducted.</i>	Y	Review reports	Not due until end of 2018.
	<i>B. Maintenance and Repair Requirements</i>			
	<i>Compliance with the allowable emission limits in Table 106.A shall be demonstrated by properly maintaining and repairing the units.</i>	Y	Review records	Operating plan includes 3-month cleaning cycle and annual mechanical preventive maintenance.
	<i>Monitoring: Maintenance and repair shall meet the minimum manufacturer's or permittee's recommended maintenance schedule. Activities that involve maintenance, adjustment, replacement, or repair of functional components with the potential to affect the operation of an emission unit shall be documented as they occur.</i>	Y	Review maintenance procedures and logs.	Maintenance plan follows manufacturer's recommendation for annual PM.
	<i>Recordkeeping: Maintain records in accordance with Section B109, including records of maintenance and repairs activities and a copy of the manufacturer's or permittee's recommended maintenance schedule.</i>	Y	Review of records	records are maintained

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>Reporting: Maintain records in accordance with Section B109, including records of maintenance and repairs activities and a copy of the manufacturer's or permittee's recommended maintenance schedule.</i>	Y	Review of logs and reports.	Reporting documented in semiannual monitoring report.
	<i>PART B GENERAL CONDITIONS</i>			
Note	<i>Only conditions that represent ongoing requirements for the permittee are included.</i>			
B101.A(11)	<i>A responsible official shall certify the accuracy, truth and completeness of every report and compliance certification submitted to the Department as required by this permit. These certifications shall be part of each document.</i>	Y	Review reports and annual certification	
B101.A(13)	<i>Continue to comply with all applicable requirements. For applicable requirements that will become effective during the term of the permit, the permittee shall meet such requirements on a timely basis.</i>	Y	ID any recently enacted applicable rules and review LANL process for keeping up with regulatory changes.	LANL air group has process for reviewing new regulations for applicability.
B101.C	<i>A source having an excess emission shall, to the extent practicable, operate, including associated air pollution control equipment, in a manner consistent with good air pollutant control practices for minimizing emissions. The establishment of allowable malfunction emission limits does not supersede this requirement.</i>	Y	Review excess emissions reports or upset records.	No excess emission events in 2017.
B103	<i>Pay Title V fees to the Department consistent with the fee schedule in 20.2.71 NMAC - Operating Permit Emission Fees. The fees will be assessed and invoiced separately from this permit.</i>	Y	Confirm annual fees are paid.	Title V permit fees submitted to NMED April 19, 2017.
B105	<i>Submittal of Reports and Certifications</i>			
	<i>Stack Test Protocols and Stack Test Reports shall be submitted electronically to Stacktest.AQB@state.nm.us or as directed by the Department.</i>	Y	review stack tests in 2017	No tests in 2017. LANL air group does this for stack tests.

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	<i>Excess Emission Reports shall be submitted as directed by the Department.</i>	Y	Review excess emissions reports.	None in 2017
	<i>Compliance Certification Reports, Semi-Annual monitoring reports, compliance schedule progress reports, and any other compliance status information required by this permit shall be certified by the responsible official and submitted to the mailing address given in the permit, or as directed by the Department.</i>	Y	Review reports.	Annual compliance certification and other reports signed by responsible official.
	<i>Compliance Certification Reports shall also be submitted to the EPA Region 6 Administrator at the address given in the permit.</i>	Y	Confirm submittal to EPA Reg 6.	Reg. 6 EPA copied on annual compliance certification.
B106	<i>NSPS and/or Maximum Achievable Control Technology (MACT) Startup, Shutdown, and Malfunction Operations</i>			
A	<i>If a facility is subject to a NSPS standard in 40 CFR 60 and operates a continuous monitoring device required by a NSPS regulation, comply with the excess emissions reporting requirements in accordance with 40 CFR 60.7(c).</i>	Y	Are there any NSPS continuous emission monitoring systems (CEMS)?	No NSPS CEMS at LANL.
C	<i>If a facility is subject to a MACT standard in 40 CFR 63, then the facility is subject to the requirement for a Startup, Shutdown and Malfunction Plan (SSM) under 40 CFR 63.6(e)(3), unless specifically exempted in the applicable subpart.</i>	Y	No applicable MACT standards.	Only effective MACT standard at LANL is Subpart T for Halogenated Solvent Cleaning. SSM plan section of general provisions is exempted in Subpart T.
B107.A	<i>Except for operations or equipment subject to Condition B106, establish and implement a plan to minimize emissions during routine or predictable start up, shut down, and scheduled maintenance (SSM work practice plan) and shall operate in accordance with the procedures set forth in the plan.</i>	Y	Are there any SSM work practice plans?	Operation plans for emission units address startup emissions.

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B108.C	<i>If the emission unit is shutdown at the time when periodic monitoring is due to be accomplished, the permittee is not required to restart the unit for the sole purpose of performing the monitoring. Using electronic or written mail, the permittee shall notify the Department's Enforcement Section of a delay in emission tests prior to the deadline for accomplishing the tests. Upon recommencing operation, the permittee shall submit any pertinent pre-test notification requirements set forth in the current version of the Department's Standard Operating Procedures For Use Of Portable Analyzers in Performance Test, and shall accomplish the monitoring.</i>	Y	Have any such notices been sent to NMED?	No such notices needed or sent in 2017.
B108.D	<i>The requirement for monitoring during any monitoring period is based on the percentage of time that the unit has operated. However, to invoke monitoring period exemptions at B108.D(2), hours of operation shall be monitored and recorded. See details in permit if needed to review.</i>	Y	Review this practice at LANL.	LANL uses this provision for diesel generators and the combustion turbine with appropriate monitoring and recording of hours of operation.
B108.E	<i>The permittee is not required to report a deviation for any monitoring or testing in a Specific Condition if the deviation was authorized in this General Condition B108.</i>	Y	Nothing required for compliance with this condition.	
B109.A	<i>Maintain records to assure and verify compliance with the terms and conditions of this permit and any applicable requirements that become effective during the term of this permit. The minimum information to be included in these records is:</i>	Y	Review records	Records maintained as appropriate
	<i>(1) equipment identification (include make, model and serial number for all tested equipment and emission controls);</i>	Y	" "	" "
	<i>(2) date(s) and time(s) of sampling or measurements;</i>	Y	" "	" "

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>(3) date(s) analyses were performed;</i>	Y	" "	" "
	<i>(4) the company or entity that performed the analyses;</i>	Y	" "	" "
	<i>(5) analytical or test methods used;</i>	Y	" "	" "
	<i>(6) results of analyses or tests; and</i>	Y	" "	" "
	<i>(7) operating conditions existing at the time of sampling or measurement.</i>	Y	" "	" "
B109.B	<i>keep records of all monitoring data, equipment calibration, maintenance, and inspections, Data Acquisition and Handling System (DAHS) if used, reports, and other supporting information required by this permit for at least 5 years from the time the data was gathered or the reports written.</i>	Y	Review records	Records maintained as appropriate
B109.D	<i>Keep a record describing off permit changes made at this source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes.</i>	Y	Review log of off permit changes.	No such off-permit changes noted.
B109.E	<i>Keep the following records for malfunction emissions and routine and predictable emissions during startup, shutdown, and scheduled maintenance (SSM):</i>			
	<i>See details in permit if needed to review.</i>			
B110	<i>General Reporting Requirements</i>			
A	<i>Reports of required monitoring activities for this facility shall be submitted to the Department on the schedule in section A109.</i>	Y	Review semiannual monitoring report.	Monitoring is reported semiannually.
	<i>Monitoring and recordkeeping requirements that are not required by a NSPS or MACT shall be maintained on-site or (for unmanned sites) at the nearest company office, and summarized in the semiannual reports, unless alternative reporting requirements are specified in the equipment specific requirements section of this permit.</i>	Y	Review records	Records maintained as appropriate

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
B	<i>Reports shall clearly identify the subject equipment showing the emission unit ID number according to this operating permit.</i>	Y	Review of reports.	Emission unit IDs properly reported.
	<i>All instances of deviations from permit requirements, including those that occur during emergencies, shall be clearly identified in the reports required by section A109.</i>	Y	Review of reports.	One deviation reported in H1 2017 monitoring report
C	<i>Submit reports of all deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken as follows:</i>	Y	" "	Done in deviation report in 2017.
	<i>(1) Deviations resulting in excess emissions as defined in 20.2.7.7 NMAC (including those classified as emergencies as defined in section B114.A) shall be reported in accordance with the timelines specified by 20.2.7.110 NMAC and in the semiannual reports required in section A109.</i>	Y	" "	No excess emissions in 2017 deviation.
	<i>(2) All other deviations shall be reported in the semi-annual reports required in section A109.</i>	Y	" "	One deviation reported in H1 2017 monitoring report
D	<i>Submit reports of excess emissions in accordance with 20.2.7.110.A NMAC.</i>	Y	" "	" "
E	<i>Results of emission tests and monitoring for each pollutant (except opacity) shall be reported in pounds per hour (unless otherwise specified) and tons per year.</i>	Y	Standard practice	None in 2017
	<i>Opacity shall be reported in percent.</i>	Y	Standard practice	Reports and records reflect this.
	<i>The number of significant figures corresponding to the full accuracy inherent in the testing instrument or Method test used to obtain the data shall be used to calculate and report test results in accordance with 20.2.1.116.B and C NMAC.</i>	Y	Standard practice	

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>Upon request by the Department, continuous emission monitoring system (CEMS) and other tabular data shall be submitted in editable, MS Excel format.</i>	Y		No such requests made in 2017.
F	<i>At such time as new units are installed as authorized by the applicable NSR Permit, fulfill the notification requirements in the NSR permit.</i>	Y		No such installations in 2017.
G	<i>Periodic Emissions Test Reporting: The permittee shall report semi-annually a summary of the test results.</i>	Y	Review of reports.	Periodic emission tests reported in semiannual report.
H	<i>Submit an emissions inventory for this facility annually by the later of April 1 or within 90 days after the Department makes such request.</i>	Y		Annual emission inventory submitted March 27, 2017.
I	<i>Emissions trading within a facility</i>	NA		
	<i>Evaluate subsections if necessary</i>			
B111	<i>General Testing Requirements</i>			
A	<i>Compliance Tests</i>			
B	<i>EPA Reference Method Tests</i>			
C	<i>Periodic Monitoring and Portable Analyzer Requirements</i>			
	<i>Periodic monitoring utilizing a portable analyzer shall be conducted in accordance with ASTM D 6522-00.</i>			
D	<i>Test Procedures</i>			
	<i>Evaluate subsections if necessary</i>			
B112	<i>Compliance</i>			
A	<i>The Department shall be given the right to enter the facility at all reasonable times to verify the terms and conditions of this permit.</i>	Y	Standard practice	
	<i>Required records shall be organized by date and subject matter and shall at all times be readily available for inspection.</i>	Y	Standard practice	

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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>Upon verbal or written request from an authorized representative of the Department who appears at the facility, shall immediately produce for inspection or copying any records required to be maintained at the facility.</i>	Y	Standard practice	
	<i>Evaluate other subsections if necessary</i>			
B	<i>A copy of the most recent permit(s) issued by the Department shall be kept at the permitted facility or (for unmanned sites) at the nearest company office</i>	Y	Standard practice	
C	<i>Emissions limits associated with the energy input of a Unit, i.e. pounds/MMBtu, shall apply at all times unless stated otherwise in a Specific Condition of this permit and the averaging time for each emissions limit is 1 hour unless stated otherwise.</i>	Y	Information only	
D	<i>Submit compliance certification reports certifying the compliance status of this facility with respect to all permit terms and conditions, including applicable requirements on the pre-populated Form provided by the Department, and submit to the Department and to EPA at least every 12 months.</i>	Y	Review of reports.	Annual compliance certifications are submitted.
B115	<i>Stratospheric Ozone</i>			
	<i>(1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices, except for motor vehicle air conditioners (MVAC) and MVAC-like appliances. (40 CFR 82.156)</i>	NA		Part 82 Ozone Depleting Substances compliance not in scope of this review.
	<i>(2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment. (40 CFR 82.158)</i>	NA		Part 82 Ozone Depleting Substances compliance not in scope of this review.

Source Name			Source I.D. Number	
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Permit Condition Reference Number	Description of Permit Condition	Compliance (Y/N/NA)	Method of Compliance	Comments
	<i>(3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program. (40 CFR 82.161)</i>	NA		Part 82 Ozone Depleting Substances compliance not in scope of this review.
B116	<i>Acid Rain Sources</i>			
	<i>Assume not applicable - confirm</i>	NA		
B117	<i>Risk Management Plan</i>			
	<i>Check if this applies</i>	NA	LANL not subject to RMP.	

A.2 Observation Forms

The Triennial Review Team made no observations related to the Title V Air permit.

A.3 References

A.3.1 Title V Compliance References

- Los Alamos National Laboratory (LANL) (2012). Environmental Stewardship Group (May 21, 2012). *Quality Assurance Project Plan for the Air Quality Compliance Beryllium Stack Monitoring at TA-3-141 (BTF)*. Los Alamos, NM.
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- LANL (2013b). *Preventive Maintenance Instruction 403-A.006: Hot Water Boiler Annual Fireside/Waterside Inspection and Maintenance*. LANL Maintenance Plan Document. November 18. Los Alamos, NM.
- LANL (2014). *Test Notification/Protocol for Periodic Test (Portable Analyzer)*. Submitted to NMED for test on combustion turbine. November 12. Los Alamos, NM.
- LANL (2015). *Maintenance Procedure UI-PROC-76-28-010-R0. TA-09/16 Steam Plants. Annual Boiler Waterside/Fireside Checklist*. LANL Maintenance Plan Document. May 13. Los Alamos, NM.
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- LANL (2017a) *Annual Compliance Certification Report for 2016 - Title V Operating Permit P100-R2 IDEA ID No. 856 - Los Alamos National Laboratory*. January 23. Los Alamos, NM.
- LANL (2017b). *2016 Emissions Inventory Electronic Submittal*. March 22. Los Alamos, NM
- LANL (2017c). *Title V Semi-Annual Emissions Report for Permit P100-R2, July 1-December 31, 2016 AI No. 856*. March 22. Los Alamos, NM
- LANL (2017d). *Los Alamos National Laboratory First Quarter Beryllium Emissions Report January 1-March 31, 2017 Air Quality Permit No. 634-M2*. April 24. Los Alamos, NM.
- LANL (2017e). *Combined Semi-Annual Monitoring Reports for Los Alamos National Laboratory, AI No. 856, Title V Permits P100-R2 and P100-R2M1 for January 1-June 30, 2017*. August 8. Los Alamos, NM.
- LANL (2017f). *Los Alamos National Laboratory (LANL) Second Quarter Beryllium Emissions Report April 1-June 30, 2017 Air Quality Permit No. 634-M2*. August 9. Los Alamos, NM.
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- LANL (2018a). *Annual Compliance Certification Report for 2017 - AI No. 856 - Los Alamos National Laboratory (LANL) Title V Operating Permits P100-R2 and P100-R2M1*. January 23. Los Alamos, NM.
- LANL (2018b). *Semi-Annual Monitoring Report for Los Alamos National Laboratory, AI No. 856, Title V Permit P100-R2M1 for July 1-December 31, 2017*. Complete report with Attachments. February 12. Los Alamos, NM.
- Los Alamos National Laboratory and New Mexico Gas Company (January 1, 2010). *On-System Standard Transportation Contract*. Los Alamos, NM.
- New Mexico Environment Department (NMED) (1998). Air Quality Bureau. *Air Quality Permit No. 634-M2, Technical Area-3 Bldg., SM-141*. October 30. Santa Fe, NM.
- NMED (2006). *Construction Permit No: GCP-3-Rev. 1, General Permit Category: Hot Mix Asphalt Plants*. September 12. Santa Fe, NM.
- New Mexico Environment Department, Air Quality Bureau (NMED AQB) (2012). Compliance and Enforcement Section. *Periodic Monitoring Standard Operating Procedure*. September 12. Santa Fe, NM.
- NMED AQB (2017). *Title V Operating Permit No. P100-R2M1 for Los Alamos National Laboratory*. February 3. Santa Fe, NM.
- New Mexico Environment Improvement Division (1985). *Air Quality Permit No. 632, TA-35 Bldg. 213*. December 26. Santa Fe, NM.

A.3.2 Documents Reviewed for Information but not Cited

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- L. Maez and S. Miller, Los Alamos National Laboratory (1999). [Memorandum]. *Justification for Beryllium Stack Sample Filter Detection Limits*.
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- NMED AQB (2002). *Technical Permit Revision No. 1081-M1-R5, Technical Area 55*. February 21. Santa Fe, NM.
- NMED AQB (2003). *Air Quality Permit No. 2195H, Technical Area 52 Data Disintegrator*. October 22. Santa Fe, NM.
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- NMED AQB (2006). *Technical Permit Revision No. 1081-M1-R6, for Technical Area 55*. May 12. Santa Fe, NM.
- NMED AQB (2007). *Air Quality Permit No. 2195-P, Technical Area-33 Three Electrical Generators*. August 8. Santa Fe, NM.
- NMED AQB (2009). *Air Quality Permit No. 2195B-M1-R2, Technical Area 3 Power Plant*. March 5. Santa Fe, NM.
- NMED AQB (2011). *Air Quality Permit No. 2195B-M2, Technical Area 3 Power Plant*. Supersedes Permit 2195B-M1-R2. November 1. Santa Fe, NM.
- NMED AQB (2012). *Air Quality Permit No. 2195N-R2, CMRR-RLUOB Facility*. Supersedes Permit 2195N. September 25. Santa Fe, NM.
- NMED AQB (2013). *Air Quality Permit No. 2195F-R4, Technical Area 33 Generator*. Supersedes Permit 2195F-R3. October 22. Santa Fe, NM.
- NMED AQB (2015). *Title V Operating Permit No. P100-R2 for Los Alamos National Laboratory*. February 27. Santa Fe, NM.

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Appendix B Ground Water

B.1 Compliance Checklists

The Review Team used the following checklists to assess compliance with the Los Alamos National Laboratory's (LANL) Ground Water Discharge Permits and to assess the ground water monitoring program as it relates to the Hazardous Waste Facility Permit.



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B.1.1 DP-857 Checklist

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
OPERATIONAL PLAN			
General Operational Terms and Conditions			
1	The Permittees shall implement the following operational plan to ensure compliance with Sections 20.6.1 and 20.6.2 NMAC. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]	NA	Basis of compliance listed below.
2	The Permittees shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC, Subsections B and C of 20.6.2.3109 NMAC]	NA	Basis of compliance listed below.
Operational Actions with Implementation Deadlines			
3	<p>Prior to modification, expansion, decommissioning, or alteration of any facility authorized to discharge under this Discharge Permit, the Permittees shall submit to NMED a written notification detailing the proposed change. Such situations include the following (without limitation):</p> <ul style="list-style-type: none"> • Construction of an additional synthetically lined storage impoundment at the SWWS; • Significant alterations to the treatment processes at the SWWS or the SERF that could affect treated wastewater quality; and • Installation of additional mechanical evaporators at the SMEB. <p>The notification shall include design plans and specifications. NMED will review the proposed changes for conformance with the activities authorized by this Discharge Permit, the Water Quality Control Commission (WQCC) Regulations, and the WQA. Changes that conform will be approved, or approved with conditions by NMED. Should NMED determine that the proposed changes do not conform to the activities authorized by this Discharge Permit and/or constitute a modification of the Permittee's Discharge Plan, NMED will inform LANL that a Discharge Permit modification shall be required in order to proceed with the proposed change. The notification shall include design plans and specifications. NMED will review the proposed changes for conformance with the activities authorized by this Discharge Permit, the WQCC Regulations, and the WQA. Changes that conform will be approved, or approved with conditions by NMED. Should NMED determine that the proposed changes do not conform to the activities authorized by this Discharge Permit and/or constitute a modification of the Permittee's Discharge Plan, NMED will inform LANL that a Discharge Permit modification shall be required in order to proceed with the proposed change. Record drawings of completed new construction showing the "as-built" condition of the facility(s) shall be submitted to NMED after LANL's receipt of record drawings showing the completion of a construction project subject to this condition. Construction plans and specifications, supporting design calculations, and record drawings for all projects subject to this condition shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978) as well as applicable DOE and LANL Engineering Standards. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>	NA	Per interviewed LANL personnel, no modifications, expansions, decommissioning or alterations were proposed, and therefore, no notification of proposed changed had been submitted to NMED at the time of this Review.
4	Within 180 days following the effective date of this Discharge Permit (by June 14, 2017), the Permittees shall measure the thickness of the settled solids in the SWWS synthetically lined effluent storage impoundment and report the results of the solids depth measurements to NMED. The Permittees shall measure the thickness of settled solids in accordance with the following procedure or submit, for NMED approval an alternate method to measure the thickness of settled solids: a) The total surface area of the storage impoundment shall be divided into nine equal subareas. b) A settled solids measurement device (core sampler) shall be utilized to obtain one settled solids thickness measurement (to the nearest half-foot) per sub-area. c) The nine settled solids measurements shall be averaged. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.310 9 NMAC, 40 CFR Part 503]	Y	On February 26, 2017 LANL personnel sent an email to the NMED permit writer requesting approval for an alternate method of measuring depth of settled solids in the effluent storage pond. NMED approved the alternative method on February 6, 2017, which negates Permit Condition 4 (a) through (c). The alternative method is to use a 4-inch sewer camera on wheels to traverse across the bottom of the pond. The undisturbed solids were found to be less than 4 inches on April 10, 2017 and reported to NMED on April 26, 2017, thus meeting the June 14, 2017 deadline.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
5	In the event the average solids accumulation in the SWWS synthetically lined effluent storage impoundment exceeds one-third of the maximum liquid depth in the impoundment, the Permittees shall propose a plan for the removal and disposal of the solids from the storage impoundment. If required, the solids removal and disposal plan shall be submitted to NMED for approval within 120 days following the completion of the measurement of the settled solids, and shall include the following: a) A method for removal of the solids to a depth of less than six inches throughout the storage impoundment in a manner that is protective of the impoundment liner. b) A description of how the solids will be contained, transported, and disposed of in accordance with all local, state, and federal regulations, including 40 CFR Part 503. c) A schedule for completion of the solids removal and disposal project. Upon NMED approval of the solids removal and disposal plan, or approval of the plan with conditions, the Permittees shall implement the solids removal and disposal plan. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 40 CFR Part 503]	Y	According to "EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017.pdf", the settled solids observed by LANL operators on April 10, 2017 were less than 4-inches across the bottom of the pond. Therefore, no solids disposal plan was required. Nevertheless, the water and solids within the pond were pumped to the beginning of the plant. Thus the solids were eventually sent to the sludge drying beds. No disposal plan is required for this type of operational procedure. The pond appeared to be near dry during the Review site visit.
Facility Operational Conditions			
6	Treated wastewater discharged after the final treatment process at the SWWS shall not exceed the following limitation: Total Nitrogen: 10 mg/L [NMSA 1978, § 74-6-5.D, Subsections Band C of 20.6.2.3109 NMAC]	Y	Reviewed LANL Quarterly Monitoring Reports provided to NMED including laboratory results for total Nitrogen (EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant; EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant; EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant; ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant). Total Nitrogen was exceeded once (10.5 mg/L in 3rd quarter, 2015) however it was prior to issuance of this permit.
7	The Permittees shall maintain adequate access control around the SWWS, SERF, and SMEB facilities to prevent access by the general public and animals. The access controls shall be maintained throughout the term of this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]	Y	Fences and gates observed during site visit were maintained at each treatment site within LANL.
8	The Permittees shall maintain signs indicating that the wastewater at the SWWS, SERF, SMEB facilities and at NPDES outfalls 001, 13S, and 03A027 is not potable. Signs shall be posted at the Facilities' entrances and outfalls where there is potential for public contact with wastewater. All signs shall be printed in English and Spanish, and they shall remain visible and legible for the term of this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]	Y	"Non-potable water" signs in both English and Spanish were not observed at SMEB entrance or the SWWS Outfall 13S during site visit. Signs were subsequently installed post-site visit.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
9	<p>The Permittees shall maintain the impoundment liners at the SWWS and the SMEB in such a manner as to avoid conditions which could affect the structural integrity of the impoundments or impoundment liners. Such conditions include or may be characterized by the following (without limitation): • erosion damage; • animal burrows or other damage; • the presence of vegetation including aquatic plants, weeds, woody shrubs, or trees growing within five feet of the top inside edge of a sub-grade impoundment, within five feet of the toe of the outside berm of an above-grade impoundment, or within the impoundment itself; • the presence of large debris or large quantities of debris in the impoundment; • evidence of seepage; • evidence of berm subsidence; and • high wind events that could affect the SMEB. Vegetation growing around the impoundments shall be routinely controlled by mechanical removal in a manner that is protective of the impoundments liners. The Permittees shall visually inspect the impoundments and surrounding berms on a monthly basis to ensure proper maintenance. In the event that inspection reveals any evidence of damage that threatens the structural integrity of an impoundment's berm or liner, or that may result in an unauthorized discharge, the Permittees shall implement the contingency plan set forth in this Discharge Permit. The Permittees shall inspect the leak collection sumps at the SMEB for the presence of any collected liquid on a monthly basis. In the event that standing liquid is detected in any of the sumps at an elevation above the four inch horizontal drain line, the Permittees shall follow the contingency plan set forth in this Discharge Permit. The Permittees shall inspect the leak collection sumps at the SMEB for the presence of any collected liquid on a monthly basis. In the event that standing liquid is detected in any of the sumps at an elevation above the four inch horizontal drain line, the Permittees shall follow the contingency plan set forth in this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]</p>	Y	<p>All four of the 2017 Quarterly Monitoring Reports address Permit Condition 9, bulleted items. Basin inspections are reported to be conducted no less than once a month. Maintenance, such as mechanical removal of vegetation and debris, erosion, etc. , were noted in the Quarterly Monitoring Reports. The pond liner leak detection well monthly inspections were also reported. If water was above the 4-inch drain line, the water was removed and placed back in the pond. The amount of water removed was recorded and reported for each pond. A review of the 2016 and 2017 Quarterly Monitoring Reports indicates that all waters removed from the secondary liner collection vaults were less than the 80 gpd permit limit. Therefore, no contingency plan has been required. Nevertheless, LANL monitors for leaks and conducts repairs as reported in Quarterly Monitoring Reports. All leaks identified prior to the site visit were reported as pin-hole size leaks. Basin 5 was scheduled for liner repairs at the time of the site visit. At the time of the Review, LANL was waiting for appropriate weather conditions to make repairs. Reviewed: ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant (submitted Oct 22, 2015); EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (Oct. 24, 2016); EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (July 29, 2016); EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (April 28, 2016); EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017); EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017 (July 24, 2017); EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017 (Oct. 30, 2017); EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017 (Jan. 29, 2018).</p>
10	<p>The Permittees shall preserve a minimum of two feet of freeboard between the liquid level in the SWWS synthetically lined effluent storage impoundment(s) and the elevation of the top of the impoundment(s) liner. In the event that the Permittees determine that two feet of freeboard cannot be preserved in an impoundment, the Permittees shall implement the contingency plan set forth in this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]</p>	Y	<p>More than 2 feet of freeboard observed during site visit.</p>
11	<p>The Permittees shall preserve a minimum of one foot of freeboard between the liquid level in the SMEB synthetically lined evaporation impoundments and the elevation of the top of the impoundment liners. In the event that the Permittees determine that one foot of freeboard cannot be preserved in the impoundments, the Permittees shall implement the contingency plan set forth in this Discharge Permit. (NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109NMAC]</p>	Y	<p>More than 1 foot of freeboard observed during site visit.</p>
12	<p>The Permittees shall properly manage all solids generated at the SWWS and the SERF to maintain effective operation by removing solids as necessary in accordance with accepted process control methods. Solids removed from the Facilities shall be contained, transported, and disposed of offsite or beneficially reused in accordance with all local, state, and federal regulations. The Permittees shall maintain records of solids disposal at a location accessible for review and inspection by NMED upon request. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109NMAC]</p>	Y	<p>Solids handling at the SWWS includes composting. Composting results in Class A biosolids, which have no restriction on use. Non-composted biosolids are sent to a permitted land fill or land application area. Solids generated by the filter press at the SERF are disposed as special waste (non-hazardous) at a permitted facility. Waste manifests are stored at the SWWS and SERF and are available for NMED review.</p>

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
13	The Permittees shall utilize operators, certified by the State of New Mexico at the appropriate level, to operate the wastewater collection, treatment, and disposal systems. The operations and maintenance of all or any part of the wastewater collection, treatment, and disposal systems shall be performed by, or under the direct supervision of, a certified operator. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 20.7.4NMAC]	Y	There are 6 operators certified by the State of New Mexico per records reviewed for the wastewater collection, treatment, and disposal systems. These operators operate and/or supervise activities.
MONITORING AND REPORTING			
<i>General Monitoring and Reporting Terms and Conditions</i>			
14	The Permittees shall conduct the monitoring, reporting, and other related requirements listed below in accordance with the methods, procedures, and other conditions listed below. [NMSA 1978, § 74-6-5.D, Subsections 8 and C of 20.6.2.3109 NMAC, 20.6.2.3107 NMAC]	Y	See below.
15	METHODOLOGY - Unless otherwise approved in writing by NMED, the Permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents: a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, through current Editions); b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste; c) U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey; d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water; e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition; f) EPA Publication SW-846, or the latest methods for monitoring pursuant to Resource Conservation and Recovery Act regulations published in the Federal Register; and g) Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy [Subsection 8 of 20.6.2.3107 NMAC]	Y	Sampling and analysis are conducted according the methods listed in (a) through (g). Analyses are conducted by a laboratory certified by South Carolina Department of Health and Environmental Control Environmental Laboratory Accreditation Program. This certification dictates that the laboratory analyze samples in accordance with the methods authorized in this Permit. Sampling methods are outlined in the Interim Facility Ground Water Monitoring Plan (IFGMP Monitoring Plan for 2018). Reviewed epc-do-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant.pdf; EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant.pdf; EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant.pdf; ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant.pdf; EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017.pdf
16	The Permittees shall submit quarterly monitoring reports to NMED. Quarterly monitoring shall be performed during the following periods and submitted as follows: January 1st through March 31st (first quarter) - due by May 1st ;• April 1st through June 30th(second quarter) - due by August 1st ;• July 1st through September 30th (third quarter) - due by November 1st ; and October 1st through December 31st (fourth quarter) - due by February 1st [NMSA 1978, § 74-6-5.D, Subsections 8 and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]	Y	Quarterly Monitoring Reports reviewed were provided to NMED according to Permit schedule. Reviewed: ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant (submitted Oct 22, 2015); EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (Oct. 24, 2016); EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (July 29, 2016); EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (April 28, 2016); EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017); EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017 (July 24, 2017); EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017 (Oct. 30, 2017); EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017 (Jan. 29, 2018).

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
<i>Monitoring Actions with Implementation Deadlines</i>			
17	Within 180 days following the effective date of this Discharge Permit (by June 14, 2018), the Permittees shall sample the soil within ten feet of the SMEB northeast and northwest synthetically lined impoundments. The Permittees shall collect one composite soil sample consisting of six soil core samples at a depth of 0 to 6 inches from locations approved by NMED. The composite soil sample shall be analyzed for Inorganic Contaminants and Radioactivity listed in Attachment I of this Discharge Permit. Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program and analyzed in accordance with the methods authorized in the Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring report. Radioactivity listed in Attachment I of this Discharge Permit. Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program and analyzed in accordance with the methods authorized in the Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring report. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107NMAC].	Y	Soil samples collected March 8, 2017 within ten feet of the SMEB northeast and northwest synthetically lined impoundments. Reported six core samples (0" to 6" deep) were composited. Analytical results provided by a NELAP certified lab, GEL. Analytical results reported in 2nd quarter 2017 Quarterly Monitoring Report. All parameters were below protective concentration levels.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
<i>Facility Monitoring Conditions</i>			
18	The Permittees shall implement the flow measurements set forth accordance with the following conditions. [NMSA 1978, § 74-6-5.0 , Subsections B and C of 20.6.2.3109 NMAC]	Y	See below
19	The Permittees shall measure the totalized, average daily, and peak daily volume of raw wastewater (influent) discharged to the SWWS from the collection system each month using a primary measuring device (flume or weir equipped with head sensing and data logging mechanisms) located prior to the entrance works. The totalized, average daily, and peak daily discharge volumes received for each month shall be submitted to NMED in the quarterly monitoring reports. [NMSA 1978, § 74-6-5.0 , Subsections Band C of 20.6.2.3109 NMAC]	Y	Observed Parshall flume flow measuring device at SWWS influent channel during Review site visit. Totalized, average daily, and peak daily flow were measured monthly and results included in Quarterly Monitoring Reports for 2016 and 2017. Reviewed EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017.pdf; EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017.pdf; NPDES Outfall 13S - No discharge.
20	The Permittees shall measure the totalized, average daily, and peak daily volume wastewater discharged from NPDES outfall 001 and NPDES outfall 13S each month using a primary measuring device (flume or weir equipped with head sensing and data logging mechanisms). The totalized, average daily, and peak daily discharge volumes discharged from the NPDES outfall 001 and NPDES outfall 13S each month shall be submitted to NMED in the quarterly monitoring reports. For any flow measurement location where no discharge occurs for a complete calendar month, the Permittees shall report: "no discharge." [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109NMAC]	Y	Observed Parshall flume flow measuring device at Outfall 001 during Review site visit. Totalized, average daily, and peak daily flow were measured monthly and results included in Quarterly Monitoring Reports for 2016 and 2017. There has never been a discharge through Outfall 13S according to LANL operator. Reviewed: ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant (submitted Oct 22, 2015); EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (Oct. 24, 2016); EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (July 29, 2016); EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (April 28, 2016); EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017); EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017 (July 24, 2017); EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017 (Oct. 30, 2017); EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017 (Jan. 29, 2018).
21	The Permittees shall measure the volume of wastewater discharged or transferred to the following locations each month using totalizing flow measurement devices or by calculation where noted: • Treated wastewater discharged from the SWWS synthetically lined treated wastewater storage impoundment(s) to the SERF and the Reuse Tank; • Treated wastewater from the SWWS and industrial wastewater from other sources transferred to the SERF; • Blended wastewater transferred from the SERF to the Strategic Computing Complex Cooling Towers; • Blended wastewater transferred from the SERF to the Power Plant Boiler; • Blended wastewater discharged, by calculation, from SERF to NPDES outfall 001; • RO reject and process wastewater discharged from the SERF to the SMEB; and • Strategic Computing Complex Cooling Towers blow-down wastewater discharged to NPDES outfall 03A027, NPDES outfall 001, SWWS, and SERF. The Permittees shall obtain readings from the total flow measurement devices on a monthly basis and calculate the monthly discharge volume for each location. The monthly meter readings and calculated monthly discharge volumes shall be submitted to NMED in the quarterly monitoring reports. For any flow measurement location where no discharge occurs for a complete calendar month, the Permittees shall report: "no discharge." [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]	Y	Site personnel interviewed and the 2016 and 2017 Quarterly Monitoring Reports reviewed indicate that wastewater volumes measured / calculated monthly were reported to NMED as required. NPDES Outfall 13S - No discharge. Enclosure 1 of each Quarterly Monthly report includes a table listing all the required flow volumes listed in permit condition. There was no flow reported for Outfall 03A027 since that flow is going to Outfall 001. Reviewed: ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant (submitted Oct 22, 2015); EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (Oct. 24, 2016); EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (July 29, 2016); EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (April 28, 2016); EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017); EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017 (July 24, 2017); EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017 (Oct. 30, 2017); EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017 (Jan. 29, 2018).

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
22	Flow measurement devices located at the SWWS influent, the SERF blended wastewater transfer, the SERF RO reject, Strategic Computing Complex Cooling Towers blow-down, NPDES outfall 001, and NPDES outfall 13S shall be capable of having their accuracy ascertained under actual working (field) conditions. A field calibration method or an alternative method shall be developed for each flow measurement device and that method shall be used to check the accuracy of each respective device. Properly installed hydraulic structure primary flow measurement devices do not need to be calibrated, but shall serve as the calibration instrument for head sensing and data logging mechanisms. [NMSA 1978, § 74-6-5.D, Subsections Band C of 20.6.2.310 9 NMAC]	Y	The flowrate accuracy of the measurement devices at each location can be checked using the methods developed by LANL for each device as documented in each inspection report. LANL personnel provided all the calibration reports required by this permit with the exception of the Strategic Computing Complex cooling tower purge (scheduled for 2nd quarter of 2018). The flow rate measurement accuracies were verified at the flow measurement device by a qualified person. Flow totalizer calibrations are performed monthly by using a timer, instrument readings, and calculations. Inline flow meters were checked for accuracy using a GE hand-held, strap-on, mag. flow meter. All reported flow meter accuracies were less than 5% of the actual flow rate.
	Field calibrations shall be performed upon repair or replacement of a flow measurement device and, at a minimum, on an annual basis. Flow measurement devices shall be calibrated to within plus or minus 10 percent of actual flow, as measured under field conditions.	NA	Calibrations are done annually and results are recorded in inspection reports. No replacements or repairs have been noted in inspection reports.
	Field calibrations or alternative methods shall be performed by an individual knowledgeable in flow measurement and in the installation and operation of the particular device in use.	Y	Staff doing calibrations are trained in flow measurement the procedures used. Training records are kept by the LANL EHS.
	A written flow measurement device calibration report shall be prepared for each device at the calibration frequency required.	Y	Annual calibration reports were prepared for 2017 calibrations of all 6 locations with exception of Strategic Computing Complex cooling tower purge, which is scheduled for 2018.
	The flow measurement device calibration report shall include the following information:	Y	The reports included all of the required elements.
	a) The location and flow measurement device identification.	Y	The reports included all of the required elements.
	b) The method of flow measurement device field calibration employed.	Y	The reports included all of the required elements.
	c) The measured accuracy of each flow measurement device prior to adjustment indicating the positive or negative offset as a percentage of actual flow as determined by an in-field calibration check.	Y	The reports included all of the required elements.
	d) When an adjustment is necessary, the measured accuracy of each flow measurement device following adjustment indicating the positive or negative offset as a percentage of actual flow.	NA	No adjustments required.
	e) Any flow measurement device repairs made during the previous year or during field calibration.	NA	No repairs required.
	The Permittees shall maintain records of flow measurement device calibrations at a location accessible for review by NMED upon request.	Y	Flow calibration reports are maintained at the SWWS.
23	The Permittees shall visually inspect all flow measurement devices on a routine basis for evidence of malfunction. If a visual inspection indicates a flow measurement device is not functioning as required by this Discharge Permit, the Permittees shall repair or replace the device within 60 days of discovery and perform a field calibration in accordance with the requirements of this Discharge Permit. [NMSA 1978 , § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]	Y	According to LANL personnel all discharge flow measurement devices are visually inspected daily. In addition, all flow measuring devices monitored electronically are reviewed daily (computer monitor). Malfunction of a flow measurement device is assigned as a high priority for repair (within 1 week). No malfunction of any flow measuring device was noted per review of documentation provided by LANL.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
24	The Permittees shall maintain a monthly log detailing the transfer of domestic wastewater and septage from all domestic wastewater holding tanks, portable toilets, and septic tanks located within LANL to the SWWS. The log shall include the following information: • The specific origin of the wastewater and septage (e.g. domestic wastewater holding tank, portable toilet, or septic tank designation); • The estimated volume of wastewater and septage; and • Location of disposal within the SWWS collection system. The permittees shall maintain the monthly domestic wastewater transfer logs at a location accessible for review by NMED upon request.[NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC, Subsections B and C of 20.6.2.3109 NMAC]	Y	Reviewed LANL holding tank and septic tank pumping records for January through March 2018. The hauled wastewater was discharged to the influent of the SWWS. The log reports include the source of the wastewater and the amount of wastewater. The logs are maintained at the SWWS.
25	The Permittees shall maintain a monthly log detailing the transfer of wastewater to the SWWS, SERF, and SMEB from the following sources: • Monitoring well drilling, development, and rehabilitation wastewater;• Monitoring well sampling purge water;• Monitoring well pump test water;• Treated groundwater from remediation system(s) as approved by NMED; and• Other LANL related sources as approved by NMED. The log shall include the following information:• The specific origin of the wastewater (e.g. well designation or remediation system);• Type of wastewater (e.g. drilling, development, rehabilitation, pump testing, purge, or treated groundwater);• A brief summary of the wastewater characteristics, noting parameters that exceed the limits listed in Attachment 1 and Attachment 2 of this Discharge Permit (when available);• The estimated or metered volume of wastewater; and The facility (SWWS, SERF, or SMEB) to which the wastewater was transferred and the manner of transfer. A copy of each monthly wastewater transfer log for the monitoring period shall be submitted to NMED in the quarterly monitoring reports. When no transfer occurs for a complete calendar month, the Permittees shall report: "no transfer".[NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC, Subsections B and C of 20.6.2.3109 NMAC]	Y	Quarterly Monitoring Reports for 2017, Enclosure 1 include a table for reporting the transfer of wastewater to the SWWS, SERF and SMEB for the ground water sources, including remediation of ground water referenced in this condition. "No transfer" of wastewater was reported in the last row of Enclosure 1 (table) for each calendar month during 2017 (i.e., each monthly log summarized in the last row of the table reported "No transfer"). Monthly logs are maintained at the SWWS. Reviewed EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017.pdf; EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017; EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017.pdf; EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017.pdf
26	The Permittees shall perform quarterly groundwater sampling in alluvial monitoring well SCA-3 and analyze the samples for dissolved total Kjeldahl nitrogen (TKN), nitrate as nitrogen (NO3-N), total dissolved solids (TDS), and chloride (Cl): SCA-3, intended to be located hydrologically downgradient of NPDES outfalls 001 and 03A027. Groundwater sample collection, preservation, transportation, and analysis shall be performed according to the following procedure: a) Measure the depth-to-most-shallow groundwater from the top of the well casing to the nearest hundredth of a foot. b) Purge three well volumes of water from the well prior to sample collection. c) Obtain samples from the well for analysis. d) Properly prepare, preserve, and transport samples. e) Analyze samples in accordance with the methods authorized in this Discharge Permit. Depth-to-most-shallow groundwater measurements, analytical results, laboratory QA/QC summary report, and a facility layout map showing the location and identification of the monitoring well shall be submitted to NMED in the quarterly monitoring reports.[NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC]	Y	Ground water was below bottom of well screen during quarterly sampling events for all of 2017. Therefore, no ground water was available to sample or analyze. The well (SCA-3) screen captures water within the alluvial that was expected to contain water released from upstream of NPDES outfall 001. The well screen depth was approved by NMED. Reviewed EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017.pdf; EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017; EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017.pdf; EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017.pdf
27	The Permittees shall collect samples of the discharges and analyze the samples in accordance with the following conditions. [NMSA 1978, § 74-6-5.D, Subsections Band C of 20.6.2.3109 NMAC]	See below	

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
28	<p>The Permittee shall sample and analyze discharges from the SWWS, SMEB, and outfalls. The sample collection points and points of compliance for respective discharge locations are as follows: SWWS treated wastewater - Discharge from the re-use wet well after the chlorine contact chamber Outfall 13S - Discharge after the Parshall Flume at outfall Outfall 001 - Discharge after the Parshall Flume at outfall Outfall 03A027 - Discharged from the outfall pipe or a suitable sampling location SMEB - Basin water column [NMSA 1978, § 74-6-5.0, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]</p>	Y	<p>Permit condition 28 requires sampling and analysis for the 3 outfalls and the SMEB water columns. This condition does not specify which constituents need analysis. NMAC 20.3.2.3103 (referenced in 20.6.2.3109) lists maximum concentration levels for human health protection for discharges to ground water (<10,000 mg/L TDS). LANL reported the analytical results for those constituents listed in Conditions 31 through 35, which include the human health constituents of concern. The human health constituents for SMEB were not analyzed because the water within the SMEB does not meet the discharge condition described in NMAC 20.3.2.3103. There is no discharge from the SMEB to ground water. Reviewed: ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant (submitted Oct 22, 2015); EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (Oct. 24, 2016); EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (July 29, 2016); EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (April 28, 2016); EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017); EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017 (July 24, 2017); EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017 (Oct. 30, 2017); EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017 (Jan. 29, 2018).</p>
29	<p>On a quarterly basis, the Permittees shall collect grab samples of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, NPDES outfall 13S, and NPDES outfall 03A027 and analyze the samples for TKN NO3-N, TDS, and Cl. Samples shall be properly prepared, preserved, transported, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring reports. For any sampling location where no discharge occurs for a complete quarter, the Permittees shall report: "no discharge." [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]</p>	Y	<p>LANL provided laboratory analytical results for TKN, NO3+NO2-N, TDS, and Cl in each of the Quarterly Monitoring Reports for 2016 and 2017. There were no discharges from Outfalls 13S and 03A027. LANL analyzed for NO3+NO2-nitrogen. The permit required an analysis for NO3-N. According to interviews with LANL personnel, LANL contacted the NMED permit writer on March 7, 2018 regarding acceptance of the NO3+NO2-nitrogen analysis rather than the NO3-N analysis. NMED Ground Water Quality Bureau had no objections to DOE/LANS submitting NO3+NO2-N results in lieu of NO3-N results since the former is more conservative; however, this was not documented in writing. Reviewed: ENV-DO-15-0301-M Hunter DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant (submitted Oct 22, 2015); EPC-DO-16-306-M Hunter Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (Oct. 24, 2016); EPC-DO-16-206-M Hunter Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (July 29, 2016); EPC-DO-16-101-M Hunter Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant (April 28, 2016); EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017); EPC-DO-17-273 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017 (July 24, 2017); EPC-DO-17-439 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017 (Oct. 30, 2017); EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017 (Jan. 29, 2018).</p>

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
30	<p>Within 90 days of the effective date of this Discharge Permit (by March 16, 2017) and annually thereafter, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for TKN, NO3-N, TDS, and Cl. Samples shall be properly prepared, preserved, transported, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring reports due by February 15 and August 15 of each year. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]</p>	Y	<p>Composite samples were collected (March 8, 2017) and reported in EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017). LANL analyzed for NO3+NO2-nitrogen. The permit required an analysis for NO3-N. LANL contacted the NMED permit writer on March 7, 2018 regarding acceptance of the NO3+NO2-nitrogen analysis rather than the NO3-N analysis. The NMED Ground Water Quality Bureau had no objections to DOE/LANS submitting NO3+NO2-N results in lieu of NO3-N results because the former is more conservative. Reviewed: EPC-DO-17-161 Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017 (April 26, 2017).</p>
31	<p>On a semi-annual basis, the Permittees shall collect 24-hour flow weighted composite samples (except where noted) of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, and NPDES outfall 13S, and a grab sample of wastewater discharged from NPDES outfall 03A027. All samples shall be analyzed for the following inorganic constituents:</p> <ul style="list-style-type: none"> • aluminum • arsenic • barium • boron • cadmium • manganese • molybdenum • mercury • pH (instantaneous) • nickel • chromium • cobalt • copper • cyanide • fluoride • iron • lead • radioactivity: combined radium-226 & radium- 228 • selenium • silver • sulfate • uranium • zinc 	Y	<p>Composite sample was collected at NPDES outfall 001 and analytical results for listed constituents were included in 2017 Quarterly Monitoring Reports. No samples were collected from NPDES Outfalls 13S and 03A027 because no effluent was discharged to these outfalls during the monitoring period. pH results were not included in the Quarterly Monitoring Reports. Observation 14 notified LANL of the pH issue and this observation was subsequently resolved.</p>

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	Samples shall be filtered, properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring reports. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]	Y	A NELAP certified laboratory was used for analysis. Analytical results were below permit limits. Samples for metals were not filtered. Filtering would possibly lower the analytical results. LANL reported an informal approval from NMED for not filtering the metal sample. Per LANL, sampling and analysis plan will be amended and submitted to NMED for approval to filter water samples for metals with the exception of mercury. The permit limit for mercury is total mercury (unfiltered). Permit language should be changed to reflect agreement with NMED.
32	During the years of 2018 and 2020, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for the following inorganic constituents:	NA	Requirement timeframe not yet triggered.
	• aluminum		
	• arsenic		
	• barium		
	• boron		
	• cadmium		
	• chromium		
	• cobalt		
	• copper		
	• cyanide		
	• fluoride		
	• iron		
	• lead		
	• manganese		
	• molybdenum		
	• mercury		
	• pH (instantaneous)		
	• nickel		
	• radioactivity: combined radium-226 & radium-228		
	• selenium		
	• silver		
	• sulfate		
	• uranium		
	• zinc		
	Samples shall be filtered, properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring reports due by February 1, 2019 and February 1, 2021. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]	NA	Requirement timeframe not yet triggered.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance	
33	On an annual basis, the Permittees shall collect grab samples of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, NPDES outfall 13S, and NPDES outfall 03A027. The samples shall be analyzed for the following organic constituents:			
	• benzene			
	• benzo-a-pyrene			
	• carbon tetrachloride			
	• chloroform			
	• 1,1-dichloroethane			
	• 1,2-dichloroethane (EDC)			
	• 1,1-dichloroethylene (1,1-DCE)			
	• ethylbenzene			
	• ethylene dibromide (EDB)			
	• methylene chloride	Y	Grab samples were collected from the SWWS wet well and NPDES outfall 001; there were no discharges from Outfalls 13S and 03A027 to sample or analyze. Reviewed laboratory analytical results provided in EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017, Enclosure 2, which confirms analysis of all of the listed constituents.	
	• PAHs: total naphthalene plus monomethylnaphthalenes			
	• phenols			
	• polychlorinated biphenyls (PCBs)			
	• toluene			
	• 1, 1,2,2-tetrachloroethane			
	• 1,1,2,2-tetrachloroethylene(PCE)			
	• 1,1,1-trichloroethane			
	• 1, 1,2-trichloroethane			
	• 1,1,2-trichloroethylene (TCE)			
	• vinyl chloride			
	• xylenes (total)			
	Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit.	Y		Reviews of a portion of the laboratory reports indicate samples were properly prepared, preserved, and transported with some exceptions. Samples were analyzed by an independent, NELAP accredited laboratory (GEL Laboratory LLC). The lab noted in its reports whether samples were preserved properly. Occasionally, samples were not preserved with acid. Some sample containers arrived damaged. The lab reports sometimes noted quality control issues with matrix analytical interferences, which is not unusual for some ground water samples. Overall, a review of the data does not warrant any major changes in the standard operating procedures for sample preparation, preservation, and transportation.
	Analytical results shall be submitted to NMED in the monitoring report due by February 1st of each year. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107.A NMAC]	Y		Laboratory results submitted January 29, 2018.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
34	During the years of 2018 and 2020, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for the following organic constituents:	NA	The 2018 sample had not been collected at the time of this Review.
	• benzene		
	• benzo-a-pyrene		
	• carbon tetrachloride		
	• chloroform		
	• 1,1-dichloroethane		
	• 1,2-dichloroethane (EDC)		
	• 1,1-dichloroethylene (1,1-DCE)		
	• phenols		
	• polychlorinated biphenyls (PCBs)		
	• toluene		
	• 1,1,2,2-tetrachloroethane		
	• 1,1,2,2-tetrachloroethylene(PCE)		
	• 1,1,1-trichloroethane		
	• 1,1,2-trichloroethane		
	• ethylbenzene		
	• ethylene dibromide (EDB)		
	• methylene chloride		
• PAHs: total naphthalene plus monomethylnaphthalenes			
• 1,1,2-trichloroethylene (TCE)			
• vinyl chloride			
• xylenes (total)			
	Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring report due by February 1, 2019 and February 1, 2021. [NMSA 1978, § 74-6-5.D, Subsections Band C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]	NA	The 2018 sample had not been collected at the time of this Review.
35	On an annual basis, the Permittees shall collect grab samples of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, NPDES outfall 13S, and NPDES outfall 03A027. The samples shall be analyzed for the following toxic pollutants:	Y	Grab samples were collected from SWWS (reuse wet well) and NPDES outfall 001 and laboratory analytical results were reviewed as provided in: EPC-DO-18-023 Letter M. Hunter Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017, Enclosure 2, Table 3. There were no discharges to sample or analyze for NPDES outfalls 13S and 03A027. Reviewed analytical results submitted to NMED in the 2017 4th Quarterly Monitoring Report submitted prior to February 15th deadline.
	acrolein		
	acrylonitrile		
	aldrin		
	benzidine		

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	chlordanes		
	chlorinated benzenes: monochlorobenzene, hexachlorobenzene, pentachlorobenzene		
	1,2,4,5-tetrachlorobenzene		
	chlorinated ethanes; hexachloroethane		
	chlorinated phenols: 2,4-dichlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol		
	chloroalkyl ethers: bis(2-chloroethyl) ether, bis(2-chloroisopropyl) ether, and bis(chloromethyl) ether		
	DDT		
	dichlorobenzene		
	dichlorobenzidine		
	dichloropropenes		
	hexachlorocyclopentadiene		
	high explosives (HE)		
	2,4-dinitrotoluene (2,4-DNT)		
	2,6-dinitrotoluene (2,6-DNT) octahydro-1,3,5,7-tetraazapentacyclohept-1,3,5,7-tetrazocine (HMX)		
	hexahydro-1,3,5-trinitro-1,3,5-triazine (ROX)		
	2,4,6-trinitrotoluene (TNT)		
	isophorone		
	methyl tertiary butyl ether		
	nitrobenzene		
	nitrophenols 2,4-dinitro-o-cresol dinitrophenols		
	nitrosamines: N-nitrosodiethylamine, N-nitrosodimethylamine, N-nitrosodibutylamine, N-nitrosodiphenylamine, and N-nitrosopyrrolidine		
	pentachlorophenol		
	perchlorate		
	phthalate esters: dibutyl phthalate, di-2-ethylhexyl phthalate, diethyl phthalate, and dimethyl phthalate		
	dieldrin		
	di phenyl hydrazine		
	endosulfan		
	endrin		
	halomethanes; bromodichloromethane, bromomethane, chloromethane, dichlorodifluoromethane, dichloromethane, tribromomethane, and trichlorofluoromethane		
	heptachlor		
	hexachlorobutadiene		
	hexachlorocyclohexane (HCH): alpha-HCH, beta-HCH, gamma-HCH, and technical HCH		

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	polynuclear aromatic hydrocarbons (PAH): anthracene, 3,4-benzofluoranthene, benzo (k) fluoranthene, fluoranthene, fluorene phenanthrene, pyrene		
	toxaphene		
	cis-1,2-dichloroethylene		
	trans-1,2-dichloroethylene		
	naphthalene		
	1-methylnaphthalene		
	2-methylnaphthalene		
	Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring report due by February 15st of each year. Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit.	N	Reviews of a portion of the laboratory reports indicate samples were properly prepared, preserved, and transported with some exceptions. Samples were analyzed by an independent, NELAP accredited laboratory (GEL Laboratory LLC). The lab noted in its reports whether samples were preserved properly. Occasionally, samples were not preserved with acid. Some sample containers arrived damaged. The lab reports sometimes noted quality control issues with matrix analytical interferences, which is not unusual for some ground water samples. Overall, a review of the data does not warrant any major changes in the standard operating procedures for sample preparation, preservation, and transportation.
	Analytical results shall be submitted to NMED in the monitoring report due by February 1st of each year. [NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]	Y	The 2016 Annual Report was submitted January 30, 2017.
36	Once during the year of 2018, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for the following toxic pollutants:		
	acrolein		
	acrylonitrile		
	aldrin		
	benzidine		
	chlordane		
	chlorinated benzenes: monochlorobenzene and hexachlorobenzene		
	hexachlorocyclopentadiene		
	high explosives (HE)		
	2,4-dinitrotoluene (2,4,DNT) 2,6-dinitrotoluene (2,6,DNT)		
	octrahydro-1,3,5,7-tetranitro-1,3,5,7 tetrazocine (HMX)		
	hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)		
		NA	The 2018 sample had not been collected at the time of this Review.

Permit Section	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
Contingency Plans			
	This section of the permit requires that certain actions be taken or that plans be developed in the event of an exceedance of a standard or screening level, or the occurrence of certain other events defined in the permit, or if requested by NMED.		None of the triggering events have occurred and no contingency plans have been actuated, or requested by the NMED prior to the Review.
Closure Plan			
	This section gives the requirements upon the permanent closure of permitted facilities.		All of the facilities are currently operating and these requirements have not been triggered.
General Terms and Conditions			
49	Record Keeping. Maintain written records of the following:	Y	
	a) information and data used to complete the application for this Discharge Permit		Stored in office within TA-59
	b) any releases (commonly known as "spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC		Qualifying spills reported to NMED. Documentation stored at SWWS.
	c) the operation, maintenance, and repair of all facilities/equipment used to treat, store, or dispose of wastewater		Documentation stored at SWWS.
	d) facility record drawings (plans and specifications) showing the actual construction of the facility and bear the seal and signature of a licensed New Mexico professional engineer		Stored by the Engineering Services-Utilities & Infrastructure Group.
	e) copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit		Monitoring reports are stored at the SWWS and also available on the EPRR.
	f) the volume of wastewater or other wastes discharged pursuant to this Discharge Permit		Available in Quarterly monitoring reports
	g) groundwater quality and wastewater quality data collected pursuant to this Discharge Permit		Available in Quarterly monitoring reports
	h) copies of construction records (well logs) for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit		No wells are associated with this permit.
	i) the maintenance, repair, replacement, or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit		Available in annual calibration reports.
	j) data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit, including the following		Written records are available in the following:
	<ul style="list-style-type: none"> the dates, location and times of sampling or field measurements 		Daily log
	<ul style="list-style-type: none"> the name and job title of the individuals who performed each sample collection or field measurement 		Chain of custody
	<ul style="list-style-type: none"> the sample analysis date of each sample 		Chain of custody
	<ul style="list-style-type: none"> the name and address of the laboratory, and the name of the signatory authority for the laboratory analysis 	Laboratory reports	
	<ul style="list-style-type: none"> the analytical technique or method used to analyze each sample or collect each field measurement 	Laboratory reports	
	<ul style="list-style-type: none"> the results of each analysis or field measurement, including raw data 	Laboratory reports	
	<ul style="list-style-type: none"> the results of any split, spiked, duplicate or repeat sample 	Laboratory reports	
	<ul style="list-style-type: none"> a copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used 	Laboratory reports	
	The written record shall be maintained by the Permittees at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection, or measurement and shall be made available to the department upon request		These records are stored at the SWWS.

B.1.2 DP-1793 Checklist

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
III. Authorization to Discharge	Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the permittee to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein. Up to 350,000 gallons per day of treated groundwater derived from individual projects (including the Chromium Project), pumping tests, aquifer tests, well development and tracer studies conducted to characterize groundwater quality or aquifer properties may be discharged via land application to one of 55 sections identified in tabular format and Figure provided as Attachment to this permit. [20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection C of 20.6.2.3109 NMAC]	Y	Reviewed annual reports for 2016 (Annual Monitoring Report 2016 DP 1793) and 2017 (Annual Monitoring Report 2017 DP 1793). The 350,000 gpm irrigation limit was exceeded one time on September 15, 2015 when 370,418 gallons were discharged through irrigation. Additional administrative controls were initiated in response. Active irrigation sites observed during the Review: Zones 1 through 4 (total zones) for treated chromium plume water; and Zone 9 irrigated with RDX treated water. No signs of runoff to unpermitted areas were observed. Irrigation has never occurred at the remaining 8 irrigation zones (each for RDX treated water).
IV. Conditions	The following conditions shall be complied with by the permittee and are enforceable by NMED. The permittee is authorized to discharge water contaminants subject to the following conditions:		
IV.A. Operational Plan	Terms and Conditions		
	1. The permittee shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 1 and 2 NMAC. [Subsection C of 20.6.2.3109 NMAC]		Title 20, Chapter 6, Parts 1 and 2 NMAC [Subsection C of 20.6.2.3109 NMAC] are the governing regulations regarding the issued permit.
	2. The permittee shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC, Subsection C of 20.6.2.3109 NMAC]		The permit is written by NMED to address NMED 20.6.2.3101 (purpose of rule) and 20.6.2.3102 (water quality contaminate limits). Water quality limits are repeated in the permit.
	3. Prior to initiating discharge from an individual project, pumping test, aquifer test or tracer study, the permittee shall submit a workplan to NMED for approval. Included in the workplan will be:	Y	Reviewed Work Plan 4 submitted to NMED for approval: WLANL DP1793 (March 23, 2016) ; EPC-DO-17-050 Letter M. Hunter DP1793 Workplan 5; NMED - DP1793 Workplan 5 Approval with conditions - final revised - 06-15-17; EPC-DO-17-051 Letter M. Hunter DP1793 Workplan 6 (March 17, 2017); EPC-CP-QP-010 Land Application of Ground Water (February 27, 2017). Each work plan addressed the permit elements as noted in the sections below.
	• a detailed description of the proposed activity, including a statement of purpose;	Y	Each of the following work plans reviewed provided description of proposed activity and statement of purpose: EPC-DO-17-050 Letter M. Hunter DP1793 Workplan 5 (Enclosure 1, pages 1-3); ; EPC-DO-17-051 Letter M. Hunter DP1793 Workplan 6 (Enclosure 1, pages 1-3). Purpose and objectives are also discussed throughout the 2018 Interim Facility Wide Groundwater Monitoring Plan (IFWGMP).
	• a description of water conservation and reuse options considered;	Y	Water conservation and reuse options are addressed in Workplans 5 (Enclosure 1, page 19) and 6 (Enclosure 1 page 12). During the Review LANL personnel described their plans to reuse all the water discharged through Outfall 001 with the exception of a few gpm to provide water for a downstream wetland.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
	<ul style="list-style-type: none"> a topographic map showing the proposed land application sites and the location of all monitoring wells, Site Monitoring Areas (SMA), Solid Waste Management Units (SWMU), National Pollution Discharge Elimination System (NPDES) outfalls, groundwater discharge permits, Areas of Concern (AOC) identified in the 2005 NMED Order on Consent, drinking water wells, surface impoundments and surface drainage features in the vicinity; 	Y	Work Plan 5, Enclosure 3 and Work Plan 6, Enclosure 5 provide the required maps.
	<ul style="list-style-type: none"> existing data showing the depth to and general groundwater quality at the proposed discharge location including concentrations of contaminants exceeding regulatory standards; 	Y	Work Plan 5, Enclosure 6 and Work Plan 6, Enclosure 6 provide the required data.
	<ul style="list-style-type: none"> estimated groundwater flow direction; 	Y	Work Plan 5, Item 3, page 7 and Work Plan 6, Item 2, page 6 provide required data.
	<ul style="list-style-type: none"> a detailed description of the on-site treatment system to remove contaminants of concern from the effluent; 	Y	Work Plan 5, Enclosure 1 and Work Plan 6, Enclosure 1 provide required information.
	<ul style="list-style-type: none"> a schematic of treatment system and treatment unit specifications; 	Y	Work Plan 5, Enclosure 7 and Work Plan 6, Enclosure 2 provide required information.
	<ul style="list-style-type: none"> a detailed descriptions of the storage/containment systems associated with the treatment; 	Y	Work Plan 5, Enclosure 1 and Work Plan 6, Enclosure 1 provide required information.
	<ul style="list-style-type: none"> Safety Data Sheets for tracer constituents; 	NA	No tracer study has been performed under DP-1793. All tracer studies have occurred under a separate Notice of Intent.
	<ul style="list-style-type: none"> a maximum estimated daily discharge volume; 	Y	According to Workplans 5 and 6 the estimated maximum daily discharge will vary, but will be less than 350,000 gallons per day. Actual discharge volumes reported in Annual Monitoring Report 2016 DP 1793, Enclosure 2.
	<ul style="list-style-type: none"> total estimated volume of the proposed discharge; 	Y	Provided in Workplans 5 (Table 1) and 6 (Table 1). Actual discharge volume reported in Annual Monitoring Report 2016 DP 1793, Enclosure 2.
	<ul style="list-style-type: none"> a proposed sampling plan to demonstrate treatment efficiency and compliance with regulatory standards; Proposed method(s) of land application, application rates and area of application; and 	Y	Addressed in Workplans 5 (Encl. 1, #7) and 6 (Encl. #8). Also, provided in EPC-CP-QP-010 Land Application of Ground Water.
	<ul style="list-style-type: none"> a project schedule including the date the discharge is to commence and anticipated duration. 	Y	Workplans 5 and 6 state the irrigation will start after the Workplans are approved until permit expiration. Actual irrigation dates provided in Annual Monitoring Report 2016 DP 1793, Enclosure 2.
	<p>Public comments on each work plan shall be accepted by NMED for a period not exceeding 30 days following posting of the workplan by the permittees to the EPRR (Condition 12). The workplan shall be enacted as approved by NMED including specific monitoring requirements that may be required. [20.6.2.3107.A NMAC]</p>	Y	Workplan 5 posted to EPRR from (May 2015) to (June 2015) for public comment. Approval by NMED granted (October 15, 2015). Workplan 6 posted to EPRR from (March 2017) to (May 2017) for public comment. Approval by NMED granted June 23, 2017.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
	4. Land application of treated groundwater will be conducted in accordance with, but not limited to, the following criteria.	See below	See responses for each criteria below. Observed active irrigation zones (5). Zones 1 through 4 are used for treated chromium plume water. Zone 9 was irrigated with RDX treated water. The other 8 irrigation zones (all RDX areas) have never been irrigated. Reviewed work plans/site maps as approved by NMED. LANL DP1793 Work Plan 4.pdf; EPC-DO-17-050 Letter M. Hunter DP1793 Workplan 5.pdf; NMED - DP1793 WP5 Approval w-conditions - final revised - 06-15-17.pdf; EPC-DO-17-051 Letter M. Hunter DP1793 Workplan 6; EPC-CP-QP-010_Land Application of Ground Water;
	[20.6.2.3107 NMAC) 1. Land application is prohibited at the following locations:		All land application zones mapped / approved by NMED as presented in Work Plan 5, Enclosure 3; Workplan 6, Enclosure 5. LANL placed signs where each irrigation zone begins and ends. During site visit, observed signage for land application zones and areas prohibited for land application due to presence of cultural resources.
	• Watercourses;		Reviewed Workplans, mapped locations and observed 5 land application zones. No land application on watercourses identified as also reported during interviews.
	• Water Bodies;		Reviewed Workplans, mapped locations, and observed 5 land application zones. No land application on water bodies identified as also reported during interviews.
	• Wetlands;		Reviewed Workplans and mapped locations and observed 5 land application zones. No land application on wetlands identified.
	• Areas of Concern (AOC) with the exception of the following canyon-bottom AOCs: C-00-001 through C-00-019 and C-00-02;	Y	Reviewed Workplans, mapped locations and observed 5 land application zones. No land application on AOCs identified except as noted in permit.
	• Solid Waste Management Units (SWMUs);		Reviewed Workplans, mapped locations and observed 5 land application zones. No land application on SWMUs identified as reported during interviews.
	• Slopes greater than 2% if the site is poorly vegetated (<50% ground cover); and		Reviewed Workplans, mapped locations and observed 5 land application zones. No land application on slopes greater than 2% that are <50% vegetated. No irrigation has occurred on land with slopes greater than 5% per interview. These areas are also identified in Workplans 5 and 6.
	• Slopes greater than 5% if the site is well vegetated (>50% ground cover).		
	2. Land application cannot result in water flow from an approved land application site.		Reviewed Workplans, mapped locations and observed 5 land application zones. No evidence of irrigation water leaving permitted areas observed during Review.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
	3. Land application cannot create ponds or pools or standing water.		Observed conditions at representative sample of land application zones and no ponding, pooling or standing water observed.
	4. Land application must be conducted in a manner that maximizes infiltration and evaporation.		Site personnel indicated that spraying is conducted per work plan to maximize infiltration and evaporation.
	5. Land application is restricted to daylight hours and for a maximum of 10 hr/day.		Site personnel indicated that application is restricted to daylight operating hours 8 a.m. to 5 p.m., Monday through Friday.
	6. Land application must be supervised.		Per interview, land application sites are supervised.
	7. Land application cannot extend off LANL property without written permission from the land owner.		All application sites are located on LANL gated property (no public access) as outlined in Workplans 5 and 6 and confirmed with site personnel.
	8. Land Application will be re-located if leaks in the application system are detected.		No leaks have ever been detected per site interviews. Only applicable to Workplan 5, Zone 4. Zone 4 is the only non-truck irrigation area (mobile water jets).
	9. Land application is prohibited when precipitation is occurring or when temperatures are below freezing.		Site personnel interviewed indicated that land application does not occur during precipitation events or below freezing conditions.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
IV.B. Monitoring, Reporting, and other Requirements	5. The permittee shall conduct the monitoring, reporting, and other requirements listed below.(20.6.2. 3107 NMAC]	See below	See below
	6. METHODOLOGY - Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents.	Y	Methods for 6. a through g followed; all reported analytical results provided by an independent, NELAP certified laboratory: GEL Laboratories LLC.
	a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th or current)		
	b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste		
	c) U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey		
	d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31.Water		
	e) Federal Register, latest methods published for monitoring pursuant to Resources Conservation Recovery Act regulations		
	f) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition		
	g) Methods of Soil Analysis: Part L Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; and Part 3. Chemical Methods, American Society of Agronomy. 20.6.2.3107.B NMAC\C]		
	7. Laboratory analysis requirements will be established prior to discharge (Condition #3) and unless approved otherwise by NMED, will be conducted by an independent environmental laboratory, certified under the National Environmental Laboratory Accreditation Program (NELAP). [Subsection A of 20.6.2.3107 NMAC and Subsection D of 20.6.2.3107 NMAC]	Y	All reported analytical results provided by an independent, NELAP certified lab: GEL Laboratories LLC.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
	8. Following completion of an approved workplan, discharge permittees will submit a report within 60 days of completing the discharge. Discharge reports shall include:		Reviewed Discharge Reports: Annual Monitoring Report 2016 DP 1793 and Annual Monitoring Report 2017 DP 1793. Reports and interviews indicate each submitted within 60 days of sampling. Discharge reports included analytical results; volume; average application rates; and map: (LANL DP1793 Work Plan 4; EPC-DO-17-050 Letter M. Hunter DP1793 Workplan 5; NMED - DP1793 Workplan 5 Approval with conditions - final revised - 06-15-17; EPC-DO-17-051 Letter M. Hunter DP1793 Workplan 6; EPC-CP-QP-010 Land Application of Ground Water.) By letter dated May 24, 2016 (Annual Monitoring Report 2016, page 10) NMED approved Workplan 3 with the condition: Six months prior to the end of the term of the discharge permit (July 27, 2020) and at the termination of discharge and final closure under the requirements of DP-1793, the Permittees shall measure total chromium in soils from a representative location in each land application zone. The land application zones are the irrigated areas within TA-05 (chromium plume area). Therefore, since sampling is not required at this time, reporting has not occurred.
	The total volume of groundwater discharged;		
	an estimated average application rate for the period of discharge;	Y	
	analytical results from samples collected under the water quality sampling plan or soil sampling, if required by NMED (Condition #3); and		
	a map depicting areas which received land applied groundwater. [20.6.2.3107 NMAC]		
	9. The permittee shall submit annual monitoring report to NMED by the 1st of March each year summarizing all discharges conducted under this permit during the prior calendar year. Included will be quantity, source, and date of each individual discharge, water quality tables listing analytical results from samples collected under the water quality sampling plan, a map(s) depicting discharge locations, and copies of laboratory analytical reports.	Y	Reviewed Annual Monitoring Report 2016 DP 1793 and Annual Monitoring Report 2017 DP 1793. Reports and interviews indicate each submitted prior to March 1st per this condition. Discharge reports included quantity, source, and date of each individual discharge, water quality tables listing analytical results from samples collected under the water quality sampling plan, map depicting discharge locations, and copies of laboratory analytical reports.
	Annual monitoring reports shall be performed during the following period:	See below	See below
	January 1st through December 31st report due by March 1st.	Y	Report dates and interviews indicate each submitted prior to March 1st per this condition.
	10. Groundwater quality monitoring shall be conducted in accordance to the Interim Facility-Wide Groundwater Monitoring Plan (most recent version), which is conducted under the direction of the NMED Hazardous Waste Bureau. In some cases, NMED Groundwater Quality Bureau may request additional analytes or wells be added to the sampling regime in cases where specific locations, constituents or monitoring may not be included in the Interim Facility Wide Groundwater Monitoring Plan. f20.6.2.3 07 NMAC]	Y	The ground water monitoring schedules, sampling locations, parameters analyzed, and reporting described in Workplans 5 and 6 are consistent with 2018 Interim Facility-Wide Groundwater Monitoring Plan.
	11. Sampling of surficial soils may be required by NMED at areas of land application of treated groundwater. At NMED's direction, soil samples collected shall be submitted for analysis in accordance with Condition #6 of this permit by a NELAP certified independent environmental laboratory, and results compared to the Residential Soil screening levels of Table A-1. [20.6.2.3107 NMAC]	NA	Per Workplan 5, Enclosure 2, NMED approval letter dated May 31, 2016 (page 2), soil sampling is not required until 2020. Per site personnel interview, no other soil testing has been requested by NMED to date.
	12. ELECTRONIC POSTING - MANDATORY Commencing on the Effective Date of this Discharge Permit the permittees shall, within seven calendar days of submittal to NMED, post on LANL's Electronic Public Reading Room located at http://epr.lanl.gov/oppie/service (or as updated) the following submittals to NMED.	Y	According to EPRR LANL personnel, all documents are added to the EPRR in approximately 72 hours after the document is sent to NMED, which is the date stamped on the document.
	1. Condition 3 -Submittal of workplan for individual discharge to NMED.	Y	Workplans 3, 4, 5, and 6 posted to EPRR.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
	2. Condition 8 - Discharge (Workplan Completion) Report to NMED.	NA	Annual Monitoring Reports posted to EPRR. Monitoring reports document discharges. Workplans 4, 5, and 6 completions have not occurred as of the Review, therefore, Workplan Completion Report has not yet been submitted.
	3. Condition 13 - Notification of groundwater exceedance and submittal of Corrective Action Plan to NMED.	NA	Ground water exceedances have not occurred according to LANL interviews conducted, therefore notifications have not been required nor Corrective Action Plans submitted to NMED.
	4. Condition 14- Soil Sampling exceedance workplan.	NA	By letter dated May 24, 2016 NMED approved Workplan 3 with the condition: Six months prior to the end of the term of the discharge permit (July 27, 2020) and at the termination of discharge and final closure under the requirements of DP-1793, the Permittees shall measure total chromium in soils from a representative location in each land application zone. The land application zones are the irrigated areas within TA-05 (chromium plume area). Therefore, since sampling is not required at this time, posting is not applicable at this time.
	5. Condition 17 - Release ("Spill") notification, corrective action report/plan and any abatement proposal.	NA	Per records reviewed and interviews conducted: no releases/spills have occurred since the permit was issued, hence no reporting required.
	ELECTRONIC POSTING - VOLUNTARY Commencing on the effective date of this Discharge Permit, permittees voluntarily agree to post on LANL's Electronic Public Reading Room located at http://eprl.lanl.gov/oppie/service (or as updated) within seven calendar days after submission to NMED the information listed below. Because permittees have voluntarily agreed to post the below-information, such posting shall not be subject to civil or criminal enforcement actions.	See below	Per interview with EPRR LANL personnel, postings to the EPRR typically occur within 72 hours from the time the information is sent to the NMED.
	1. Condition 3- NMED Response to Workplan Submittals	Y	NMED approval letters are incorporated into the 2016 and 2017 Annual Monitoring Reports which are posted on the EPRR.
	2. Condition 9 - Annual monitoring report - due March 1.	Y	The Annual Monitoring Reports for 2016 and 2017 were posted to EPRR February 27, 2017 and February 26, 2018, respectively.
	3. Condition 15 -Improperly constructed groundwater well notification.	NA	According to LANL personnel there has been no improperly construction ground water well notification sent to NMED.
	4. Condition 16 - Groundwater well not hydrologically downgradient notification.	NA	According to LANL personnel there has been no notification of a ground water well not hydrologically downgradient sent to NMED.
	5. Condition 18- Notification of failure of discharge plan	NA	According to LANL personnel there has been no notification of failure of discharge plan sent to NMED.
	6. Condition 19 - Closure and post-closure activities - all documents submitted to the NMED by the permittees under this Condition.	NA	Per interviews and records reviewed, no closure activities have been conducted, therefore, no closure or post closure activities have been reported / posted to EPRR.

Permit Section	Permit Requirements	Compliance (Y/N/NA)	Basis of Compliance
	7. Condition 23 - Modifications and/or amendments - all documents submitted to the NMED by the permittees under this Condition.	Y	All permit modifications/amendments have been uploaded to the EPRR.
	8. Condition 24 -Plans and specifications - all documents submitted to the NMED by the permittees under this Condition.	Y	Design drawings for ground water wells are included in Workplans 5 and 6 which are posted on the EPRR.
	9. Condition 28 - Right to appeal - all documents submitted to the Water Quality Control Commission by the permittees under this Condition.	NA	According to LANL personnel there has been no appeal of permit conditions sent to NMED.
	10. Condition 29 - Transfer of discharge permit - all documents submitted to the NMED by the permittees under this Condition. [20.6.2.3 107 .A NMAC]	NA	According to LANL personnel there has been no transfer of discharge permit request sent to NMED.

B.1.3 DP-1589

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
PART 1:	AUTHORITY				
1.1	AUTHORITY	This Permit is issued pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.		NA	Statement of Authority
1.2	PERMITTEES AND PERMITTED ACTIVITY	The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit, DP- 1589, to the United States Department of Energy and the Los Alamos National Security.		NA	Permit acknowledged.
1.6	PERMIT ACTIONS				
1.6.1	Duration of Permit	Pursuant to Paragraph (4) of Subsection H of 20.6.2.3109 NMAC, the term of the Discharge Permit shall be five years from the effective date. The term of this Discharge Permit will end on July 22, 2021.		NA	Permit remains active.
1.6.2	Permit Modification	NMED requests that the permittee submit an application for renewal (or renewal and modification) at least 180 days prior to the date the Discharge Permit term ends.		NA	Permit remains active.
1.6.3	Reserved				
1.6.4	Permit Suspension, Termination, and Revocation and Re-Issuance	Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of groundwater quality, and that more stringent requirements to protect groundwater quality may be required by NMED. The Permittees may be required to implement abatement of water pollution and remediate groundwater quality.		NA	Statement of NMED Authority to suspend/terminate/revoke.
PART 2:	FINDINGS				
2.1	Discharge of effluent or leachate	The Permittees are discharging effluent or leachate from the facilities so that such effluent or leachate may move directly or indirectly into groundwater within the meaning of Section 20.6.2.3104 NMAC.		NA	
2.2	TDS of ground water = 10,000 mg/L	The Permittees are discharging effluent or leachate from the facilities so that such effluent or leachate may move into groundwater of the State of New Mexico that has an existing concentration of 10,000 mg/L or less of TDS within the meaning of Subsection A of 20.6.2.3101 NMAC.		NA	
2.3	Exemptions	The discharge from the facilities is not subject to any of the exemptions of Section 20.6.2 .3105 NMAC.		NA	
PART 3:	AUTHORIZATION TO DISCHARGE				
3.1		Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the Permittees to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein. The Permittees are authorized to discharge up to a total of 4,840 gpd of domestic wastewater to the following 8 4 septic tank-disposal systems:	TA-33-0179, TA-33-0375, TA-39-0132, TA-58-0052	Y	As reviewed with site personnel, the volume of wastewater discharged is less than a total of 4,840 gpd for the four named septic tank-disposal systems. Also documented in Semi-Annual Monitoring reports: EPC-DO:17-052 (Jan.30, 2017), EPC-DO:17-275 (Jul. 24, 2017), and EPC-DO:18-037 (Jan. 29, 2018).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
3.2		Inactive septic tank-disposal systems may be activated, active septic tank-disposal systems may be deactivated, and additional septic tank-disposal systems may be constructed and placed in operation in accordance with this Discharge Permit, provided the sum of the domestic wastewater discharge volumes from the systems does not exceed 4,840 gpd and the systems are located within Sections 18, 19, 21, 22, 24, 30, 33, 34, and 36, Township 19N, Range 06E; Sections 4, 13, and 24, Township 18N, Range 06E; and Sections 19 and 20, Township 18N, Range 07E, Los Alamos County. [NMSA 1978, § 74-6-5.D, 20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection C of 20.6.2.3109 NMAC]		Y	Verified (interview and visit) the only active septic systems are TA-33-0179, TA-33-0375, TA-39-0132, TA-58-0052, with less than 4,840 gpd and located as specified.
PART 4:	CONDITIONS				
4.A	Operational Plan Condition 1.)	1.) The Permittees shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 2 and 4 NMAC. [NMSA 1978, § 74-6-5.D, Subsection C of 20.6.2.3109 NMAC]		See below	See below
4.A	Operational Plan Condition 2.)	2.) The Permittees shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [NMSA 1978, § 74-6-5.D, 20.6.2.3101 NMAC, 20.6.2.3103 NMAC, Subsection C of 20.6.2.3109 NMAC]		Y	Reviewed sampling results and inspection, maintenance and pumping records with site personnel during the on-site Review documenting compliance with standards and requirements of NMAC Sections 20.6.2.3101 and 20.6.2.3103.
4.A	Operational Actions with Implementation Deadlines	3). Within 180 days of the effective date of this Discharge Permit (by January 18, 2017), the Permittees shall provide access to the TA-16-0178 septic tank by installing, at a minimum, one 24-inch opening. The access opening(s) shall be located above the inlet and outlet piping of the septic tank to facilitate inspection of the tank's interior, repair of the internal piping, and removal of sludge and scum. The access opening(s) shall be extended from the tank to at least three inches above the ground surface or as approved by NMED. The access opening(s) shall have a secured lid to deter unauthorized access but the lid shall remain above ground, unconcealed by dirt or pavement. A secure lid shall consist of one of the following: a padlock; a twist lock cover requiring special tools for removal; a cover weighing 58 pounds or more, net weight; or a stainless steel hinge and hasp mechanism. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109]	TA-16-0178	NA	Permit Condition 3 not applicable to septic tank disposal system TA-16-0178 that was converted to a domestic wastewater holding tank. Amendment reviewed with site personnel; conversion documentation provided in Permit Amendments Letter: EPC-DO-16-367 (Dec. 21, 2016). NMED issued amended Permit, documentation provided in Discharge Permit Amendment (Mar. 3, 2017).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.A		<p>4). Within 180 days of the effective date of this Discharge Permit (by January 18, 2017), the Permittees shall submit a work plan to NMED for approval for the replacement of the seepage pits located at the TA-33-0031 septic tank-disposal system with a subsurface disposal system and for the repair of the TA-49-0118 septic tank-disposal system's evapotranspiration bed. The work plan shall include the following:</p> <p>a) Drawings and sizing calculations for the proposed TA-33-0031 replacement subsurface disposal system.</p> <p>b) A description of the proposed repairs to the TA-49-0118 evapotranspiration bed, including:</p> <ol style="list-style-type: none"> 1. Removal of trees and woody brush growing within the bed or in an area within five feet of the bed that could damage the system, and; 2. Repair of the holes in the synthetic liner. <p>c) A schedule for completion of the seepage pits' replacement and evapotranspiration bed repair, not to exceed two years beyond the effective date of this Discharge Permit (by July 22, 2018).</p> <p>The Permittees shall implement the work plan upon NMED approval. Record drawings of the disposal system and evidence that the evapotranspiration bed repairs have been completed shall be submitted to NMED within 30 days of the completion of the project(s). [Subsections A and C of 20.6.2.1202 NMAC, Subsection C of 20.6.2.3109 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>	TA-33-0031, TA-49-0118	NA	Permit Condition 4 not applicable to septic tank disposal systems TA-33-0031, and TA-49-0118 that were converted to domestic wastewater holding tanks. Amendments reviewed with site personnel; conversion documentation provided in Permit Amendments Letter: EPC-DO-16-367 (Dec. 21, 2016). NMED issued amended Permit, documentation provided in Discharge Permit Amendment (Mar. 3, 2017).
4.A	Operational Actions with Implementation Deadlines Condition 5.)	<p>5). Within 90 days of the effective date of this Discharge Permit (by October 20, 2016), the Permittees shall close the seepage pit located at TA-39-0089.</p> <p>[Subsections A and C of 20.6.2.1202 NMAC, Subsection C of 20.6.2.3109 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>	TA-39-0089	Y	The seepage pit (TA-39-0089) was closed September 27, 2016 as reviewed with site personnel. Documentation provided in Closure Report: EPC-DO-16-309 (Oct. 10, 2016).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.A	Operational Actions with Implementation Deadlines Condition 6.)	<p>6). Within 180 days of the effective date of this Discharge Permit (by January 18, 2017) the Permittees shall submit a work plan to conduct water tightness testing on the following active septic tanks authorized for use under this Discharge Permit.</p> <ul style="list-style-type: none"> a) TA-16-0178 which consists of a 380 gallon septic tank. b) TA-33-0031 which consists of a 1,360 gallon septic tank. c) TA-33-0179 which consists of a 1,000 gallon septic tank. d) TA-39-0132 which consists of a 1,000 gallon septic tank. e) TA-49-0118 which consists of a 1,000 gallon septic tank. <p>Prior to re-activating septic tank-disposal systems TA-15-0205, TA-16-1194/1195, TA- 33-0096, and TA-36-0274, the Permittees shall complete water tightness testing on each septic tank. The inspections and tests shall be performed by a qualified evaluator pursuant to Paragraph (2), Subsection B of 20.7.3.903 NMAC.</p> <p>Each inspection shall be performed according to the following procedure.</p> <ul style="list-style-type: none"> a) The contents of the unit shall be pumped and disposed of in accordance with all local , state, and federal regulations , including 40 CFR Part 503. b) The interior of the unit shall be inspected to determine the construction material, interior dimensions, and mechanical integrity. Inspection findings shall be recorded. c) The condition of the interior of the unit shall be photographically documented while the unit is empty. Water-tightness testing shall be completed using one of the two following procedures. 	<p>TA-16-0178, TA-33-0031, TA-33-0179, TA-39-0132, TA-49-0118, TA-15-0205, TA-16-1194/1195, TA-33-0096, TA-36-0274</p>	<p>Y</p>	<p>Permit Condition 6 not applicable to septic tank disposal systems TA-16-0178, TA-33-0031, and TA-49-0118 which were converted to domestic wastewater holding tanks. Amendments reviewed with site personnel; conversion documentation provided in Permit Amendments Letter: EPC-DO-16-367 (Dec. 21, 2016). NMED issued amended Permit, documentation provided in Discharge Permit Amendment (March 3, 2017). NMED waved Permit Condition 6 (per phone conversation between NMED and LANL on Aug.10, 2016) if tightness testing on septic tank systems TA-33-0179 and TA-39-0132 was completed by January 28, 2017. Tightness testing for TA-33-0179 and TA-39-0132 was completed on Sept. 22, 2016. Tightness testing reviewed with site personnel, certified test results provided in Tightness Testing Completion Report: EPC-DO-17-002 (Jan.18,2017).</p>

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.A	Operational Actions with Implementation Deadlines Condition 6.1)	<p>1) Hydrostatic testing shall be conducted using the following procedure:</p> <ul style="list-style-type: none"> a) Plug the inlet and outlet piping of the unit. b) Fill the unit with water to the normal operating level. c) Measure the water level. d) Allow the water to stand for 60 minutes without the addition of water. e) Measure the water level at the end of 60 minutes. <p>A unit that does not allow a drop in water level of greater than 0.01 feet in 60 minutes is considered to be water-tight.</p> <p>-OR-</p> <p>2) Vacuum testing shall be conducted using the following procedure:</p> <ul style="list-style-type: none"> a) Seal all openings to the unit. b) Apply a vacuum of 50 millimeters (mm) of mercury to the unit. c) Allow the unit to stand for two minutes without the application of additional vacuum. <p>A unit that maintains at least 90% of the vacuum (i.e., greater than 45 mm of mercury) after two minutes is considered to be water-tight.</p> <p>Within two years of the effective date of this Discharge Permit (by July 22, 2018), the Permittees shall submit a final report on the inspections and testing for the above listed active septic tanks to NMED. The report shall include the date of each inspection and test, the name of the individuals that conducted each test, written inspection findings for each system, photographic documentation of each tank's interior, and water-tightness test results if required.</p> <p>In the event that water-tightness testing of a septic tank reveals that a unit is not water tight, or that inspection of a septic tank-disposal system reveals damage to the unit that could result in structural failure, the Permittees shall notify NMED in the final inspection and test report required above.</p> <p>Upon written notification from NMED that corrective action is necessary to repair or replace a leaking or damaged unit, the Permittees shall implement the corrective actions set forth in the Contingency Plan Condition #24.</p> <p>[NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>	TA-33-0179, TA-39-0132	Y	Septic tank systems TA-39-0132 and TA-33-0179 were hydrostatically tested for tightness on Sept. 22, 2016 and the interiors inspected on Dec. 13 and 14, 2016; respectively. Tightness testing and interior inspection records reviewed with site personnel; certified test results and photodocumentation of inspections provided in Tightness Testing Completion Report: EPC-DO-17-002 (Jan.18, 2017).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.A		<p>7). Prior to installing a new septic tank-disposal system or replacing an existing septic tank disposal system, the Permittees shall notify NMED. If requested by NMED, the Permittees shall submit plans and specifications for the new septic tank-disposal system which comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978) as well as applicable DOE and LANL Engineering Standards to NMED for approval. Where plans and specifications are not required by NMED, the Permittees shall submit a diagram and sizing calculations for the new septic tank-disposal system. Construction of a new septic tank-disposal system shall not commence without prior written approval by NMED.</p> <p>After written approval from NMED is received, the Permittees shall notify NMED at least five working days prior to installation of a new septic tank-disposal system to allow NMED personnel to be onsite for inspection. Where NMED has required the submission of plans and specifications which comply with the New Mexico Engineering and Surveying Practice Act, the Permittees shall submit record drawings of the septic tank disposal system and associated collection system piping (as applicable) to NMED within 30 days of system installation or replacement. Where plans and specifications have not been required, the Permittees shall submit a diagram of the septic tank-disposal system and associated collection system piping (as applicable) to NMED within 30 days of system installation or replacement.</p> <p>Construction plans and specifications, supporting design calculations, and record drawings shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978) as well as applicable DOE and LANL Engineering Standards. [Subsections A and C of 20.6.2.1202 NMAC, Subsection of 20.6.2.3109 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>	TA-16-0178, TA-33-0031, TA-33-0179, TA-39-0132, TA-49-0118, TA-15-0205, TA-16-1194/1195, TA-33-0096, TA-36-0274	Y	Since the Permit was issued (Jul, 22,2016) and at the time of the on-site Review, LANL has had no plans to install any new septic tank disposal systems. Septic tank disposal systems TA-16-0178, TA-33-0031, and TA-49-0118 were converted to domestic wastewater holding tanks. Notification to NMED of the septic tank disposal system replacements reviewed with site personnel; conversion documentation provided in Permit Amendments Letter: EPC-DO-16-367 (Dec. 21, 2016). NMED issued amended Permit, documentation provided in Discharge Permit Amendment (Mar. 3, 2017).
4.A		<p>8). At least 30 days prior to re-activating an inactive septic tank-disposal system, the Permittees shall notify NMED in writing of the system to be re-activated. The written notification shall contain the results of the water tightness inspection and testing required in Condition #6.</p> <p>[NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>		NA	Since the Permit was issued (Jul, 22,2016) and at the time of the on-site Review, LANL has had no plans to re-activate any inactive septic tank disposal system.
4.A	Operating Conditions Condition 9.)	<p>9). The Permittees shall visually inspect the area above all leachfields and the evapotranspiration bed (disposal systems) semi-annually to ensure proper maintenance. Any conditions that indicate damage to the disposal systems shall be corrected. Such conditions include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Erosion damage; • Animal activity or animal damage; • The presence of vegetation, such as trees or woody shrubs growing within any leach field, evapotranspiration bed, or in an area within five feet of any evapotranspiration bed; or • Evidence of seepage or surfacing wastewater. <p>In the event of a failure of any disposal system, the Permittees shall implement the Contingency Plan set forth in Condition #22 of this Discharge Permit.</p> <p>[NMSA 1978, § 74-6-5.D, Subsections A and D of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>	TA-16-0178, TA-33-0031, TA-33-0179, TA-39-0132, TA-49-0118, TA-15-0205, TA-16-1194/1195, TA-33-0096, TA-36-0274	Y	The leachfields for the active septic tank disposal systems (TA-33-0179, TA-33-0375, TA-39-0132, and TA-58-0052) were visually inspected on March 2, 2018. None of these systems showed evidence of animal activity, vegetation encroachment, damage from erosion, seepage or surfacing. In addition, semiannual inspection records of all active and inactive septic tank disposal systems were reviewed with site personnel; visual inspection records are provided in leachfield Inspections Memorandum and on Forms: EPC-DO-16-388 (Dec.15, 2016), EPC-DO-17-087 (Jun. 9, 2017 and Oct 24, 2017).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.A	Operating Conditions Condition 10.)	10). The Permittees shall inspect the active septic tank(s) in systems TA-33-0031 and TA-33-0375 semi-annually for the accumulation of scum and solids. All other active septic tanks authorized to discharge under this Discharge Permit shall be inspected every two years. In the event that the scum layer exceeds three inches or the settled solids occupy 30% or more of the tank volume, the contents of the tank shall be pumped by a qualified hauler. The Permittees shall maintain a log of solids removal, including the date, the volume of solids removed, and method and place of disposal. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]	TA-33-0179, TA-33-0031, TA-33-0375, TA-39-0132, and TA-58-0052	Y	NMED waved the first semiannual scum and solids inspection for septic tank system TA-33-0375 required by Permit Condition 10 because the system had been pumped and inspected (Jul. 16, 2016) just prior to the issuance of the Permit (Jul. 22, 2016). NMED approval documented via email (Nov. 16, 2016). Due to lack of accuracy in scum/solids measuring devices and safety concerns, LANL requested Permit Condition 10 be amended to annual pumping of the active septic tank disposal systems (TA-33-0179, TA-33-0375, TA-39-0132, and TA-58-0052) and visual inspection of the interior of the tanks for signs of deterioration. Pumping and interior inspection records are provided to NMED. Documentation provided in Condition 10 Proposed Amendment Letter: EPC-DO:17-300 (Aug. 15, 2017). NMED issued amended Permit, documented in Discharge Permit Amendment (Aug. 31, 2017). Annual pumping logs and visual inspection records of the tank interiors reviewed with site personnel, documentation provided in Semi-Annual Monitoring Reports: EPC-DO:17-052 (Jan. 30, 2017) and EPC-DO:18-037 (Jan. 29, 2018).
4.B	Monitoring and Reporting	11). The Permittees shall conduct the following monitoring, reporting, and other requirements listed below in accordance with the monitoring requirements of this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]		Y	As reviewed with site personnel all samples and analyses are collected and analyses performed per the methods prescribed in Permit Condition 12. In addition, all laboratories used for environmental compliance samples are National Environmental Laboratory Accreditation Program (NELAP) certified.
4.B	Monitoring and Reporting Condition 12.)	12). METHODOLOGY - Unless otherwise approved in writing by NMED, the Permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents. a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (181 \ 19th or current) b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste c) U.S. Geological Survey, Techniques for Water Resource Investigations of the U.S. Geological Survey d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition f) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations g) Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3107 NMAC]		Y	As reviewed with site personnel, all samples and analyses are collected and analyses performed per the methods prescribed in Permit Condition 12. In addition, all laboratories used for environmental compliance samples are National Environmental Laboratory Accreditation Program (NELAP) certified.

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.B	Monitoring and Reporting Condition 13.)	13). The Permittees shall submit semi-annual monitoring reports to NMED for the most recently completed semi-annual period by the 1st of February and August of each year. Semi-annual monitoring shall be performed during the following periods and submitted as follows: <ul style="list-style-type: none"> January 1st through June 30th (first half)- due by August 1st July 1st through December 31st (second half) - due by February 1st [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC]		Y	As reviewed with site personnel, semi-annual monitoring reports submitted to NMED by August 1st and February 1st since the effective date of the discharge permit (Jul. 22, 2016). Documentation provided in Semi-Annual Monitoring Reports: EPC-DO:17-052 (Jan.30, 2017), EPC-DO:17-275 (Jul. 24, 2017), and EPC-DO:18-037 (Jan. 29, 2018).
4.B	Monitoring Actions with Implementation Deadlines Condition 14.)	14). Within 180 days following the effective date of this Discharge Permit (by January 18, 2017), the Permittees shall install totalizing flow meters at the potable water supply for all buildings served by septic tank-disposal systems TA-33-0031 and TA-33-0375 to estimate the volume of wastewater discharged to these septic tank-disposal systems. Confirmation of meter installation, type, calibration, and location shall be submitted to NMED within 30 days of each completed installation . [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]	TA-33-0031, TA-33-0375	Y	Totalizing flow meters at the potable water supply for the two buildings that discharge domestic wastewater to septic tank system TA-33-0375 were installed on Nov. 29, 2016. Confirmation of meter installation, type, calibration, and location was submitted to NMED on Dec. 23, 2016. Certified flow meter installation records were reviewed with site personnel, documentation provided in Water Meter Installations Report: EPC-DO-16-376 (Dec.23, 2016).
4.B	Monitoring Actions with Implementation Deadlines Condition 15.)	15). Within 60 days of the effective date of this Discharge Permit (by September 20, 2016), the Permittees shall review the status of all septic tank-disposal systems located on LANL property and provide a list of all active, inactive, and permanently abandoned septic tank disposal systems to NMED. [NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC]		Y	A list of all active, inactive and permanently abandoned septic tank systems was provided to NMED on Sept. 20, 2016. Yearly updated lists have been provided to NMED as reviewed with site personnel. Documentation provided in Active, Inactive and Permanently Abandoned Septic Tank Systems Letter:EPC-DO-16-249 (Sept. 20, 2016) and Semi-Annual Monitoring Reports: EPC-DO:17-052 (Jan.30, 2017) and EPC-DO:18-037 (Jan. 29, 2018).
4.B	Monitoring Actions with Implementation Deadlines Condition 16.)	16). Within 180 days of the effective date of this Discharge Permit (by January 18, 2017), the Permittees shall submit a schedule for closure of all permanently abandoned septic tank- disposal systems on LANL property on the list required by Condition #15, including septic tank TA-11-0043, septic tank TA-15-0284, septic tank TA-18-0039, septic tank TA-52-0099, and septic tank TA-69-0010 in accordance with Condition #26 of this Discharge Permit and in accordance with the June 2016 Compliance Order on Consent (Consent Order) agreed to by NMED and the United States Department of Energy. [NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC]	TA-11-0043, TA-15-0284, TA-18-0039, TA-52-0099, TA-69-0010	Y	As reviewed with site personnel, a schedule for closure of the following permanently abandoned septic tank systems TA-22-0045, TA-54-0080, TA-08-0030, TA-49-0173, TA-54-0150, TA-08-0126 was submitted to NMED on Dec. 21, 2016. The following five septic tank-disposal systems: TA-11-0043, TA-15-0284, TA-18-0039, TA-52-0099, TA-69-0010 identified by NMED in Permit Condition 16 have been characterized as potential release sites and therefore subject to closure under the June 2016 Compliance Order on Consent. Documentation provided in Closure Schedule for Permanently Abandoned Septic Tank-Disposal Systems: EPC-DO-16-387 (Dec. 21, 2016).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.B	Facility Monitoring Conditions Condition 17.)	17). On an annual basis, the Permittees shall review the status of all septic tank-disposal systems located on LANL property and provide an updated list of all septic tank-disposal systems to NMED. The list shall identify active, inactive, and permanently abandoned systems and the (updated) estimated total monthly discharge volume for all systems. The Permittees shall also submit an updated schedule for closure of all permanently abandoned septic tank-disposal systems on the annual list in accordance with the June 2016 Compliance Order on Consent (Consent Order) agreed to by NMED and the United States Department of Energy . The updated annual list and schedule for closure shall be submitted to NMED in the monitoring report due February 1st. [NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC)		Y	Yearly updated lists and schedules have been provided to NMED as reviewed with site personnel. Documentation provided in Semi-Annual Monitoring Reports: EPC-DO:17-052 (Jan.30, 2017) and EPC-DO:18-037 (Jan. 29, 2018).
4.B	Facility Monitoring Conditions Condition 18.)	18). The Permittees shall estimate the volume of wastewater discharged quarterly to septic tank-disposal systems TA-33-0031 and TA-33-0375 by recording the quarterly meter readings for the water supply of each building that is serviced by these septic tank disposal systems and calculating the quarterly water usage. The estimated quarterly discharge volume* (based upon meter readings) shall be used to calculate the average daily discharge volume by the following formula: estimated quarterly discharge volume/# of days between readings = average daily discharge volume Each quarter, the Permittees shall make note of any significant uses of the water (e.g., irrigation, evaporative cooling, or leaks) that do not contribute to the volume of wastewater discharged. The quarterly meter readings, estimated quarterly and average daily discharge volumes, and notes and estimated volume of significant uses shall be submitted to NMED in the semi-annual monitoring reports. *Should more than one flow meter exist for any septic tank-disposal system's water supply, the Permittees shall calculate the estimated quarterly discharge volume for the septic tank-disposal system by adding the estimated quarterly discharge volume for each meter. This summation should be completed prior to calculating the average daily discharge volume for the septic tank-disposal system. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsections C and Hof 20.6.2.3109 NMAC]	TA-33-0031, TA-33-0375	Y	As reviewed with site personnel, meter readings are taken monthly and reported quarterly for the water supply of each building serviced by septic tank disposal system TA-33-0375. Estimated quarterly water usage and average daily discharge volumes and notes, and estimated volume of significant uses submitted to NMED in the Semi-Annual Monitoring Reports. Documented in Semi-Annual Monitoring reports: EPC-DO:17-052 (Jan.30, 2017), EPC-DO:17-275 (Jul. 24, 2017), and EPC-DO:18-037 (Jan. 29, 2018).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.B	Facility Monitoring Conditions Condition 19.)	<p>19). The Permittees shall sample and analyze discharges from each active septic tank. Samples shall be collected at the discharge point of the septic tank prior to the disposal system. Wastewater samples shall be collected in the following manner and frequency and shall be analyzed for the following parameters:</p> <p>a) On a semi-annual basis, the Permittees shall collect a grab sample from the septic tanks in systems TA-33-0031 and TA-33-0375. The samples shall be analyzed for all contaminants listed in Attachment 1 (copy enclosed). In the event that analytical results from four consecutive semi-annual samplings of systems TA-33-0031 and TA-33-0375 are below the standards of Inorganic Contaminants, Organic Contaminants, and Radioactivity listed in Attachment 1, the Permittees are authorized to reduce the frequency of sampling from semi-annual to annual.</p> <p>b) On an annual basis, the Permittees shall collect a grab sample from the active tanks in systems TA-16-0178, TA-33-0179, TA-39-1032, TA-49-0118, and TA-58-0052. The samples shall be analyzed for TKN, TDS, and Cl.</p> <p>All samples shall be properly prepared, preserved, transported, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the semi-annual monitoring reports. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsections C and H of 20.6.2.3109 NMAC]</p>	TA-33-0031, TA-33-0375, TA-16-0178, TA-33-0179, TA-39-1032, TA-49-0118, TA-58-0052	Y	Interview and records indicate a grab sample from septic tank system TA-33-0375 is collected on a semi-annual basis and analyzed for constituents listed in Attachment 1 of the Permit. On an annual basis, a grab sample collected from the active tanks systems TA-33-0179, TA-39-1032, and TA-58-0052 is analyzed for TKN, TDS, and Cl. Sampling locations (at discharge point of each septic tank prior to disposal system) were observed during the on-site Review. Analytical results were reviewed with site personnel and are provided in the semi-annual monitoring reports as submitted to NMED by August 1st and February 1st since the effective date of the discharge permit (Jul. 22, 2016). Documented in Semi-Annual Monitoring Reports: EPC-DO:17-052 (Jan.30, 2017), EPC-DO:17-275 (Jul. 24, 2017), and EPC-DO:18-037 (Jan. 29, 2018).
4.B	Facility Monitoring Conditions Condition 20.)	<p>20). The Permittees shall submit a log of septic tank inspections and solids removal and disposal to NMED in the monitoring report due February 1st [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>		Y	Annual pumping logs and visual inspection records of the tank interiors were reviewed with site personnel, documentation provided in Semi-Annual Monitoring Reports: EPC-DO:17-052 (Jan.30, 2017) and EPC-DO:18-037 (Jan. 29, 2018).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.C	Contingency Plan Condition 21.)	<p>21). In the event that a groundwater quality standard identified in Section 20.6.2.3103 NMAC is exceeded; the total nitrogen concentration in groundwater is greater than 10 mg/L; or a toxic pollutant (defined in Subsection WW of 20.6.2.7 NMAC) is present in groundwater during the term of this Discharge Permit, upon closure of the facilities, or during the implementation of post-closure requirements, the Permittees shall propose measures to mitigate damage from the discharge including, at a minimum, source control measures and a completion schedule by submitting a corrective action plan to NMED for approval. The Permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC, should the corrective action plan not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within 180 days of confirmation of groundwater contamination. This permit condition does not apply to an exceedance of groundwater quality standard or the presence of a toxic pollutant in groundwater unrelated to a discharge associated with the facilities or defined systems in the Discharge Permit, to the extent that abatement of such groundwater contamination is occurring, or will occur, pursuant to and in accordance with the June 2016 Compliance Order on Consent (Consent Order) agreed to by NMED and the United States Department of Energy.</p> <p>[NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]</p>		Y	One -time exceedances reported to NMED for phenol and iron. These constituents would be addressed at the time of closure and coordinated with NMED at that time per condition 21. Documented in Semi-annual Monitoring Report EPC-DO: 18-037 issued Jan. 29, 2018.
4.C	Contingency Plan Condition 22.)	<p>22). In the event that an inspection of any disposal system reveals failure, the following contingency plan shall be enacted.</p> <p>a) Within 24 hours following the discovered failure, the Permittees shall:</p> <p>i) notify NMED of the failure in accordance with the notification requirements described in the Contingency Plan for unauthorized discharges; and</p> <p>ii) restrict public access to the area.</p> <p>b) The Permittees shall conduct a physical inspection of the septic tank-disposal system to identify additional potential failures.</p> <p>c) The Permittees shall propose actions to address the failure and methods of correction by submitting a corrective action plan to NMED for approval within 15 days following the discovered failure. The corrective action plan shall include a schedule for completion of corrective actions and the Permittees shall initiate implementation of the plan following approval by NMED.</p> <p>[NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>		NA	As reviewed with site personnel, no septic disposal system has failed inspection since the Permit was issued (Jul.22, 2016)..

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.C	Contingency Plan Condition 23.)	<p>23). In the event that a release (commonly known as a "spill") occurs that is not authorized under this Discharge Permit, the Permittees shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in Section 20.6.2.1203 NMAC and summarized below.</p> <p>Within 24 hours following discovery of the unauthorized discharge, the Permittees shall verbally notify NMED and provide the following information.</p> <ul style="list-style-type: none"> a) The name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility. b) The name and address of the facility. c) The date, time, location, and duration of the unauthorized discharge. d) The source and cause of unauthorized discharge. e) A description of the unauthorized discharge, including its estimated chemical composition. f) The estimated volume of the unauthorized discharge. g) Any actions taken to mitigate immediate damage from the unauthorized discharge. <p>Within one week following discovery of the unauthorized discharge, the Permittees shall submit written notification to NMED with the information listed above and any pertinent updates.</p> <p>Within 15 days following discovery of the unauthorized discharge, the Permittees shall submit a corrective action report/plan to NMED describing any corrective actions taken and/or to be taken relative to the unauthorized discharge that includes the following information.</p> <ul style="list-style-type: none"> a) A description of proposed actions to mitigate damage from the unauthorized discharge. b) A description of proposed actions to prevent future unauthorized discharges of this nature. c) A schedule for completion of proposed actions. <p>In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given pursuant to Paragraph (I) of Subsection A of 20.6.2.1203 NMAC, the Permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC.</p> <p>Nothing in this condition shall be construed as relieving the Permittees of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC.</p> <p>[NMSA 1978, § 74-6-5.D, 20.6.2.1203 NMAC]</p>		NA	As reviewed with site personnel, since the Permit was issued (Jul. 22, 2016) no spills have occurred.

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.C		<p>24). In the event that water-tightness testing of a septic tank reveals that the unit is not water tight, or that inspection of a septic tank-disposal system reveals damage to the unit that could result in structural failure, and the Permittees have received written notification from NMED that corrective action is necessary, the Permittees shall implement the following corrective actions.</p> <p>a) Within 90 days of notification from NMED, the Permittees shall repair or replace the unit. If requested by NMED, the Permittees shall submit plans and specifications for the proposed repair or replacement which comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978) as well as applicable DOE and LANL Engineering Standards.</p> <p>b) Within 30 days of repair or replacement of the unit, the Permittees shall repeat the inspection and water-tightness test to verify the effectiveness of the repair or replacement and submit a written report to NMED. The report shall include the date of the inspection and test, the name of the individual that performed the inspection and test, written inspection findings, photographic documentation of the tank interior, and water-tightness test results. If requested by NMED, the Permittees shall submit record drawings which comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978) as well as applicable DOE and LANL Engineering Standards and detail the final, actual construction of the unit(s). [NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC, 20.6.2.3109 NMAC]</p>		NA	As reviewed with site personnel, since the Permit was issued (Jul. 22, 2016) no water-tightness test has failed, or has any inspection of a septic tank-disposal system revealed damage to the unit that could result in structural failure,
4.C		<p>25). In the event that NMED or the Permittees identify any failures of the discharge plan or this Discharge Permit not specifically noted herein, NMED may require the Permittees to submit a corrective action plan and a schedule for completion of corrective actions to address the failure(s). Additionally, NMED may require a Discharge Permit modification to achieve compliance with 20.6.2 NMAC. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]</p>		NA	As reviewed with site personnel, no failures in the Discharge Plan have been observed since the Permit was issued (Jul. 22, 2016).
4.D	Closure Plan Condition 26.)	<p>26). Upon permanent abandonment or replacement of any septic tank-disposal system(s), the Permittees shall perform the following closure measures.</p> <p>a) Remove or plug all lines conveying wastewater to the septic tank-disposal system(s) so that a discharge can no longer occur.</p> <p>b) Pump the septic tank(s) and dispose of pumpings in accordance with all local, state, and federal regulations.</p> <p>c) Backfill the septic tank(s) with clean fill or sand, or remove the tank(s) from the site.</p> <p>When all septic tank-disposal systems have been abandoned and post-closure requirements have been met, the Permittees may request to terminate the Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC, 40 CFR 503]</p>		Y	Septic tanks TA-54-150 and TA-22-045 were permanently abandoned on Sept 15, 2017 and Oct. 3, 2017; respectively. Both these tanks were filled with flowable fill (weak cement). Photographic documentation was provided to NMED in the February 2018 Semi-Annual Monitoring Report:EPC-DO:18-037 (Jan. 29, 2018).

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.E	General Terms and Conditions Condition 27.)	<p>27). RECORD KEEPING - The Permittees shall maintain a written record of the following:</p> <ul style="list-style-type: none"> • information and data used to complete the application for this Discharge Permit; • any releases (commonly known as "spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC; • the operation, maintenance, and repair of all facilities/equipment used to treat, store or dispose of wastewater; • facility record drawings (plans and specifications) showing the actual construction of the facility and bear the seal and signature of a licensed New Mexico professional engineer; • copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit; • the volume of wastewater or other wastes discharged pursuant to this Discharge Permit; • groundwater quality and wastewater quality data collected pursuant to this Discharge Permit; • copies of construction records (well log) for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit; • the maintenance, repair, replacement or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit; and • data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit, including: <ul style="list-style-type: none"> • the dates, location and times of sampling or field measurements; • the name and job title of the individuals who performed each sample collection or field measurement; • the sample analysis date of each sample; • the name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; • the analytical technique or method used to analyze each sample or collect each field measurement ; • the results of each analysis or field measurement, including raw data; • the results of any split, spiked, duplicate or repeat sample; and • a copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used. <p>The written record shall be maintained by the Permittees at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection or measurement and shall be made available to the department upon request.</p> <p>[NMSA 1978, § 74-6-5.D, Subsections A and D of 20.6.2.3107 NMAC]</p>		Y	<p>As verified with site personnel, record keeping complete with exceptions as noted and communicated with NMED such as:</p> <ul style="list-style-type: none"> • facility record drawings (plans and specifications) showing the actual construction of the facility and bear the seal and signature of a licensed New Mexico professional engineer only exist for the two newer septic tank-disposal systems (TA-58-52 and TA-33-0375) but not for older ones. These records were reviewed during the on-site Review. • With the exception of septic system TA-33-0375, all discharge volumes are estimated based on occupancy/

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.E	General Terms and Conditions Condition 28.)	28). INSPECTION and ENTRY - The Permittees shall allow inspection by NMED of the facilities and their operations that are subject to this Discharge Permit and the WQCC regulations. NMED may, upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC. The Permittees shall allow NMED to have access to and reproduce for their use any copy of the records, and to perform assessments, sampling, or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state, or federal regulations. [NMSA 1978, § 74-6-5.D, Subsection D of 20.6.2.3107 NMAC, NMSA 1978, §§ 74-6- 9.B and 74-6-9.E]		Y	As discussed with site personnel, access to facilities, structures, buildings, and records are available to NMED for their inspection at reasonable times except for those facilities located in secure areas where a clearance is required for entry. Access to such facilities is arranged with advance notice required to provide a qualified escort.
4.E		29). DUTY to PROVIDE INFORMATION - The Permittees shall, upon NMED's request, allow for NMED's inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records. [NMSA 1978, § 74-6-5.D, Subsection D of 20.6.2.3107 NMAC]		y	Site personnel indicate that they have been responsive to all NMED requests for records.
4.E	General Terms and Conditions Condition 30.)	30). MODIFICATIONS and/or AMENDMENTS - In the event the Permittees proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility, the Permittees shall notify NMED prior to implementing such changes. The Permittees shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. [NMSA 1978, § 74-6-5.D, Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]		Y	As reviewed with site personnel, no modifications to DP-1589 have been requested since the permit was issued (Jul.22, 2016). The following amendments have been made to DP-1589 since its issuance (Jul. 22, 2016): (1) Correction of errors in DP-1589 (EPC-DO-16-251, (Sept. 12, 2016); (2) Amendment to DP-1589 (EPC-DO-16-367, Dec. 21, 2016); (3) Amendment to DP-1589 (EPC-DO-17-300, Aug. 15, 2017).
4.E	General Terms and Conditions Condition 31.)	31). PLANS and SPECIFICATIONS - In the event the Permittees are proposing to construct a wastewater system or change a process unit of an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittees shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction. In the event the Permittees implement changes to the wastewater system authorized by this Discharge Permit that result in only a minor effect on the character of the discharge, the Permittees shall report such changes (including the submission of record drawings, where applicable) as of January 1 and June 30 of each year to NMED. [NMSA 1978, § 74-6-5.D, Subsections A and C of 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]		NA	LANL has not proposed any new construction or changes to processes since the Permit was issued (Jul, 22,2016). At the time of the on-site Review, LANL reported no plans to install a new septic tank-disposal system.

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.E		<p>32). CIVIL PENALTIES - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the Permittees to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the Permittees waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [NMSA 1978, § 74-6-5.D, 20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1]</p>		NA	According to site personnel, no civil enforcement actions have occurred.
4.E		<p>33). CRIMINAL PENALTIES-No person shall:</p> <ul style="list-style-type: none"> • make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA; • falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or • fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation. <p>Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. [NMSA 1978, § 74-6-5.D, 20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2.A through 74- 6-10.2.F]</p>		NA	Site personnel indicated no criminal penalties or violations reported.

Permit Section	Section Title	Permit Requirement	Applicable Septic Systems	Compliance (Y/N/NA)	Basis of Compliance
4.E		34). COMPLIANCE with OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the Permittees of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders. [NMSA 1978, § 74-6-5.D, NMSA 1978, § 74-6-5.L]		NA	Permittee understands that this permit does not release obligations under other laws, regulations, permits or orders.
4.E		35). RIGHT to APPEAL - The Permittees may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [NMSA 1978, § 74-6-5.D, 20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.0]		NA	According to interviews conducted, appeals to Permit conditions have not been required.
4.E		36). TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the Permittees shall: <ul style="list-style-type: none"> • notify the proposed transferee in writing of the existence of this Discharge Permit; • include a copy of this Discharge Permit with the notice; and • deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. Until both ownership and possession of the facility have been transferred to the transferee, the Permittees shall continue to be responsible for any discharge from the facility. [NMSA 1978, § 74-6-5.D, 20.6.2.3111 NMAC]		NA	
4.E		37). PERMIT FEES - Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date. Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the Permittees of the obligation to pay all permit fees assessed by NMED. A permittee that ceases discharging or does not commence discharging from the facility during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the facility fails to remit an installment payment by its due date. [NMSA 1978, § 74-6-5.D, Subsection F of 20.6.2.3114 NMAC, NMSA 1978, § 74-6- 5.K]		Y	Permit fees reportedly paid in accordance with permit conditions.

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B.1.4 DP-1835

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
Operational Plan	1.) The Permittees shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 2 and 4 NMAC. [20.6.2.3109.C NMAC]	See Below	See Below
	2.) The Permittees shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC, 20.6.2.3109.C NMAC]	See Below	See Below
Operational Plan Condition 3).	3). Within one year of the effective date of this Discharge Permit (by August 31, 2017), the permittees shall demonstrate the mechanical integrity of the distribution piping and injection wells associated with this Discharge Permit. Prior to testing, the permittees shall propose for NMED approval the test method to be used. The results of the mechanical integrity testing shall be submitted to NMED within 60 days of test completion. The permittees shall demonstrate mechanical integrity of the distribution piping and injection wells associated with this Discharge Permit at least once every five years. If an injection well is reconfigured, the permittees must conduct a mechanical integrity test prior to re-injection of treated effluent into the subsurface at that well. [Subsection C of 20.6.2.3106 NMAC, Subsection A of 20.6.2.3107 NMAC, Subsection B of 20.6.2.5204 NMAC]	Y	On Oct. 14, 2016 LANL issued a Workplan (EPC-DO-16-299) describing the mechanical integrity testing procedure for the distribution piping to the injection wells. NMED approved of the testing procedure in a letter dated Oct. 17, 2016. On Nov. 10, 2016 LANL submitted a procedure for mechanical integrity testing of the injection wells that NMED approved via email on Nov. 22, 2016. On Aug. 28, 2017 LANL submitted an extension request, EPC-DO:17-301, to NMED requesting Permit Condition 3 be extended until Jun. 30, 2018 due to ongoing construction activities related to the well and piping infrastructure associated with CrIN-6 and piping manifolds at CrIN-1, CrIN-2, CrIN-3, CrIN-6 and CrEX-3. NMED approved the extension. LANL has submitted the following documents to NMED detailing the results of all mechanical integrity testing to date for Permit Condition 3: (1) Mechanical Integrity Testing of Injection Wells CrIN-4 and CrIN-5: EPC-DO-16-341 (Nov. 10, 2016); (2) Integrity Testing of Distribution Piping from CrEX-1 to CrIN-4 and CrIN-5: EPC-DO-16-345 (Nov. 15, 2016); (3) Integrity Testing of Injection Wells CrIN-1, CrIN-2, and CrIN-3: EPC-DO-16-365 (Dec. 9, 2016); (4) Integrity Testing of Distribution Piping from CrEX-1, CrEX-2, and CrEX-3 to CrIN-1, CrIN-2, CrIN-3, CrIN-4, and CrIN-5: EPC-DO: 17-302 (Aug. 28, 2017); and (5) Integrity Testing of Injection Well CrIN-6 and Distribution Piping from Extraction Wells to Injection Wells: EPC-DO: 17-465 (Nov. 22, 2017). All test results were reviewed during the on-site Review.
Operational Plan Condition 4).	4). Prior to the first discharge from the IX systems to any of the six injection wells, the permittees shall submit written notification to NMED stating the date that the discharge is to commence. [20.6.2.3107.A NMAC]	Y	Since the issuance of the Permit and at the time of the on-site Review, LANL has notified NMED prior to commencement of injection, in writing first (within 30 days of commencement) and then by email 24-hrs before start-up of the extraction, treatment and injection system. Documentation provided in the following correspondence: (1) Notification of Commencement of Injection to CrIN-4 and CrIN-5 from CrEX-1: EPC-DO-16-334 (Nov. 3, 2016) followed by 24-hour email notification on Nov.29, 2016; (2) Notification of Commencement of Injection to CrIN-1, CrIN-2, CrIN-3 from CrEX-1, CrEX-2, and CrEX-3: EPC-DO-17-264 (Jul. 13, 2017) followed by 24-hour email notification on Sept. 1, 2017; (3) Notification of Commencement of Injection to CrIN-1, CrIN-2, CrIN-3, CrIN-4, CrIN-5, and CrIN-6 from CrEX-1, CrEX-2, and CrEX-3: EPC-DO-17-372 (Sept. 22, 2017) followed by 24-hour email notification on Oct.25, 2017; and most recently (4) a 24-hour email notification on Feb.14, 2018 for commencement of extraction at CrEX-4.

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
Operational Plan Condition 5).	<p>5). Prior to the initial discharge of treated effluent from an IX treatment system to the injection wells, and before injecting treated effluent following any major modification or repair of an IX treatment system that could adversely impact effluent quality, the permittees shall submit documentation that the IX systems achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. [Subsections A and C of 20.6.2.1202 NMAC, Subsection C of 20.6.2.3109 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>	Y	<p>Analytical results collected since September 2014, available to the general public on the Intellus Database, for extraction well CrEX-1 were used to identify constituents of concern. This data supplemented the data provided in the permit application, which identified chromium, perchlorate, and nitrate as the only constituents of concern (COCs). Remaining analytes were either below regulatory limits or at non-detected concentrations and therefore already less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. In June 2016, prior to initial discharge of treated effluent from the IX treatment system to the injection wells, LANL again collected water quality data (but only for the three COCs listed above) of the influent and effluent to document that the IX Treatment System was capable of achieving standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. Documentation provided in Intellus output of analytical results for CrEX-1 and Documentation of Treatment Efficiency: EPC-DO-16-336 (Nov. 10, 2016).</p>
Operational Plan Condition 6).	<p>6). The permittees shall maintain fences around all synthetically lined storage lagoons to control access by the general public and animals. The fences shall consist of a minimum of six-foot chain link or field fencing and locking gates. Fences shall be maintained throughout the term of this Discharge Permit. IX treatment systems shall be contained within secure structures to control access by the general public. [20.6.2.3109.B-C NMAC, NMSA 1978, §74-6-5.D]</p>	Y	<p>Six-foot chain linked fences with locked gates around all synthetically lined storage lagoons were observed during on-site Review. In addition, the IX treatment systems are contained within locked flatbed cargo trailers (as noted during the on-site Review). See photodocumentation (1) Basin East Gate; (2) Basin Fence; (3) Basin West Gate; (4) and (5) IX Treatment System Trailers.</p>
Operational Plan Condition 7).	<p>7). The permittees shall maintain signs printed in English and Spanish indicating that the treated effluent is not potable. Signs shall be posted at the UIC wellheads, the IX treatment systems, impoundments, storage vessels, and other areas where there is potential for public contact with hazardous materials or equipment. [20.6.2.3109 NMAC.B-C, NMSA 1978, § 74-6-5.D]</p>	Y	<p>Non-potable water signs are posted in English and Spanish at all extraction wellheads, the IX treatment systems, impoundments, storage vessels, and other areas where there is potential for public contact with hazardous materials or equipment. These signs were observed at the extraction wellheads and IX treatment systems during the on-site Review. Currently the Injection wellheads are not posted since these wellheads and appurtenances are below grade either underground or in vaults that are locked. The only above grade infrastructure associated with these wellheads are the control panels. See photo documentation: (1) Basin East Gate; (2) Basin Fence; (3) Basin West Gate; (3) CREX-1; (4) CREX-2.1; (5) CREX-2; (6) CREX-3; (7) CTU-A; (8) CTU-B; (9) CTU-C.</p>
Monitoring, Reporting, and Other Requirements	<p>8). The permittees shall conduct the monitoring, reporting, and other requirements listed below. [20.6.2.3107 NMAC]</p>	Y	<p>As reviewed with site personnel, reports are prepared quarterly per the requirements of Permit Condition 10. Monitoring is performed per the requirements of Permit Conditions 12 through 16 and as stipulated in the Interim Facility-Wide Groundwater Monitoring Plan. Documentation is provided in Quarterly Monitoring Reports: EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017) and; EPC-DO: 18-057 (Feb.26, 2018).</p>

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>9). METHODOLOGY - Unless otherwise approved in writing by NMED, the permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents:</p> <p>a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18\ 19\ or current);</p> <p>b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste;</p> <p>c) U.S. Geological Survey, Techniques for Water Resources Investigations of the US. Geological Survey;</p> <p>d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31.Water;</p> <p>e) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations;</p> <p>f) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition;</p> <p>g) American Society of Agronomy, Chemical Methods: Methods of Soil Analysis; Part I. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3.</p> <p>[20.6.2.3107.B NMAC]</p>	Y	As reviewed with site personnel, all samples and analyses are collected and analyses performed per the methods prescribed in Permit Condition 9. In addition, all laboratories used for environmental compliance samples are National Environmental Laboratory Accreditation Program (NELAP) certified.
Monitoring, Reporting, and Other Requirements Condition 10).	<p>10). The permittees shall submit quarterly monitoring reports to NMED by the first of June, September, December, and March of each year as described below. The quarterly reports shall document the influent and discharge volumes from the treatment systems, quarterly groundwater and treated effluent sampling results, and any operations/maintenance activities performed for the prior quarter.</p> <p>Quarterly monitoring shall be performed during the following periods and submitted as follows:</p> <ul style="list-style-type: none"> • January 1st through March 31st - due by June 1st • April 1st through June 30th - due by September 1st • July 1st through September 30th - due by December 1st • October 1st through December 31st - due by March 1st <p>[20.6.2.3107.A NMAC]</p>	Y	As reviewed with site personnel, reports are prepared quarterly. Influent and discharge volumes for the IX treatment are summarized in Table 1, quarterly ground water monitoring well sampling results are included in Table 3, quarterly treated effluent sampling results from each IX treatment system are provided in Table E2-1 of Enclosure 2, and a discussion of any operations/maintenance activities performed the prior quarter (Requirement 4) is included in each of the quarterly reports. Documentation is provided in Quarterly Monitoring Reports: EPC-DO: 17-066 (Feb.27, 2017), EPC-DO: 17-166 (Aug. 21, 2017), EPC-DO: 17-274 (May 31, 2017), EPC-DO: 17-449 (Nov.22, 2017) and EPC-DO: 18-057 (Feb.26, 2018).
	<p>11). Quarterly reports shall include the following general information:</p> <p>a) any periodic test of mechanical integrity conducted;</p> <p>b) any replacement of primary or secondary IX vessels or associated , treatment system infrastructure with an accompanying narrative explanation of the reasons for the decision to replace the vessels;</p> <p>c) any well work-overs conducted;</p> <p>d) any additional operational changes with the potential to markedly affect the discharge.</p> <p>[20.6.2.3107 NMAC]</p>	Y	Reviewed with site personnel and documentation provided in Quarterly Monitoring Reports: EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017) and; EPC-DO: 18-057 (Feb.26, 2018). Each quarterly report includes: a) discussions of any periodic mechanical integrity tests conducted (reported under Requirement 5); b) any replacement of primary or secondary IX vessels or associated treatment system infrastructures (reported under Requirement 6); c) any well work-overs conducted (reported under Requirement 7) and; d) any additional operational changes with the potential to markedly affect the discharge (reported under Requirement 8).

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>12). Quarterly reports shall include the following system performance information:</p> <ul style="list-style-type: none"> a) monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each injection well; b) the totalized monthly volume of treated effluent transferred to each injection well; c) monthly average, maximum, and minimum values of injection water level (pressure head) above static level for each injection well; d) the daily volume injected at each injection well; e) the daily volume pumped from each extraction well. <p>[20.6.2.3107 NMAC]</p>	<p>Y</p>	<p>Reviewed with site personnel and Quarterly Monitoring Reports: EPC-DO: 17-066 (Feb.27, 2017), EPC-DO: 17-166 (Aug. 21, 2017), EPC-DO: 17-274 (May 31, 2017), EPC-DO: 17-449 (Nov.22, 2017) and EPC-DO: 18-057 (Feb.26, 2018). Performance information reported includes: a) monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each injection well (Table 4, Requirement 9); b) totalized monthly volume of treated effluent transferred to each injection well (Table 5, Requirement 10); c) monthly average, maximum, and minimum values of injection water level (pressure head) above static level for each injection well (Table 6, Requirement 11); d) daily volume injected at each injection well (Requirement 12); and e) daily volume pumped from each extraction well (Requirement 13).</p>
	<p>13). Quarterly reports shall include laboratory analysis of treated effluent from each IX treatment system. IX treatment system initial startup and major modifications shall be monitored according to the following schedule:</p> <ul style="list-style-type: none"> a) treated effluent will be analyzed every week for the first 8 weeks after startup or modification of an IX treatment system; b) treated effluent will be analyzed every two weeks for weeks 10, 12, and 14 after startup or modification of an IX treatment system; c) treated effluent will be analyzed every month 14 weeks after startup or modification of an IX treatment system and continue on this schedule until a system is modified, placed on standby, or shut down. <p>After an IX treatment system undergoes standby or shut down for a duration that could impact effluent quality, the permittees will repeat this sampling sequence upon initiation of treatment processes.</p> <p>This schedule will include analysis of treated effluent for the following analytes:</p> <ul style="list-style-type: none"> • Total Chromium (µg/L) • Nitrate as N (mg/L) • Perchlorate (µg/L) • Sulfate (mg/L) • TDS (mg/L) • Fluoride (mg/L) • Chloride (mg/L) <p>Treated effluent will be analyzed annually for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants defined in 20.6.2.WW NMAC.</p> <p>All confirmation analysis of treated effluent will be conducted by an independent environmental laboratory that is certified under the National Environmental Laboratory Accreditation Program (NELAP).</p> <p>[20.6.2.3107.A NMAC and 20.6.2.3107.B NMAC]</p>	<p>Y</p>	<p>As reviewed with site personnel, Quarterly Monitoring Reports include analytical results for the effluent from each IX Treatment System (EPC-DO:17-166 (May, 31, 2017), E2-1, Enclosure 2). The quarterly reports document two startups where eight weekly effluent samples were collected followed by a few weeks of bi-weekly sampling for the constituents listed in Permit Condition 13, prior to system shutdown. The system (to date) has not been operated long enough between shutdowns to go to monthly sampling. The 2017 annual sample was collected Feb, 24, 2017. Analytical results for this sample are provided in E2-2 of Enclosure 2 of the 2017 1st Quarterly Report: EPC-DO:17-166 (May, 31, 2017). Documentation reviewed is provided in Quarterly Monitoring Reports: EPC-DO: 17-066 (Feb.27, 2017), EPC-DO: 17-166 (Aug. 21, 2017), EPC-DO: 17-274 (May 31, 2017), EPC-DO: 17-449 (Nov.22, 2017) and EPC-DO: 18-057 (Feb.26, 2018). Samples are submitted to laboratories that are National Environmental Laboratory Accreditation Program (NELAP) certified.</p>

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>14). The permittees shall perform quarterly depth to groundwater measurements and groundwater quality analysis for Nitrate as N, total Chromium, Perchlorate, Sulfate, Fluoride, Chloride, and TDS at the following monitoring wells:</p> <ul style="list-style-type: none"> • CrCH-1 (water level only) • CrCH-2 (water level only) • CrCH-3 (water level only) • CrCH-4 (water level only) • CrCH-5 (water level only) • R-11 • R-13 • R-43 • R-44 • R-45 • R-50 • R-61 (water level only) • R-62 • SIMR-2 <p>Depth to groundwater measurements, a summary table of analytical results, and a facility layout map showing the location and number of each well shall be submitted to NMED in the quarterly monitoring reports. [Subsection A of 20.6.2.3107 NMAC]</p>	Y	<p>As reviewed with site personnel, quarterly depth to ground water measurements, ground water quality analysis for nitrate as N, total Chromium, Perchlorate, Sulfate, Fluoride, Chloride, and TDS , and a facility layout map showing the location and number of each of the monitoring wells listed in Permit Condition 14 are summarized in Table 2, Table 3, and provided as Enclosure 6, respectively, in Quarterly Monitoring Reports. Documentation reviewed: Quarterly Monitoring Reports EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017); and EPC-DO: 18-057 (Feb.26, 2018).</p>
	<p>15). The permittees shall develop a groundwater elevation contour map on a quarterly basis using the top of casing elevation data from the monitoring well survey and quarterly depth- to-regional groundwater measurements obtained from the regional aquifer groundwater monitoring wells listed in Condition 14 of this Discharge Permit. The groundwater elevation contour map shall depict the groundwater flow direction based on the groundwater elevation contours. Groundwater elevations between monitoring well locations shall be estimated using common interpolation methods. A contour interval appropriate to the data shall be used, but in no case shall the interval be greater than two feet. Groundwater elevation contour maps shall depict the groundwater flow direction using arrows based on the orientation of the groundwater elevation contours and the location and identification of each monitoring well and contaminant source. The groundwater elevation contour map shall be submitted to NMED in the quarterly monitoring reports. [Subsection A of 20.6.2.3107 NMAC]</p>	Y	<p>Reviewed with site personnel and Quarterly Monitoring Reports: EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017); and EPC-DO: 18-057 (Feb.26, 2018). Groundwater elevation contour maps were generated on a quarterly basis and included as E3-1 (Enclosure 3) in quarterly monitoring reports. Contour intervals for all of the quarterly maps reviewed were no greater than two feet. The exception: flow arrows were not observed on any of the quarterly groundwater elevation contour maps reviewed, however, groundwater flow direction is implied by the posting of the ground water elevations on maps. Subsequent to on-site Review, Lanl added arrows depicting the ground water flow direction to the quarterly Potentiometric Surface maps and has resubmitted those maps to NMED.</p>
	<p>16). Groundwater quality monitoring shall be conducted in accordance with the most recent approved version of the Interim Facility-Wide Groundwater Monitoring Plan (IFGMP) which is conducted under the direction of the NMED Hazardous Waste Bureau. In some cases, the NMED Groundwater Quality Bureau may request that additional analytes or wells be added to the sampling regime in cases where specific locations, constituents, or monitoring may not be included in the IFGMP. [20.6.2.3107 NMAC]</p>	Y	<p>A representative sampling event observed during the on-site Review, indicated that ground water sampling procedures, methods, field quality control/quality assurance procedures and waste management practices prescribed in the appendices of the Interim Facility-Wide Ground Water Monitoring Plan were followed.</p>
	<p>17). ELECTRONIC POSTING - Quarterly monitoring reports shall be posted on LANL's Electronic Public Reading Room located at http://egrr.lanl.gov/01:rnle/service (or as updated). [20.6.2.3107 .A NMAC]</p>	Y	<p>Quarterly Monitoring Reports (EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017); and EPC-DO: 18-057 (Feb.26, 2018)) were posted on LANL's Electronic Public Reading Room.</p>
Contingency Plan Condition 18).	<p>18). If the Supervisory Control and Data Acquisition (SCADA) system triggers a system alarm, injection operations in the affected system shall cease. The SCADA system shall be set to alarm and shut off injection should there be a malfunction such as increase in down-hole pressure in the injection well or rupture of a treated effluent conveyance line. Injection to the affected system shall not be resumed until the problem is corrected.</p>	NA	<p>Per site Review interviews, no such SCADA alarm has been triggered since the Permit was issued (Aug. 31, 2016).</p>

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>19). In the event that groundwater monitoring in the vicinity of the discharge conducted under this permit indicates that a significant increase in concentration of an analyte identified in Section 20.6.2.3103 NMAC or a toxic pollutant defined in Subsection WW of 20.6.2.7 NMAC is present in a groundwater sample that is attributable to a discharge conducted under this permit, and in any subsequent groundwater sample, the permittees shall enact the following contingency plan.</p> <p>Within 30 days of receipt of the data confirming the increase, the permittees shall propose measures to ensure that the exceedance of the standard or the presence of a toxic pollutant will be mitigated by submitting a corrective action plan to NMED for approval. The corrective action plan shall include a description of the proposed actions to control the source and an associated completion schedule. The plan shall be enacted as approved by NMED.</p> <p>Once invoked (whether during the term of this Discharge Permit or after the term of this Discharge Permit and prior to the completion of the Discharge Permit closure plan requirements), this condition shall apply until the permittees have fulfilled the requirements of this condition and groundwater monitoring confirms for a minimum of two years of consecutive groundwater sampling events that the standards of Section 20.6.2.3103 NMAC are not exceeded and toxic pollutants are not present in groundwater.</p> <p>The permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC, should the corrective action plan not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within 180 days of confirmed increase in groundwater contamination.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]</p>	NA	Per site Review interviews, no significant increase in concentration of an analyte has occurred since the permit was issued (Aug. 31, 2016) that would require implementation of contingency plan.
	<p>20). In the event that information available to NMED indicates that a groundwater monitoring well listed in Condition 14 of this Discharge Permit is not constructed in a manner consistent with its intended use, contains insufficient water to effectively monitor groundwater quality, or is not completed in a manner that is protective of groundwater quality, the permittees shall, at the request of NMED, submit a drilling workplan and project schedule for NMED approval within 120 days following notification. The permittees shall survey the new monitoring well within 30 days following well construction.</p> <p>Replacement monitoring well locations shall be approved by NMED prior to installation and completed in accordance with the attachment titled Ground Water Quality Bureau (GWQB) Monitoring Well Construction and Abandonment Guidelines</p> <p>, Revision 1.1, March 2011 (GWQB, 2011), or the permittees may propose specific construction details for approval by NMED. The permittees shall submit construction and lithologic logs, survey data, and a groundwater potentiometric surface map to NMED within 60 days following well completion.</p> <p>Actions associated with monitoring well SIMR-2 will require coordination with NMED and the Pueblo of San Ildefonso.</p> <p>Upon completion of the replacement monitoring wells, the monitoring well requiring replacement shall be properly plugged and abandoned. Well plugging, abandonment, and documentation of the abandonment procedures shall be completed in accordance with GWQB, 2011 and all applicable local, state, and federal regulations. The well abandonment documentation shall be submitted to NMED within 60 days of completion of well plugging activities.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>	NA	<i>Per site Review interviews and Quarterly Monitoring Reports reviewed (EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017); and EPC-DO: 18-057 (Feb.26, 2018)) since the permit was issued (Aug. 31, 2016), no monitoring wells required replacement per this condition.</i>

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
Contingency Plan Condition 21).	<p>21). In the event that groundwater flow information obtained pursuant to this Discharge Permit indicates that a groundwater monitoring well listed in Condition 14 is not located hydrologically downgradient of the discharge location it is intended to monitor, the permittees shall submit a drilling workplan and project schedule for NMED approval within 120 days following notification from NMED. The permittees shall survey the new monitoring well within 30 days following well construction.</p> <p>New well locations shall be approved by NMED prior to installation and completed in accordance with GWQB, 2011, or the permittees may propose specific construction details for approval by NMED. The permittees shall submit construction and lithologic logs, survey data, and a groundwater elevation contour map within 90. days following well completion.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>	NA	Per review of contour maps with site personnel, there is no evidence that the overall ground water flow direction has changed in the area; monitoring wells are located downgradient of the discharge locations. Therefore, no new plans for locating new wells have been required per this condition.
	<p>22). In the event that a release ("spill") occurs that is not authorized under this Discharge Permit, the permittees shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in Section 20.6.2.1203 NMAC and summarized below. Within 24 hours following discovery of the unauthorized discharge, the permittees shall verbally notify NMED and provide the following information:</p> <ul style="list-style-type: none"> a) the name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility; b) the name and address of the facility; c) the date, time, location, and duration of the unauthorized discharge; d) the source and cause of unauthorized discharge; e) a description of the unauthorized discharge, including its estimated chemical composition; f) the estimated volume of the unauthorized discharge; and g) any actions taken to mitigate immediate damage from the unauthorized discharge. <p>Within seven days following discovery of the unauthorized discharge, the permittees shall submit written notification to NMED with the information listed above and any pertinent updates. Within 15 days following discovery of the unauthorized discharge, the permittees shall submit a corrective action report/plan to NMED describing any corrective actions taken and/or to be taken relative to the unauthorized discharge that includes the following:</p> <ul style="list-style-type: none"> a) a description of proposed actions to mitigate damage from the unauthorized discharge; b) a description of proposed actions to prevent future unauthorized discharges of this nature; c) a schedule for completion of proposed actions. <p>In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given pursuant to Paragraph (1) of Subsection A of 20.6.2.1203 NMAC, the permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC. Nothing in this condition shall be construed as relieving the permittees of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC.</p> <p>[20.6.2.1203 NMAC]</p>	NA	Per site interviews conducted and Quarterly Monitoring Reports reviewed (EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017); and EPC-DO: 18-057 (Feb.26, 2018)), no releases or un-authorized discharges had occurred to date (at time of Review) under this Discharge Permit, therefore, corrective measures have not been implemented, nor notifications required per this condition.
	<p>23). In the event that NMED or the permittees identify any failures of the discharge plan or this Discharge Permit not specifically noted herein, NMED may require the permittees to submit a corrective action plan and a schedule for completion of corrective actions to address the failures. Additionally, NMED may require a Discharge Permit modification to achieve compliance with 20.6.2 NMAC.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]</p>	NA	Per site interviews conducted, no "failures" of the discharge plan per this Discharge Permit had been identified to date (at time of Review), therefore, no corrective action plan nor a permit modification have been required by NMED.

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
<p>Closure Plan</p>	<p>24). Upon final cessation of the activity pursuant to the Discharge Permit, the permittees shall perform the following closure measures:</p> <ul style="list-style-type: none"> a) cap or plug all lines to prevent the flow of wastewater to treatment or disposal systems; b) empty, clean, and remove tanks; c) empty lagoons, remove liners, backfill, and re-grade to surface topography; d) appropriately dispose of liquids and solids; e) regrade and cover stockpiles; f) continue groundwater monitoring for at least two years, or as appropriate; g) enact contingency plans if groundwater standards are exceeded including any abatement required by NMED pursuant to actions related to this Discharge, Permit; h) remove any compounds and equipment pertaining to the remediation activities; i) appropriately remove and manage all treatment resins and media in accordance with all applicable local, state and federal regulations; j) UIC wells must be closed in accordance with State of New Mexico Oil Conservation Division guidelines as described in the Oil Conservation Division Underground Injection Control Program Manual, February 26, 2004; k) following notification from NMED that post-closure monitoring may cease, the permittees shall plug and abandon any groundwater monitoring wells not included in the current IFGMP in accordance with GWQB, 2011; l) when all post-closure requirements have been met, the permittees may request to terminate the Discharge Permit. <p>Should individual components utilized under this Discharge Permit be required for completion of Consent Agreement activities under other regulatory oversight, the permittees may request a variance from specific closure activities required under this condition. [20.6.2.3107 (A)II NMAC]</p>	<p>NA</p>	<p>Closure measures have not been required or performed per this condition because activities are ongoing. Nor have any variances been required.</p>

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
General Terms and Conditions	<p>25). RECORD KEEPING - The permittees shall maintain a written record of the following information:</p> <ul style="list-style-type: none"> a) information and data used to complete the application for this Discharge Permit; b) records of any releases ("spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC; c) records of the operation, maintenance, and repair of all facilities/equipment used to treat, store, or dispose of wastewater; d) facility record drawings (plans and specifications) showing the actual construction of the facility that comply with all applicable statutes, regulations, and codes including applicable DOE and LANL Engineering Standards; e) copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit; t) the volume of wastewater or other wastes discharged pursuant to this Discharge Permit; g) groundwater quality and wastewater quality data collected pursuant to this Discharge Permit; h) copies of construction records (well logs) for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit; i) records of the maintenance, repair, replacement, or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit; j) data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and made available to NMED upon request: <ul style="list-style-type: none"> i) the dates, locations, and times of sampling or field measurements; ii) the name and job title of the individuals who performed each sample collection or field measurement; iii) the sample analysis date of each sample; iv) the name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; v) the analytical technique or method used to analyze each sample or collect each field measurement; vi) the results of each analysis or field measurement, including raw data; vii) the results of any split, spiked, duplicate or repeat sample; viii) a copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used. <p>The written record shall be maintained by the permittees at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection, or measurement and shall be made available to NMED upon request. [Subsections A and D of 20.6.2.3107 NMAC]</p>	Y	As verified with site personnel, record keeping (site files, Intellus, SharePoint and Quarterly Monitoring reports) is complete.

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>26). INSPECTION and ENTRY - The Permittees shall allow inspection by NMED of the facilities and their operations that are subject to this Discharge Permit and the WQCC regulations. NMED may, upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC.</p> <p>The Permittees shall allow NMED to have access to and reproduce for their use any copy of the records, and to perform assessments, sampling, or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state, or federal regulations.</p> <p>[Subsection D of 20.6.2.3107 NMAC, NMSA 1978, §§ 74-6- 9.B and 74-6-9.E]</p>	Y	As discussed with site personnel, access to facilities, structures, buildings, and records are available to NMED for their inspection at reasonable times except for those facilities located in secure areas where clearance is required for entry. Access to such facilities is arranged with advance notice required to provide a qualified escort.
	<p>27). DUTY to PROVIDE INFORMATION - The Permittees shall, upon NMED's request, allow for NMED's inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records.</p> <p>[Subsection D of 20.6.2.3107 NMAC]</p>	Y	Site personnel interviewed indicated that they have been responsive to all NMED requests for records.
	<p>28). MODIFICATIONS and/or AMENDMENTS - In the event the Permittees proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility, the Permittees shall notify NMED prior to implementing such changes. The Permittees shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes.</p> <p>[NMSA 1978, § 74-6-5.D, Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]</p>	NA	As reviewed with site personnel and indicated in records, no modifications to DP-1835 have been requested since the permit was issued (Aug.31, 2016).
	<p>29). PLANS and SPECIFICATIONS - In the event the Permittees are proposing to construct a wastewater system or change a process unit of an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittees shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction.</p> <p>In the event the Permittees implement changes to the wastewater system authorized by this Discharge Permit that result in only a minor effect on the character of the discharge, the Permittees shall report such changes (including the submission of record drawings, where applicable) in subsequent quarterly report to NMED.</p> <p>[Subsections A and C of 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>	NA	Per site interviews and Quarterly Monitoring Reports reviewed (EPC-DO: 17-066 (Feb.27, 2017); EPC-DO: 17-166 (Aug. 21, 2017); EPC-DO: 17-274 (May 31, 2017); EPC-DO: 17-449 (Nov.22, 2017); and EPC-DO: 18-057 (Feb.26, 2018)), LANL has not proposed any new construction or changes to processes since the Permit was issued Aug. 31, 2016. At the time of the on-site Review, LANL reported no plans to install any new septic tank-disposal system.

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>30). CIVIL PENALTIES - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow properly credentialed NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information required to be maintained by this Discharge Permit or related regulation may subject the permittees to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittees waive any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1]</p>	NA	According to LANL records reviewed and site interviews conducted, no civil enforcement actions/penalties have occurred since issuance of the Discharge Permit.
	<p>31). CRIMINAL PENALTIES - No person shall: a) make any false material statement, representation, certification, or omission of material fact in an application, record, report, plan, or other document filed, submitted, or required to be maintained under the WQA; b) falsify, tamper with, or render inaccurate any monitoring device, method, or record required to be maintained under the WQA; c) fail to monitor, sample, or report as required by a permit issued pursuant to a state or federal law or regulation. Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that a substantial danger of death or serious bodily injury to any other person may be created is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. [20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]</p>	NA	According to LANL records reviewed and site interviews conducted, no civil enforcement actions/penalties have occurred since issuance of this Discharge Permit.
	<p>32). COMPLIANCE with OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the permittees of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders. [NMSA 1978, § 74 6-5.L]</p>	NA	Permittee understands that this permit does not release obligations under other laws, regulations, permits or orders.

Section Title	Permit Requirement	Compliance (Y/N/NA)	Basis of Compliance
	<p>33). RIGHT to APPEAL - The permittees may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.0]</p>	NA	According to interviews conducted, appeals to Permit conditions have not been required.
	<p>34). TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the permittees shall: 1) notify the proposed transferee in writing of the existence of this Discharge Permit; 2) include a copy of this Discharge Permit with the notice; 3) deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. Until both ownership and possession of the facility have been transferred to the transferee, the permittees shall continue to be responsible for any discharge from the facility. [20.6.2.3111 NMAC]</p>	NA	Discharge Permit has not been transferred by permittee since its issuance.
	<p>35). PERMIT FEES - Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date. Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the permittees of the obligation to pay all permit fees assessed by NMED. A permittee that ceases discharging or does not commence discharging from the facility during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the facility fails to remit an installment payment by its due date. [Subsection F of 20.6.2.3 14 NMAC, NMSA 1978, § 74-6-5.K]</p>	Y	Permit administration is on-going; fees appear to have been paid in accordance with permit conditions.

B.1.5 Ground Water Monitoring Checklist - HWFP

GROUND WATER MONITORING CHECKLIST PURSUANT TO THE LOS ALAMOS NATIONAL LABORATORY HAZARDOUS WASTE PERMIT (May 2017)* Section 11

*Does not include Permit Sections relating to Soil, Sediment, Vapor, Risk Assessment, Interim Measures, Corrective Actions, or Laboratory Procedures

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 11			
11.3: GENERAL CONDITIONS			
11.3.1: Ground Water Monitoring	The Permittees shall conduct ground water monitoring for all regulated units, as defined in 40 CFR § 264.90(a)(2), at the Facility subject to the ground water monitoring requirements of 40 CFR Part 264, Subpart F and subject to corrective action under Permit Section 11.2.	Y	Los Alamos National Laboratory (LANL) has regulated waste units that meet the requirements of 40 CFR § 264.90(a)(1), and therefore is required to meet the characterization requirements of 40 CFR § 264.90(a)(2) for the purposes of detecting, characterizing, responding to releases to the uppermost aquifer. With regard to the requirements of 40 CFR § 264, Subpart F, ground water monitoring is conducted in accordance with the Interim Facility-wide ground water Monitoring Program (IFGMP). The IFGMP divides the monitoring program into 6 specific groups (TA-21, Chromium Investigation, MDA C, TA-54, TA-16 260) and basewide General Surveillance Group. The IFGMP addresses ground water in three hydrostratigraphic units (alluvial, perched-intermediate, and regional), as well as springs/seeps, and baseflow surface water. The 2018 IFGMP (LANL 2017g May) includes 132 monitoring wells, 31 springs, and 14 baseflow sampling locations throughout LANL and the surrounding areas.
11.3.1: Ground Water Monitoring	The Permittees shall coordinate such monitoring with the monitoring conducted under the Interim Facility Wide Ground Water Monitoring Plans, and any Department-approved Long-term Ground Water Monitoring Plans for the Facility, as approved under the Consent Order. So long as the Consent Order is in effect, fulfilling the ground water monitoring requirements of the Consent Order shall fulfill the ground water monitoring requirements of 40 CFR §§ 264.90 through 100.	Y	The current 2018 IFGMP (LANL 2017g May) is in accordance with the Compliance Order on Consent (NMED 2016 June) thereby fulfilling ground water monitoring requirements in 40 CFR §§ 264.90 through 100. The IFGM is administered by the Environmental Remediation Program and the Quality and Regulatory Compliance -Environmental Management, which are part of the Associate Directorate for Environmental Management (ADEM) and Environmental Management (EM) at LANL. These LANL divisions coordinate the execution of IFGMP and reporting with Hazardous Waste Bureau of the New Mexico Environment Department (NMED).
11.3.1: Ground Water Monitoring	The Permittees shall notify the Department, in writing, of any new detections of hazardous waste and hazardous waste constituents in ground water at any location for which analytical data was received during the previous month as described in Permit Section 11.3.1.1. For purposes of this Permit Section (11.3), "hazardous constituent" includes explosive compounds, any toxic pollutant identified at 20.6.2.7.WW NMAC and any contaminant listed in 20.6.2.3103 NMAC. Such detections of hazardous waste or hazardous constituents shall also be highlighted in the periodic ground water monitoring report submitted to the Department, in accordance with Permit Section 11.3.2, summarizing the ground water monitoring results for the appropriate monitoring period.	Y	LANL has executed a rigorous data review and notification process in the form of "Monthly Notification of Ground Water Data" reports, which are transmitted to NMED. For this review, 26 monthly notifications (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February) were reviewed for the timeframe between January 2016 and February 2018. The LANL ground water team reviews all previous monthly ground water analytical data and supplies NMED with a report of samples that show any new detections, increasing trends, or exceedances of any of the five comparison criteria for regulatory action or screening levels. A 1-day oral notification to NMED occurs when a new contaminant is detected at a concentration that exceeded any of the comparison criteria at locations where contaminants have not been previously detected above the respective standard. In accordance with notification requirements of the 2016 Consent Order (NMED 2016 June), LANL notifies NMED orally within one day of the review meeting. That oral notification is followed up by an email transmittal to document the conversation via a written email notification. Finally, the notification is formally submitted to NMED in a letter report within 15 days of the original oral notification. LANL has provided example documentation of a Chromium exceedance notification that occurred in well R-45 S1 in December 2017 (LANL 2018d April). After the analytical results were received in January 2018, the data was reviewed on February 15, 2018 by the LANL ground water team (LANL 2018a February). The Oral/email notification was sent to NMED on the same day (LANL 2018d April). The formal written notification was followed up within 15 days, on February 23, 2018 (LANL 2018a February). That report met all the requirements, content, and format required in Section 11.3.1.1 of the permit.
11.3.1.1: Notification of Detections	By the fifteenth day of each month, the Permittees shall review the analytical data from all ground water monitoring conducted under this Permit that was received during the previous month, and shall record the date of such review in the Operating Record. If the fifteenth day of a month is a non-business day, then the review shall be conducted by the next business day.	Y	The LANL ground water team reviews all previous monthly ground water analytical data and supplies NMED with a report of samples that show any new detections, increasing trends, or exceeds any of the five comparison criteria for regulatory action or screening levels. A sample LANL team review from February 2018 was provided as an example of the process (LANL 2018d April). The review meeting was documented in the form of an email that was submitted to NMED on February 15, 2018. Additionally, the date of the LANL review meeting is documented in each Monthly Notification that is submitted to NMED as part of the Operating Record. At total of 26 notifications from January 2016 to February 2018 were reviewed (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February). According to the letters, the review period for each of those events occurred on, or before, the 15th of each month.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.3.1.1: Notification of Detections	The Permittees shall notify the Department orally within one business day after review of the analytical data if such data show detection of a contaminant in a well screen interval or spring at a concentration that exceeds the ground water cleanup levels established in Permit Section 11.4.1 if that contaminant has not previously exceeded such water quality standard or cleanup level in such well screen interval or spring.	Y	As cited in the previous example, the February 15, 2018 email notification also documents that a voicemail was left with John Kieling of NMED on February 15, 2018. Both the email and voicemail notified NMED that one laboratory analytical result was identified as exceeding the NM Ground Water Standard for the first time in a regional well (R-45 S1). The monthly notification letters also document when a 1-day notification to NMED has occurred. For the 26-month review period, 1-day notifications occurred on: February 12, 2016, May 12, 2016, December 8, 2016, January 12, 2017, February 13, 2017, June 15, 2017, December 11, 2017, January 11, 2018, and February 15, 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February).
11.3.1.1: Notification of Detections	The Permittees shall notify the Department in writing within fifteen days after review of the analytical data if the data show any of the following:	Y	A total of 26 Monthly Notification Letters between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February) were reviewed. In every instance, the notification letters were submitted within the 15-day time period specified in Section 11.3.1.1 of the HWFP permit.
11.3.1.1: Notification of Detections	(1) Detection of a hazardous constituent that is an organic compound in a spring or screened interval of a well if that hazardous constituent has not previously been detected in the spring or screened interval;	Y	In the 26-month review period between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February), a total of 2 instances were noted when LANL notified NMED in writing of an organic exceedance in a well or spring (December 13, 2016 and December 18, 2017).
11.3.1.1: Notification of Detections	(2) Detection of a hazardous constituent that is a metal or other inorganic compound at a concentration above the background level in a spring or screened interval of a well if that hazardous constituent has not previously exceeded the background level in the spring or screened interval;	Y	In addition to the emailed and verbal notifications of new detections, the same information is reported in Monthly Notification of Ground Water Data" reports that are submitted within 15 days of the review meeting. As an example, LANL has provided example documentation of an Chromium exceedance notification that occurred in well R-45 S1 in December 2017. After the analytical results were received in January 2018, the data was reviewed on February 15, 2018 by the LANL ground water team. The Oral/email notification was sent to NMED on the same day. The formal written notification was followed up within 15 days, on February 23, 2018. In the 26-month review period between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February), a total of 8 instances were noted when LANL notified NMED in writing of a inorganic exceedance in a well or spring (February 25, 2016, May 17, 2016, January 23, 2017, February 16, 2017, June 22, 2017, December 18, 2017, January 23, 2018, and February 23, 2018).
11.3.1.1: Notification of Detections	(3) Detection of a hazardous constituent in a spring or screened interval of a well at a concentration that exceeds one-half the cleanup level established in Permit Section 11.4.1, if that hazardous constituent has not previously exceeded one-half such standard or screening level in the spring or screened interval;	Y	In the 26-month review period between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February), there were no instances that met this reporting requirement criteria.
11.3.1.1: Notification of Detections	(4) Detection of perchlorate in a spring or screened interval of a well at a concentration of 2 µg/L or greater if perchlorate at such concentration has not previously been detected in the spring or screened interval;	Y	In the 26-month review period between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February), there were no instances that met this reporting requirement criteria.
11.3.1.1: Notification of Detections	(5) Detection of a hazardous constituent that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that exceeds two times the background level for the third consecutive sampling of the spring or screened interval; and	Y	In the 26-month review period between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February), there were no instances that met this reporting requirement criteria.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.3.1.1: Notification of Detections	(6) Detection of a hazardous constituent in a spring or screened interval of a well at a concentration that exceeds one-half the cleanup level established in Permit Section 11.4.1 and that has increased for the third consecutive sampling of that spring or screened interval.	Y	In the 26-month review period between January 2016 and February 2018 (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February), there were no instances that met this reporting requirement criteria.
11.3.1.1: Notification of Detections	The written notification shall be submitted to the Department in a letter report in table format that includes, but is not limited to, the date or dates of the sampling event, an identification of the well or spring, the location of the well or spring, the depth of the screened interval of the well or zone sampled, a list of the analytical data that triggered the reporting requirement, any known issues with sample quality, and the specific category for which the data is reported under this Permit Section (11.3.1.1).	Y	In the 26 notification letters reviewed, all aspects of this RCRA permit requirement were satisfied (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February).
11.3.1.1: Notification of Detections	Previous data to be evaluated under this Permit Section (11.3.1.1) to determine whether specified levels have been exceeded, or to determine trends in data for three consecutive samples shall include only data acquired after September 30, 2009. For the purpose of the notice requirements of this Permit Section (11.3.1.1), the background level of a contaminant shall be the most recent Department-approved 95 percent upper tolerance limit for the background for that contaminant set forth in the ground water Background Investigation Report approved by the Department, including any approved revisions, as it may be revised or replaced with another document.	Y	Each of the 26 notification letters reviewed between January 2016 and February 2018 include Tables 1 and 2 that meet this requirement (LANL to John Kieling 2016 January through LANL to John Kieling 2018 February). As an example, Table 1 (NMED 01-18 Ground Water Report [LANL to John Kieling 2016 January]), presents results since June 14, 2007, that met the five reporting criteria as specified in the Consent Order (NMED 2016 June). Table 2 (NMED 01-18 Ground Water Report Addendum), presents results that are exceeding the 95th percentile of those results in the data set defined in the "Ground Water Background Investigation Report, Revision 5." Only contaminants and other chemical constituents lacking a calculated ground water background value (i.e., the frequency of detections was too low to calculate a background value at the 95% upper tolerance level) are listed in this table.
11.3.1.1: Notification of Detections	The Permittees shall give notice by e-mail to persons on the e-mail notification list of ground water analytical data reported under this Permit Section (11.3.1.1) in accordance with Permit Section 1.13.	Y	Email notifications are sent the same day that information is posted on the EPRR.
11.3.2: ground water Monitoring Reporting	The Permittees shall submit to the Department periodic monitoring reports in accordance with the schedule in the Interim Facility Wide ground water Monitoring Plan (IFGMP) or the Department-approved Long-term ground water Monitoring Plans. The reports shall be prepared in accordance with Permit Section 11.12. The Permittees shall submit to the Department periodic ground water monitoring reports for all ground water monitoring data generated pursuant to this Permit. The Permittees shall propose a schedule for such reporting to the Department for approval. Such reporting shall be coordinated with, and may be combined with, the reporting conducted under § IV.A.6 of the Consent Order.	Y	Reports are prepared and submitted to NMED based upon the schedule outlined Table 1.3-1 as approved by NMED in the current 2018 IFGMP (LANL 2017g May).

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.3.8: Recordkeeping	The Permittees shall maintain all monitoring data, including sampling procedures, records of field measurements, laboratory analytical data, quality assurance/quality control documents, chain-of-custody records, well completion reports and periodic monitoring reports in the Facility Operating Record for a minimum of three years after the end of the operating life of the Facility and a minimum of three years after the end of any post-closure care periods.	Y	Monitoring data, location data, field records, chain-of-custody records, and well completion reports are stored and publicly accessible through the IntellusNM website (http://www.intellusnmdata.com). For the 2-year review period between 2016-2017, the IFGM periodic ground water monitoring reports, work plans, modifications, and notifications are readily accessible and publicly available on the LANL Electronic Public Reading Room website (http://epr.lanl.gov/).
11.4.1: Ground Water Cleanup Levels	The cleanup levels for all contaminants in groundwater shall be the WQCC groundwater quality standards, 20.6.2.3103 NMAC, the cleanup levels for toxic pollutants calculated in accordance with 20.6.2.7.WW NMAC, and the drinking water maximum contaminant levels (MCLs) adopted by EPA under the federal Safe Drinking Water Act (42 U.S.C. §§ 300f to 300j-26) or the New Mexico Environmental Improvement Board (EIB), 20.7.10 NMAC. If both a WQCC water quality standard and an MCL have been established for an individual substance, then the lower of the levels shall be the cleanup level for that substance.	Y	Ground water cleanup levels and comparison criteria are based on current published versions of NMED and EPA ground water standards. Table 1.6-1 of the NMED-approved IFGMP lists applicable standards and screening levels for ground water samples collected at LANL (LANL 2017g May). Each ground water analytical result are compared to the applicable standards both in the monthly notification letters to NMED, and the IFGM Periodic Monitoring Reports published on the EPRR.
11.4.1: Ground Water Cleanup Levels	The most recent version of NMED's Tap Water Screening Levels listed in Table A-1 of Technical Background Document for Development of Soil Screening Levels (as updated) shall be used to establish the cleanup level if either a WQCC standard or an MCL has not been established for a specific substance. In the absence of an NMED tap water screening level then the EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites (RSLs) for tap water shall be used. If no WQCC ground water standard or MCL has been established for a contaminant for which toxicological information is published, the Permittees shall use a target excess cancer risk level of 10 ⁻⁵ for carcinogenic substances and a HI of 1.0 for non-carcinogenic substances as the basis for proposing a cleanup level for the contaminant. If the background concentration of an inorganic constituent, as established in accordance with Permit Section 11.10.6, exceeds the standard then the cleanup level is the background concentration for that specific substance. Any cleanup level based on a risk assessment must be submitted to the Department for its review and approval.	Y	Ground water cleanup levels and comparison criteria are based on current published versions of NMED and EPA ground water standards. In the absence of a specific NMED or EPA ground water standard, contaminants are compared with risk-based NMED and EPA tap water screening levels. Additionally, for radiological compounds LANL follows DOE Order 458.1 technical standards for 100-mrem Public Dose Derived Concentrations and 4-mrem Drinking Water Derived Concentrations. Table 1.6-1 of the NMED-approved IFGMP (LANL 2017g May) lists the applicable standards and screening levels for ground water samples collected at LANL. Each groundwater analytical result are compared to applicable standards both in the monthly notification letters to NMED, and the IFGM Periodic Monitoring Reports published on the EPRR.
11.4.1: Ground Water Cleanup Levels	The Permittees shall give notice by e-mail to persons on the e-mail notification list in accordance with Permit Section 1.13 of a submittal to the Department under this Permit Section (11.4.1).	Y	Email notifications are sent the same day that information is posted on the EPRR.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.4.1.1: Ground Water Cleanup Level for Perchlorate	If, during the term of this Permit, the WQCC adopts a groundwater quality standard for perchlorate, or EPA or the Environmental Improvement Board adopts an MCL for perchlorate, such standard or MCL shall be the cleanup level in accordance with Permit Section 11.4.1. If perchlorate is detected, the Permittees shall evaluate the nature and extent of the perchlorate contamination. In the absence of a groundwater quality standard or MCL, if perchlorate is detected at concentrations at or greater than 4 µg/L, then the cleanup level shall be established using a HI of 1.0 in accordance with Permit Section 11.4.1 above.	Y	To date, the EPA has not adopted an MCL for perchlorate. Thus, per the HWFP and Consent Order the comparison criteria standard for perchlorate has been established as 4 µg/L. The use of this standard has been verified in the IFGMP documents, reports, and IntellusNM database.
11.6: Variance from Clean-up Levels	The Permittees may seek a variance from a particular cleanup level in accordance with this Permit Section (11.6).	NA	Per LANL Environmental Management interview (ADEM Meeting with Parsons, March 8, 2018), LANL has not requested any variances from the cleanup levels stipulated in the permit.
11.6.1: Water Quality Standards	For a cleanup level based on a water quality standard set by the WQCC, the Permittees may seek approval of an alternative abatement standard in accordance with the process specified in the WQCC Regulations, 20.6.2.4103.E and F NMAC.	NA	Per LANL Environmental Management interview (ADEM Meeting with Parsons, March 8, 2018), no alternative abatement standard has been requested to date. Therefore all water quality standards are the currently published WQCC values administered by NMED.
11.10.2.7: Ground Water Monitoring			
11.10.2.7.i: Ground Water Levels	Ground water level measurements shall be obtained at intervals required by the Department. Ground water levels also shall be obtained prior to purging in preparation for a sampling event. Measurement data and the date and time of each measurement shall be recorded on a site monitoring data sheet. The depth to ground water shall be measured to the nearest 0.01 feet. The depth to ground water shall be recorded relative to the surveyed well casing rim or other surveyed datum.	Y	The following statements are based on field observations, interviews with LANL EM staff, and review of data posted on water level section of the IntellusNM website (https://www.intellusnm.com/reporting/reports/Views/Nonanalytical/Field/eimef_ground_water_level.cfm). Ground water level measurements are obtained to the nearest 0.01' as measured from the defined measuring point on the surveyed well casing rim. Most wells are equipped with datalogging pressure transducers that record ground water elevations hourly, and are transmitted via satellite communication to LANL. These water levels are periodically uploaded to the Ground Water Level section of the IntellusNM website, and are available for public viewing. Daily measurements of the automated water level system are reported at midnight. Manual water levels are collected in wells without transducers, or when the transducer level needs to be checked or re-calibrated. All transducers are returned to the manufacturer every 18 months for a factory calibration. Examples of periodic factory calibrations were provided for wells R-35a and R-35b as an example of the process. Ground water sampling teams record the water level prior to purging a well for a sampling event. Ground water levels are also collected during well purging and sampling activities. This process was observed on March 6, 2018 during the sampling of well R-29. Via transducer, ground water measurements were obtained prior, during, and after the duration of the sampling activity. The collection of ground water measurements are documented in the following LANL Standard Operating Procedures (SOPs): Manual Ground Water Level Measurements (ER-SOP-20243, R1 [LANL 2017c March]); Pressure Transducer Installation, Removal, and Maintenance (ER-SOP-10010, R1 [LANL 2017b February]); and Ground Water Sampling (ER-SOP-20032, R0 [LANL 2017a February]).
11.10.2.7.i: Ground Water Levels	Ground water levels shall be measured in all wells at the facility (or the number of wells otherwise specified in a Department approved ground water monitoring work plan) within 14 days of the commencement of the monitoring activities. The Permittees shall conduct periodic measuring events, the schedule for which shall be provided in the ground water monitoring work plans.	N	Water level monitoring schedule is specified in Section 1.8 of the 2018 IFGMP (LANL 2017g May). However, the 2018 IFGMP indicates that ground water levels will be measured within 21-day sampling event, rather than the 14-day timeframe specified in the HWFP. Water levels are measured in ground water monitoring wells immediately before each purge and sampling event. For most ground water monitoring wells, water-level measurements are obtained from installed pressure transducers. In wells not equipped with pressure transducers, or in instances when the pressure transducer is not functioning properly, portable instrumentation is used to measure the water level (i.e., a "manual" measurement). The configuration of some wells does not permit manual water-level measurements to be taken (e.g., the well does not include an extra tube to accommodate a manual water-level probe). In these cases, historical water-level data are substituted for a measurement before purge and sampling. The pressure transducers discussed above allow water-level data to be recorded every 1 to 2 hours. These data are used in conjunction with water-level data collected during the sampling events and from wells and/or well screens not sampled under the Interim Plan (Table 1.8-1) (LANL 2017g May) to develop and validate the conceptual models. Ground water levels are also monitored in Los Alamos County water-supply wells in cooperation with Los Alamos County utilities and in the Buckman well field in cooperation with the City of Santa Fe. Data from the continuous water level recorders were reviewed at https://www.intellusnm.com/reporting/reports/Views/Nonanalytical/Field/eimef_groundwater_level.cfm , and are obtained within the 14-day window specified in the permit. Ground water levels are also obtained prior to well purging activities, and were observed as being recorded on the sampling forms.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.10.2.8: Ground Water Sampling	ground water samples shall initially be obtained from newly installed monitoring wells between ten and 30 days after completion of well development. ground water monitoring and sampling shall be conducted at an interval approved by the Department after the initial sampling event. The Permittees shall sample all saturated zones screened to allow entry of ground water into each monitoring well during each sampling event (or as otherwise specified in the Department approved ground water monitoring work plan). All requests for variances from the ground water sampling schedule shall be submitted to the Department, in writing, no less than 30 days prior to the start of scheduled monitoring and sampling events. ground water samples shall be collected from all saturated zones, where possible, within exploratory borings not intended to be completed as monitoring wells prior to abandonment of the borings.	Y	A review of well completion reports provide interim sampling results during drilling activities, prior to well development and aquifer testing. However, the initial round of ground water sampling after well development are not included in those reports. As an example, the FINAL COMPLETION REPORT CHARACTERIZATION WELL R-34 (Kleinfelder 2004 November) does not provide analytical results after well development completion on September 2, 2004. According to the IntellusNM data base, the first ground water sampling event occurred on June 7, 2005. Conversely, R-55 was developed on September 3, 2010 and IntellusNM indicates that the first ground water samples were collected on September 9, 2010, which is well within the permit requirement. Per interview with LANL EM (ADEM Meeting with Parsons, March 8, 2018), LANL does comply with collecting an initial sample within 30 days of well completion and aquifer testing. The initial sample obtained is normally a split-sample collected with NMED. Ground water samples are collected from drilled boreholes/coreholes that are drilled and not intended to be completed as monitoring wells. Specific citations include the exploratory coreholes drilled for the chromium project that were sampled for ground water prior to abandonment.
11.10.2.8: Ground Water Sampling	Water samples shall be analyzed in accordance with the Department-approved ground water monitoring work plan for one or more of the following general chemistry parameters as required by the Department: nitrate/nitrite sulfate, chloride, sodium, dissolved CO ₂ , alkalinity, carbonate/bicarbonate, boron, fluoride, manganese, calcium, silicon, ferric/ferrous iron, ammonia, potassium, phosphorus/phosphate, sulfide, bromide, magnesium, methane, TKN, total organic carbon, total dissolved solids.	Y	According to Table 1.6-2 of the IFGMP (LANL 2017g May), one or more of the general chemistry parameters are routinely sampled through the metals or general inorganics listing of analytes. Not included in the IFGMP are dissolved CO ₂ , sulfide, methane, and ammonia. Depending on which monitoring group is being evaluated, these sampling frequencies range from monthly, quarterly, semi-annually, annually, or biennially. For the sampling event witnessed at well R-29 on March 6, 2018, all the metals and general inorganic samples required by the permit and the IFGMP were obtained for laboratory analyses.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.10.2.8.i: Well Purging	All zones in each monitoring well shall be purged by removing ground water prior to sampling and in order to ensure that formation water is being sampled. Purge volumes shall be determined by monitoring, at a minimum, ground water pH, specific conductance, dissolved oxygen concentrations, turbidity, redox potential, and temperature during purging of volumes and at measurement intervals approved by the Department in writing. The ground water quality parameters shall be measured using a flow-through cell and instruments approved by the Department in writing. The volume of ground water purged, the instruments used, and the readings obtained at each interval shall be recorded on the field monitoring log. In general, water samples may be obtained from the well after the measured parameters of the purge water have stabilized to within ten percent for three consecutive measurements. Well purging may also be conducted in accordance with the Department's Position Paper "Use of Low-Flow and other Non-Traditional Sampling Techniques for RCRA Compliant ground water Monitoring" (October 30, 2001). The Permittees may submit, to the Department for approval, a written request for a variance from the described methods of well purging for individual wells no later than 90 days prior to scheduled sampling activities. The Department will respond to the request, in writing, within 60 days of receipt of the variance request.	Y	Ground water samples are collected in accordance with the IFGMP (LANL 2017g May), and the Ground Water Sampling SOP (ER-SOP-20032, R0 [LANL 2017a February]). A sampling event was witnessed on March 6, 2018 at well R-29. The sampling event witnessed was completed in accordance with the IFGMP, the ground water Sampling SOP, and the requirements of this permit section. Copies of field notes, calibration records, and purging records were provided to the review team for inspection. The monitoring event was also inspected from the IntellusNM database (https://www.intellusnm.com/reporting/reports/Views/Nonanalytical/Field/eimef_field_measurement.cfm), and information found in that public record is in agreement with the field documentation.
11.10.2.8.ii: ground water Sample Collection	ground water samples shall be obtained from each well after a sufficient amount of water has been removed from the well casing to ensure that the sample is representative of formation water. ground water samples shall be obtained using methods approved by the Department within 24 hours of the completion of well purging. Sample collection methods shall be documented in the field monitoring reports. The samples shall be transferred to the appropriate, clean, laboratory-prepared containers provided by the analytical laboratory. Sample handling and chain-of-custody procedures are described in Permit Section 11.10.2.9. Decontamination procedures shall be established for reusable water sampling equipment as described in Permit Section 11.10.2.11.	Y	Ground water samples are collected in accordance with the IFGMP (LANL 2017g May), and the Ground Water Sampling SOP (ER-SOP-20032, R0 [LANL 2017a February]). A sampling event was witnessed on March 6, 2018 at well R-29. The sampling event witnessed was completed in accordance with the IFGMP, the ground water Sampling SOP, and the requirements of this permit section. Copies of sample collection log, calibration records, and chain of custody were supplied to the review team for inspection, and were found to be in compliance with the permit requirements (April, 2017). Samples were observed being collected in clean, laboratory-prepared and supplied sample containers. The sampling team utilizes all dedicated sampling equipment for the specific well, and therefore decontamination procedures were not applicable for the R-29 sampling event.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.10.2.8.ii: Ground Water Sample Collection	All purged ground water and decontamination water shall be temporarily stored at satellite accumulation areas, transfer stations, or less-than-90-day storage areas in labeled 55-gallon drums or other containers approved by the Department until proper characterization and disposal can be arranged. The methods for disposal of purge/decontamination water shall be approved by the Department prior to removal from the temporary storage area. Disposable materials shall be handled as described in Permit Section 11.10.2.13.	N	As observed during the on-site review, purge water is temporarily stored at the wellhead in a polyethylene tank, and stored on site until validated sample results are received from the laboratory. Based on the results, the final disposition of the IDW follows the LANL Investigation-Derived Waste (IDW) Decision Tree (LANL 2018d April). The management of nonhazardous purge water complies with EPC-CP-QP-010, "Land Application of Ground Water" in accordance with NMED discharge permit DP-1793 (LANL 2012 July). If the purge water is hazardous, it is managed in accordance with hazardous waste management requirements. The exception to the permit requirement is that LANL does not transfer purged ground water to a satellite accumulation area, transfer station, or less-than-90-day storage area. However, the procedures for managing purged ground water were approved by NMED on March 12, 2010 in review of procedure ENV-RCRA-QP-010.3 (LANL 2012 July).
11.10.2.8.ii: Ground Water Sample Collection	ground water samples intended for metals analysis shall be submitted to the laboratory as total metals samples. If required by the Department, the Permittees shall obtain ground water samples for dissolved metals analysis to be filtered using disposable in-line filters with a 0.45 micron or other mesh size approved by the Department.	Y	During the on-site Review, observed R-29 sampling event on March 6, 2018, metals and general inorganics were properly filtered with an NMED approved inline, 0.45-micron filter canister.
11.10.2.8.iv: Ground Water and Surface Water Sample Types	ground water samples shall be collected from each monitoring well and surface water samples shall be collected at predetermined locations. Field duplicates, field blanks, equipment rinsate blanks, reagent blanks, if necessary, and trip blanks shall be obtained for quality assurance during ground water and surface water sampling activities. The samples shall be handled as described in Permit Section 11.10.2.9.	Y	Per the list of constituents of concern examined during the Review, LANL collects the correct QA/QC samples at the agreed-upon frequency. On March 6, 2018 at well R-29, a duplicate sample was observed. The duplicate sample was collected from a dedicated stainless steel sampling tree which includes two sampling spigots. The duplicate samples are collected simultaneously by multiple sampling crew members. A trip blank was included in the sampling storage cooler, and included on the COC. The DSR Template for the Ancho Watershed for MY2018, Q2 campaign (LANL 2018d April) shows the scheduled sampling locations (18) for the event, and lists the QA/QC samples to be collected. Field duplicates (2) were taken at a frequency greater than 10 percent. A total of 5 trip blanks, 2 field blanks, and 1 performance evaluation blank were collected during the effort. This is consistent with the procedures established within the 2018 IFGMP (LANL 2017g May).
11.10.2.8.iv: Ground Water and Surface Water Sample Types	Field duplicate surface water and ground water samples shall be obtained at a frequency of ten percent. At a minimum, one duplicate sample per sampling event shall always be obtained.	Y	LANL sampling campaigns are planned in advance to ground water monitoring event, and the location and frequency of all investigation and quality control samples are determined prior to mobilization. This includes all field duplications, field blanks, equipment rinsate blanks, reagent blanks, and trip blanks. LANL provided documentation of representative sample plan tables for the 2nd Quarter of Monitoring Year 2 for the Mortandad and Ancho Watershed campaigns (LANL 2018d April). These comprehensive tables list all the sampling locations, field sampling IDs, analytical suites, purpose (investigation or QA/QC), sample type, and field preparation (e.g., filtered). Based on these sample planning tables, it was confirmed that the planned field duplicate samples meet the 10 percent frequency requirement. Furthermore, upon review of the chain-of-custody documentation available on IntellusNM, it was confirmed that the planned field duplicate samples were collected. On March 6, 2018 at well R-29, the collection of field blank sample was observed, and was included in the sampling storage cooler, and included on the chain-of-custody record.
11.10.2.8.iv: Ground Water and Surface Water Sample Types	Field blanks shall be obtained at a frequency of no less than one per day per site or unit. Field blanks shall be generated by filling sample containers in the field with deionized water and submitting the samples, along with the ground water or surface water samples, to the analytical laboratory for the appropriate analyses.	N	Per Appendix D of the 2018 IFGMP, Field blanks are used to monitor for contamination during sampling and are collected at a minimum frequency of 10% of all samples collected in a sampling campaign. This is contrary to the HWFP requirement one sample per day per site, or unit. For the 2nd quarter or Monitoring Year 2018 it was confirmed in the IntellusNM database that only one field blank was collected for the Ancho Watershed campaign of 12 sample locations (less than 10 percent frequency).

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.10.2.8.iv: Ground Water and Surface Water Sample Types	Equipment rinsate blanks shall be obtained for chemical analysis at the rate of five percent but no fewer than one rinsate blank per sampling day. Equipment rinsate blanks shall be collected at a rate of one per sampling day if disposable sampling apparatus is used. Rinsate samples shall be generated by rinsing deionized water through unused or decontaminated sampling equipment. The rinsate sample then shall be placed in the appropriate sample container and submitted with the ground water or surface water samples to the analytical laboratory for the appropriate analyses.	N	<p>Per Appendix D of the 2018 IFGMP (LANL 2017g May), equipment rinsate blanks are used to detect any contamination resulting from contaminated equipment or poor decontamination techniques. The equipment rinsate blank is prepared by passing deionized water through unused or decontaminated sampling equipment, including Westbay sample bottles.</p> <p>Equipment rinsate blanks are collected before a well is sampled with a nondedicated pump. An equipment rinsate blank is also collected before each well equipped with a Westbay sampling system is sampled for which samples are collected for off-site analysis. Equipment rinsate blanks are not required for wells equipped with Westbay sampling systems from which samples are collected for on-site analysis only.</p> <p>Equipment rinsate blanks are analyzed for the organic constituents sampled for in the associated well, with the exception of high explosive compounds, which are not analyzed in rinsate blanks. During the secondary data validation process, equipment rinsate blanks are evaluated in the same manner as field blanks, and any detected analytes are qualified in the samples associated with the equipment rinsate blank.</p> <p>A review of chain-of-custodies in the IntellusNM database indicate that there are still a handful of wells without dedicated sampling equipment that periodically include equipment rinsate samples during a sample campaign. These include wells that are completed as Westbay multi-port wells, or alluvial or intermediate perched wells that are sampled with a bailer. The language of the 2018 IFGMP (LANL 2017g May) implies that equipment rinsate blanks are collected at a frequency of 100% at each well without dedicated sampling equipment. However, the frequency at which equipment blanks are collected could not be determined.</p>
11.10.2.8.iv: Ground Water and Surface Water Sample Types	Reagent blanks shall be obtained at a frequency of ten percent but no fewer than one per day per unit if chemical analyses requiring the use of chemical reagents are conducted in the field during water sampling activities.	NA	Chemical reagents are not used in the field for chemical analyses, therefore LANL does not collect these samples.
11.10.2.8.iv: Ground Water and Surface Water Sample Types	Trip blanks shall accompany laboratory sample bottles and shipping and storage containers intended for VOC analyses. Trip blanks shall consist of a sample of analyte-free deionized water prepared by the laboratory and placed in an appropriate sample container. The trip blank shall be prepared by the analytical laboratory prior to the sampling event and shall be kept with the shipping containers and placed with other water samples obtained from the site each day. Trip blanks shall be analyzed at a frequency of one for each shipping container of samples.	Y	LANL sampling campaigns are planned in advance to ground water monitoring event, and the location and frequency of all investigation and quality control samples are determined prior to mobilization. This includes all field duplications, field blanks, equipment rinsate blanks, reagent blanks, and trip blanks. LANL provided documentation of representative sample plan tables for the 2nd Quarter of Monitoring Year 2 for the Ancho Watershed campaign (LANL 2018d April). This comprehensive table lists all the sampling locations, field sampling IDs, analytical suites, purpose (investigation or QA/QC), sample type, and field preparation (e.g., filtered). Based on these sample planning tables, it was confirmed that the planned field trip blank samples meet the 1 sample per cooler shipment with VOC samples. On March 6, 2018 at well R-29, the collection of field blank sample was observed, and was included in the sampling storage cooler, and included on the chain-of-custody record. A review of sample chain-of-custodies on the IntellusNM database show that trip blanks are always submitted with coolers containing samples for VOC analyses.
11.10.2.12: Field Equipment Calibration Procedures	Field equipment requiring calibration shall be calibrated to known standards, in accordance with the manufacturers' recommended schedules and procedures. At a minimum, calibration checks shall be conducted daily, or at other intervals approved by the Department, and the instruments shall be recalibrated, if necessary. Calibration measurements shall be recorded in the daily field logs. If field equipment becomes inoperable, its use shall be discontinued until the necessary repairs are made. In the interim, a properly calibrated replacement instrument shall be used.	Y	LANL provided logbook documentation of equipment calibration to known standards for ground water sampling equipment used during the R-29 well sampling on March 6, 2018 (LANL 2018d April). LANL also provided factory calibration documentation of In-Situ transducers that are used to continuously monitor ground water levels in water wells (LANL 2018d April).

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.10.2.13: Collection and Management of Investigation Derived Waste</p>	<p>Investigation derived waste (IDW) includes general refuse, drill cuttings, excess sample material, water (decontamination, development and purge), and disposable equipment generated during the course of investigation, corrective action, or monitoring activities. All IDW shall be properly characterized and disposed of in accordance with all Federal, State, and local rules and regulations for storage, labeling, handling, transport, and disposal of waste. The Permittees shall include a description of anticipated management of IDW as part of the applicable work plan submitted to the Department for approval prior to disposal of any IDW produced during investigation, corrective action, or monitoring activities. The Permittees may submit a request to the Department to dispose of IDW on a case-by-case basis prior to submittal of the applicable work plan.</p>	<p>Y</p>	<p>Both the 2017 and 2018 IFGMP documents include Procedures, Methods, and Investigation-Derived Waste Management protocols as Appendix B-5.0. The IDW component of this appendix specifically references the LANL SOP for Characterization and Management of Environmental Program Waste (EP-DIR-SOP-10021 [LANL 2012 March]) and Land Application of Groundwater (ENV-RCRA-QP-010.3 [LANL 2012 July]), which describes the procedures required for characterizing and disposing of purged ground water from sampling activities. The appendix specifically dictates the protocols for waste determinations waste management procedures to be followed as part of the IFGM program.</p>
<p>11.10.2.13: Collection and Management of Investigation Derived Waste</p>	<p>All water generated during sampling and decontamination activities shall be temporarily stored at satellite accumulation areas or transfer stations in labeled 55-gallon drums or other containers approved by the Department until proper characterization and disposal can be arranged. The IDW may be characterized for disposal based on the known or suspected contaminants potentially present in the waste. The methods for waste characterization and disposal of IDW shall be approved by the Department prior to removal from the temporary storage area.</p>	<p>N</p>	<p>As observed during on site Review, purge water is temporarily stored at the wellhead in a polyethylene tank, and stored on site until validated sample results are received from the laboratory. Based on the results, the final disposition of the IDW follows the LANL Investigation-Derived Waste (IDW) Decision Tree. The management of nonhazardous purge water complies with EPC-CP-QP-010, "Land Application of Ground Water" (LANL 2012 July) in accordance with NMED discharge permit DP-1793. If the purge water is hazardous, it is managed in accordance with hazardous waste management requirements. The exception to the permit requirement is that LANL does not transfer purged ground water to a satellite accumulation area, transfer station, or less-than-90-day storage area. However, the procedures for managing purged ground water were approved by NMED on March 12, 2010 in review of procedure ENV-RCRA-QP-010.3.</p>
<p>11.10.2.14: Documentation of Field Activities</p>			
<p>11.10.2.14.i: General</p>	<p>Daily field activities, including observations and field procedures, shall be recorded on appropriate forms. The original field forms shall be maintained at the Facility. Copies of the completed forms shall be maintained in a bound and sequentially numbered field file for reference during field activities. Indelible ink shall be used to record all field activities. Photographic documentation of field activities shall be performed, as appropriate. The daily record of field activities shall include the following:</p>	<p>Y</p>	<p>Daily field forms were collected during R-29 sampling event observed during on site Review (LANL 2018d April). Review team observed copies of forms provided by the LANL Environmental Management office. Logs contained information identified under this condition as also detailed in the Ground Water Sampling SOP. Photographic logs were not included in records reviewed, however, condition states that photographic documentation shall be performed as appropriate.</p>
<p>11.10.2.14.i: General</p>	<p>(1) site or unit designation;</p>		
<p>11.10.2.14.i: General</p>	<p>(2) date;</p>		
<p>11.10.2.14.i: General</p>	<p>(3) time of arrival and departure;</p>		
<p>11.10.2.14.i: General</p>	<p>(4) field investigation team members including subcontractors and visitors;</p>		
<p>11.10.2.14.i: General</p>	<p>(5) weather conditions;</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.10.2.14.i: General	(6) daily activities and times conducted;		
11.10.2.14.i: General	(7) observations;		
11.10.2.14.i: General	(8) record of samples collected with sample designations and locations specified;		
11.10.2.14.i: General	(9) photographic log;		
11.10.2.14.i: General	(10) field monitoring data, including health and safety monitoring if conditions arise that require modification of required work;		
11.10.2.14.i: General	(11) equipment used and calibration records, if appropriate;		
11.10.2.14.i: General	(12) list of additional data sheets and maps completed;		
11.10.2.14.i: General	(13) an inventory of the waste generated and the method of storage or disposal; and		
11.10.2.14.i: General	(14) signature of personnel completing the field record.		
11.10.2.14.ii: Sample Custody	All samples collected for analysis shall be recorded in the field report or data sheets. Chain-of-custody forms shall be completed at the end of each sampling day, prior to the transfer of samples off site, and shall accompany the samples during shipment to the laboratory. A signed and dated custody seal shall be affixed to the lid of the shipping container. Upon receipt of the samples at the laboratory, the custody seals will be broken, the chain-of-custody form shall be signed as received by the laboratory, and the conditions of the samples shall be recorded on the form. The original chain-of-custody form shall remain with the laboratory and copies shall be returned to the relinquishing party. The Permittees shall maintain copies of all chain-of-custody forms generated as part of sampling activities. Copies of the chain-of-custody records (either paper copies or electronically scanned in PDF format) shall be included with all draft and final laboratory reports submitted to the Department.	Y	A chain-of-custody for well R-29 was completed and observed during the on-site Review (LANL 2018d April). The sample containers at the observed sampling event all included custody seals. The ground water sampling contractor electronically prepares the chain-of-custody on an electronic tablet, and transmits the file to the LANL Sample Management Office (SMO), along with the ground water samples. A Sample Collection/Field Chain of Custody form documents the delivery of the samples to the SMO. The SMO inventories the sample containers, reviews the laboratory chain-of-custodies, and prepares the coolers for shipment to the laboratory. Fully compliant chain-of-custodies were reviewed from within analytical data packages downloaded from the IntellusNM database. Analytical results are included as part of the final IFGMP prepared for each of the seven monitoring groups.
11.10.3: Chemical Analyses	The Permittees shall submit all samples for laboratory analysis to accredited contract laboratories. The laboratories shall use the most recent EPA and industry-accepted extraction and analytical methods for chemical analyses for target analytes as the testing methods for each medium sampled. The Permittees shall use the most sensitive laboratory methods (with the lowest detection limits) available unless specific conditions preclude their use.	Y	Analytical methods, method detection limits, and reporting limits are maintained in Appendix B of the IFGMP (see tables B-4.1-1, B-4.1-2, B-4.2-1) (LANL 2017g May). The laboratory is NELAP certified. Analytical data sheets list the extraction and analytical methods used to perform the analyses.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.10.3: Chemical Analyses	The Permittees shall submit a list of analytes and analytical methods to the Department, for review and written approval as part of each site-specific investigation, corrective action, or monitoring work plan. The detection limits for each method shall be less than applicable background, screening, and regulatory cleanup levels. The preferred method detection limits are a maximum of 20 percent of the cleanup, screening, or background levels. Analyses conducted with detection limits that are greater than applicable background, screening, and regulatory cleanup levels shall be considered data quality exceptions and the reasons for the elevated detection limits shall be reported to the Department. These data cannot be used for statistical analyses. All analytical data (non-detects, estimated blanks, and detects) shall be included in the electronic or magnetic copy of the investigation report in Microsoft™ Excel format with qualifiers as attached from the analytical laboratory. The summary tables shall include only detects of the data based on the corresponding qualifiers. The Permittees shall not censor the data based on detection limits, quantitation limits, or measurement uncertainty.	Y	Analytical methods, method detection limits, and reporting limits are maintained in Appendix B of the IFGMP (see tables B-4.1-1, B-4.1-2, B-4.2-1) (LANL 2017g May). NMED approval of the workplan Interim Facility-Wide Ground Water Monitoring Plan for the 2018 Monitoring Year, October 2017–September 2018 was received on November 9, 2017. Analytical data results are maintained by LANL Environmental Management, and are publicly available through the Electronic Public Reading Room and the IntellusNM database.
11.11: MONITORING WELL CONSTRUCTION REQUIREMENTS			
11.11.1: Types of Monitoring Wells	Two types of ground water monitoring wells may be installed at the Facility: single completion (containing one screened interval) and with Department approval, double-screened wells. General drilling procedures are presented in Permit Section 11.11.2 and monitoring well construction requirements are presented in Permit Section 11.11.3.	Y	Of the 33 monitoring well construction details reviewed, two wells (wells R-19 and R-23i) were completed with more than two screened intervals. However, per Section VI.A. of the Consent Order (NMED 2016 June) all work that was completed prior to the approval of the 2005 Consent Order and was approved by NMED or EPA, in writing, shall be deemed compliant.
11.11.2: Drilling Methods	ground water monitoring wells and piezometers must be designed and constructed in a manner which will yield high quality samples, ensure that the well will last the duration of the project, and ensure that the well will not serve as a conduit for contaminants to migrate between different stratigraphic units or aquifers. The design and construction of ground water monitoring wells shall comply with the guidelines established in various EPA RCRA guidance, including, but not limited to:	Y	As part of this review, the drilling method and construction details were reviewed for a selection of 33 monitoring wells. The wells reviewed as part of this exercise include: CDBO-6, CdV-37-1i, CdV-37-2, CdV-R-15-3, MCA-9, PAO-5n, POI-4, R-10, R-10a, R-11, R-12, R-16, R-16r, R-19, R-23, R-23i, R-24, R-27, R-27i, R-29, R-3, R-30, R-31, R-34, R-36, R-39, R-3i, R-55, R-55i, R-9, R-9i, SIMR-2, and WCO-1r. Information regarding the installation of these wells were extracted from well-specific well completion reports, geophysical logs, or summary reports pertaining to the specific monitoring groups or overarching ground water reports and studies. A summary table of the construction details has been prepared as part of this review, see Appendix B.1.6. The ground water monitoring well construction details reviewed were constructed in a manner that complies with the guidelines established in the EPA RCRA guidance named under this condition.
11.11.2: Drilling Methods	(1) U.S. EPA, RCRA ground water Monitoring: Draft Technical Guidance, EPA/530-R-93-001 (November 1992);		
11.11.2: Drilling Methods	(2) U.S. EPA, RCRA ground water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1 (September 1986); and		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.2: Drilling Methods	(3) Aller, L., Bennett, T.W., Hackett, G., Petty, R.J., Lehr, J.H., Sedoris, H., Nielsen, D.M., and Denne, J.E., Handbook of Suggested Practices for the Design and Installation of ground water Monitoring Wells, EPA 600/4-89/034 (1989).		
11.11.2: Drilling Methods	A variety of methods are available for drilling monitoring wells. While the selection of the drilling procedure is usually based on the site-specific geologic conditions, the following issues shall also be considered:		
11.11.2: Drilling Methods	(4) drilling shall be performed in a manner that minimizes impacts to the natural properties of the subsurface materials;		
11.11.2: Drilling Methods	(5) contamination and cross-contamination of ground water and aquifer materials during drilling shall be avoided;		
11.11.2: Drilling Methods	(6) the drilling method shall allow for the collection of representative samples of rock, unconsolidated materials, and soil;		
11.11.2: Drilling Methods	(7) the drilling method shall allow the Permittees to determine when the appropriate location for the screened interval(s) has been encountered; and		
11.11.2: Drilling Methods	(8) the drilling method shall allow for the proper placement of the filter pack and annular sealants. The borehole diameter shall be at least 4 inches larger in diameter than the nominal diameter of the well casing and screen to allow adequate space for placement of the filter pack and annular sealants.		
11.11.2: Drilling Methods	The drilling method shall allow for the collection of representative ground water samples. Drilling fluids (which includes air) shall be used only when minimal impact to the surrounding formation and ground water can be ensured.		Drilling methods used to drill the 33 selected borings that were later installed as monitoring wells (see Appendix B.1.6) include the following: dual rotary, air rotary, air rotary with casing hammer, mud rotary, reverse circulation air/mud rotary, hollow stem auger, sonic, and coring with hammer. As documented in the Electronic Public Reading Room (EPRR), the procedure for installing/rehabilitating a monitoring well includes the submittal of a well installation work plan to NMED for approval. If there are not comments or revisions to be made, NMED will formally approve the drilling workplan with a transmittal back to LANL. After the well is installed, LANL submits a Well Completion Report for NMED review and approval. Once accepted, NMED replies with an Approval Letter to LANL that is included in the EPRR record.
11.11.2: Drilling Methods	A brief description of the different drilling methods that may be appropriate for the construction of monitoring wells at the Facility follows. Many of these methods may be used alone, or in combination, to install monitoring wells at the Facility. While the selection of the specific drilling procedure will usually depend on the site-specific geologic conditions, justification for the method selected must be provided to the Department.	Y	

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.2.1: Hollow-Stem Auger</p>	<p>The hollow-stem continuous flight auger consists of a hollow, steel shaft with a continuous, spiraled steel flight welded onto the exterior site of the stem. The stem is connected to an auger bit and, when rotated, transports cuttings to the surface. The hollow stem of the auger allows drill rods, split-spoon core barrels, Shelby tubes, and other samplers to be inserted through the center of the auger so that samples may be retrieved during the drilling operations. The hollow stem also acts to temporarily case the borehole, so that the well screen and casing (riser) may be inserted down through the center of the augers once the desired depth is reached, minimizing the risk of possible collapse of the borehole. A bottom plug or pilot bit can be fastened onto the bottom of the augers to keep out most of the soils and/or water that have a tendency to clog the bottom of the augers during drilling. Drilling without a center plug is acceptable provided that the soil plug, formed in the bottom of the auger, is removed before sampling or installing well casings. The soil plug can be removed by washing out the plug using a side discharge rotary bit, or augering out the plug with a solid-stem auger bit sized to fit inside the hollow-stem auger. In situations where heaving sands are a problem, potable water may be poured into the augers to equalize the pressure so that the inflow of formation materials and water shall be held to a minimum when the bottom plug is removed. The hollow-stem auger method is best suited for drilling shallow overburden wells.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.2.2: Air Rotary/Air Down-The-Hole Hammer/ODEX</p>	<p>The air rotary method consists of a drill pipe or drill stem coupled to a drill bit that rotates and cuts through soils and rock. The cuttings produced from the rotation of the drilling bit are transported to the surface by compressed air, which is forced down the borehole through the drill pipe and returns to the surface through the annular space (between the drill pipe and the borehole wall). The circulation of the compressed air not only removes the cuttings from the borehole but also helps to cool the drill bit. The use of air rotary drilling is best suited for hard-rock formations. In soft unconsolidated formations, casing is driven to keep the formation from caving. When using air rotary, the air compressor shall have an in-line filter system to filter the air coming from the compressor. The filter system shall be inspected regularly to insure that the system is functioning properly. In addition, a cyclone velocity dissipater or similar air containment/dust-suppression system shall be used to funnel the cuttings to one location instead of allowing the cuttings to discharge uncontrolled from the borehole. Air rotary that employs the dual-tube (reverse circulation) drilling system is acceptable because the cuttings are contained within the drill stem and are discharged through a cyclone velocity dissipater to the ground surface.</p>		
<p>11.11.2.2: Air Rotary/Air Down-The-Hole Hammer/ODEX</p>	<p>The injection of air into the borehole during air rotary drilling has the potential to alter the natural properties of the subsurface. This can occur through air-stripping of the VOCs in both soil and ground water in the vicinity of the borehole, altering the ground water geochemical parameters (e.g., pH and redox potential), and potentially increasing biodegradation of organic compounds in the aquifer near the borehole. These factors may prevent the well from yielding ground water samples that are representative of in-situ conditions.</p>		
<p>11.11.2.2: Air Rotary/Air Down-The-Hole Hammer/ODEX</p>	<p>In hard, abrasive, consolidated rock, a down-the-hole hammer may be more appropriate than the air rotary method. In this method, compressed air is used to actuate and operate a pneumatic hammer as well as lift the cuttings to the surface and cool the hammer bit. One drawback of the down-the-hole hammer is that oil is required in the air stream to lubricate the hammer-actuating device, and this oil could potentially contaminate the soil in the vicinity of the borehole and the aquifer.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.2.2: Air Rotary/Air Down-The-Hole Hammer/ODEX</p>	<p>The ODEX method is a variation of the air rotary method in which a casing-driving technique is used in combination with air rotary drilling. With the ODEX system, the drill bit extends outward and reams a pilot hole large enough for a casing assembly to slide down behind the drill bit assembly. As a result, casing is advanced simultaneously while drilling the hole.</p>		
<p>11.11.2.3: Water Rotary and Mud Rotary</p>	<p>The water and mud rotary drilling methods consist of rotary drilling techniques where water or drilling mud is used as the circulating fluid. In both methods, the circulating fluid is pumped down through the drill pipe and is returned back up the borehole through the annular space. The circulating fluid stabilizes the borehole, cools the drill bit, and carries the drill cuttings up to the surface. While the water and mud rotary drilling techniques are rapid and effective drilling methods, the recognition of water-bearing zones is hampered by the addition of water into the system. Mud rotary drilling methods are discouraged if the well is to be used for monitoring of water quality.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.2.3: Water Rotary and Mud Rotary</p>	<p>Mud rotary drilling is similar to water rotary drilling with the exception that mud additives are added to the water to change the properties (e.g., density, viscosity, yield point, gel strength, fluid-loss-control effectiveness, and lubricity) of the circulating fluid. Drilling muds provide greater borehole stabilization than water alone. There are several types of mud presently available, including bentonite, barium sulfate, organic polymers, cellulose polymers, and polyacrylamides. While drilling muds enhance the stability of the borehole and allow for drilling in formations not appropriate to other methods, they can adversely affect the hydrologic properties and geochemistry of the aquifer. For example, drilling fluid invasion and the buildup of borehole filter cake may reduce the effective porosity of the aquifer in the vicinity of the borehole. In addition, bentonite drilling muds may affect the pH of ground water and organic polymer drilling muds have been observed to facilitate bacterial growth, which reduces the reliability of sampling results. If polymer emulsions are to be used in the drilling program at the Facility, polymer dispersion agents shall be used at the completion of the drilling program to remove the polymers from the boreholes. For example, if EZ Mud® is used as a drilling additive, a dispersant (e.g., BARAFOS® or five percent sodium hypochlorite) shall be used to disperse and chemically break down the polymer prior to developing and sampling the well. If drilling fluids are used as part of well installation, the Permittees must demonstrate that all data acquired from the well is representative of existing subsurface conditions using methods approved by the Department. The Department may require additional sampling and testing periodically to ensure that the data collected is not affected by residual drilling fluids.</p>		
<p>11.11.2.4: Dual-Wall Reverse Circulation</p>	<p>The dual-wall reverse circulation drilling method utilizes a double-wall drill pipe and has the reverse circulation of other conventional rotary drilling methods. The circulating fluid (water or air) is pumped down the borehole between the outer and inner drill pipe, and returns up the inner drill pipe. Cuttings are lifted to the surface through the inner drill pipe. The inner drill pipe rotates the bit, and the outer drill pipe acts as a casing and stabilizes the borehole. Typically, a tri-cone bit is used when drilling through unconsolidated formations and a down-the-hole hammer is used in hard rock.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.2.4: Dual-Wall Reverse Circulation</p>	<p>The dual-wall reverse circulation rotary method is one of the better methods available for obtaining representative and continuous formation samples while drilling. If a roller cone bit is used, the formation that is being drilled is located only a few inches ahead of the double-wall pipe. As a result, the cuttings observed at the surface represent no more than one foot of the formation at any point in time.</p>		
<p>11.11.2.4: Dual-Wall Reverse Circulation</p>	<p>When drilling with air, an in-line filter shall be used to remove oil or other impurities from the airstream. However, if a down-the-hole hammer is used, it must be used with caution since it requires oil in the airstream to lubricate the hammer. This could possibly introduce contaminants to the borehole and aquifer.</p>		
<p>11.11.2.5: Resonant Sonic</p>	<p>Resonant sonic drilling is a method that uses a sonic drill head to produce high-frequency, high-force vibrations in a steel drill pipe. The vibrations in the pipe create a cutting action at the bit face, which allows a continuous core of the formation to move into a core barrel. The method requires no drilling fluid, drills very fast (up to one ft/sec in certain formations), drills at any angle through all formations (rock, clay, sand, boulders, permafrost, glacial till), and yields virtually no cuttings in the drilling process. While there are numerous advantages to this process, the primary disadvantage is the cost of the method. This drilling method has been proven and used at various facilities.</p>		
<p>11.11.2.6: Cryogenic</p>	<p>Cryogenic drilling is a technique that uses standard air rotary drilling methods, but employs cold nitrogen gas as the circulating fluid instead of compressed air. The use of nitrogen gas as the circulation fluid freezes the borehole wall while drilling, which stabilizes unconsolidated sediments and prevents potential cross-contamination of different water-bearing zones. In addition, the method produces fewer cuttings than liquid based drilling methods, requires minimal equipment modifications to existing drill rigs, and does not add contaminants to the borehole during the drilling process due to the benign nature of nitrogen gas. The method is especially applicable for drilling through alternating hard (competent) and soft (unconsolidated) formations. This drilling method has been tested by the DOE and proposed for future use at various DOE facilities.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.3: Well Construction/Completion Methods			
11.11.3.1: Well Construction Materials	Well construction materials shall be selected based on the goals and objectives of the proposed monitoring program and the geologic conditions at the site. When selecting well construction materials, the primary concern shall be selecting materials that will not contribute foreign constituents or remove contaminants from the ground water. Other factors to be considered include the tensile strength, compressive strength, and collapse strength of the materials; length of time the monitoring well will be in service; and the material's resistance to chemical and microbiological corrosion. Generally, if the monitoring program requires the analysis of only organic constituents, stainless steel should be used. However, if the monitoring program requires only inorganic constituent analyses, polyvinyl chloride (PVC) materials may be used. PVC should not be used for monitoring wells where organic constituents will be analyzed due to its potential for sorption and leaching of contaminants.		The monitoring wells were completed using Schedule 40 PVC or 304/316 Stainless Steel according to the monitoring well construction details reviewed (See Appendix B.1.6).
11.11.3.1: Well Construction Materials	Well screen and casing materials acceptable for the construction of RCRA monitoring wells include stainless steel (304 or 316), rigid PVC (meeting American National Standards Institute/National Sanitation Foundation Standard 14), and fluoropolymer materials (polytetrafluoroethylene, fluorinated ethylene propylene, and polyvinylidene). In addition, there are other materials available for the construction of monitoring wells including acrylonitrile butadiene styrene (ABS), fiberglass-reinforced plastic (FRP), black iron, carbon steel, and galvanized steel, but these materials are not recommended for use in long term monitoring wells due to their low resistance to chemical attack and potential contribution of contamination to the ground water. However, these materials may be used in the construction of monitoring wells where they will not be in contact with the ground water that will be sampled (e.g., carbon steel pipe used as surface casing).	Y	

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.3.2: Well Construction Techniques			
11.11.3.2.i: Single-cased Wells	The borehole shall be bored, drilled, or augered as close to vertical as possible, and checked with a plumb bob, level, or appropriate downhole logging tool. Slanted boreholes shall not be acceptable unless specified in the design. The borehole shall be of sufficient diameter so that well construction can proceed without major difficulties. To assure an adequate size, a minimum two-inch annular space is required between the casing and the borehole wall (or the hollow-stem auger wall). The two-inch annular space around the casing will allow the filter pack, bentonite seal, and annular grout to be placed at an acceptable thickness. Also, the two-inch annular space will allow up to a 1.5-inch outer diameter tremie pipe to be used for placing the filter pack, bentonite seal, and grout at the specified intervals.	Y	According to the well construction details reviewed, boreholes were drilled as close to vertical as possible. Once completed, boreholes were logged with an array of geophysical tools, one of which measures borehole deviation and azimuth in the open-hole to evaluate borehole position versus depth. Well construction details reviewed documented that a minimum two-inch annular space exists between the casings and the borehole walls (or the hollow-stem auger wall).
11.11.3.2.i: Single-cased Wells	It may be necessary to over-drill the borehole so that any soils that have not been removed (or that have fallen into the borehole during augering or drill stem retrieval) will fall to the bottom of the borehole below the depth where the filter pack and well screen are to be placed. Normally, three to five feet is sufficient for over-drilling shallow wells. Deep wells may require deeper over-drilling. The borehole can also be over-drilled to allow for an extra space for a well sump to be installed. If the borehole is over-drilled deeper than desired, it can be backfilled to the designated depth with bentonite pellets or the filter pack.	Y	According to well construction details reviewed, boreholes were overdrilled a minimum of 2.8 feet (shallow well R-27i) and up to 145 feet (deep well R-34).

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.3.2.i: Single-cased Wells</p>	<p>The well casings (riser assembly) should be secured to the well screen by flush-jointed threads or other appropriate connections and placed into the borehole and plumbed by the use of centralizers, a plumb bob, or a level. No petroleum-based lubricating oils or grease shall be used on casing threads. Teflon tape can be used to wrap the threads to insure a tight fit and minimize leakage. No glue of any type shall be used to secure casing joints. Teflon “O” rings can also be used to ensure a tight fit and minimize leakage. “O” rings made of materials other than Teflon are not acceptable if the well will be sampled for organic compound analyses. Before the well screen and casings are placed at the bottom of the borehole, at least six inches of filter material shall be placed at the bottom to serve as a firm footing. The string of well screen and casing should then be placed into the borehole and plumbed. If centralizers are used, they shall be placed below the well screens and above the bentonite annular seals so that the placement of the filter pack, overlying bentonite seal, and annular grout will not be hindered. Centralizers placed in the wrong locations can cause bridging during material placement. If installing the well screen and casings through hollow-stem augers, the augers shall be slowly extracted as the filter pack, bentonite seal, and grout are tremied or poured into place. The gradual extraction of the augers will allow the materials being placed in the augers to flow out of the bottom of the augers into the borehole. If the augers are not gradually extracted, the materials will accumulate at the bottom of the augers causing potential bridging problems. After the string of well screen and casing is plumb, the filter material shall be placed around the well screen (preferably by the tremie pipe method) up to the designated depth. After the filter pack has been installed, the bentonite seal shall be placed directly on top of the filter pack up to the designated depth or a minimum of two feet above the filter pack, whichever is greater. After the bentonite seal has hydrated for the specified time, the annular grout shall be pumped by the tremie method into the annular space around the casings (riser assembly) up to within two feet of the ground surface or below the frost line, whichever is greater. The grout shall be allowed to cure for a minimum of 24 hours before the surface pad and protective casing are installed. After the surface pad and protective casing are installed, bumper guards (guideposts) shall be installed (if necessary).</p>	<p>Y</p>	<p>According to the well construction records reviewed, well casings were secured to the well screen by flush-jointed threads or welded connections and subsequently placed into the borehole on at least 6-inches of filter pack. The well screens and casings were plumbed by the use of centralizers installed above and below the well screens.</p>

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.3.2.ii: Double-cased Wells</p>	<p>Double-cased wells should be constructed when there is reason to believe that interconnection of two aquifers by well construction may cause cross contamination, or when flowing sands make it impossible to install a monitoring well using conventional methods. A pilot borehole should be advanced through the overburden and the contaminated zone into a clay, confining layer, or bedrock. An outer casing (surface or pilot casing) shall be placed into the borehole and sealed with grout. The borehole and outer casing should extend into tight clay a minimum of two feet or into competent bedrock a minimum of one foot. The total depth into the clay or bedrock will vary depending upon the plasticity of the clay and the extent of weathering and fracturing of the bedrock. The size of the outer casing shall be of sufficient inside diameter to contain the inner casing and the two-inch annular space. In addition, the borehole shall be of sufficient size to contain the outer casing and the two-inch minimum outer annular space, if applicable.</p>		<p>Several of the wells reviewed were installed with double or triple casings (See Appendix B.1.6). The size of the outer casings is of sufficient inside diameter to contain the inner casing with a minimum of two-inches of annular space. In addition, the boreholes are of sufficient size to contain the outer casing with a minimum of two-inches of outer annular space.</p>
<p>11.11.3.2.ii: Double-cased Wells</p>	<p>The outer casing shall be grouted by the tremie method from the bottom of the borehole to within two feet of the ground surface. The grout shall be pumped into the annular space between the outer casing and the borehole wall. This can be accomplished by either placing the tremie pipe in the annular space and pumping the grout from the bottom of the borehole to the surface, or placing a grout shoe or plug inside the casing at the bottom of the borehole and pumping the grout through the bottom grout plug and up the annular space on the outside of the casing. The grout shall consist of a Type I Portland cement and bentonite or other approved grout to provide a rigid seal. A minimum of 24 hours shall be allowed for the grout plug (seal) to cure before attempting to drill through it. When drilling through the seal, care shall be taken to avoid cracking, shattering, and washing out of the seal. If caving conditions exist so that the outer casing cannot be sufficiently sealed by grouting, the outer casing shall be driven into place and a grout seal placed in the bottom of the casing.</p>	<p>Y</p>	

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.3.2.iii: Bedrock Wells</p>	<p>The installation of monitoring wells into bedrock can be accomplished in two ways. The first method is to drill or bore a pilot borehole through the soil overburden into the bedrock. An outer casing is installed into the borehole by setting it into the bedrock, and grouting it into place. After the grout has set, the borehole can be advanced through the grout seal into the bedrock. The preferred method of advancing the borehole into the bedrock is rock coring. Rock coring makes a smooth, round hole through the seal and into the bedrock without cracking or shattering the seal. Roller cone bits are used in soft bedrock, but extreme caution should be taken when using a roller cone bit to advance through the grout seal in the bottom of the borehole because excessive water and bit pressure can cause cracking, eroding (washing), and/or shattering of the seal. Low volume air hammers may be used to advance the borehole, but they have a tendency to shatter the seal because of the hammering action. If the structural integrity of the grout seal is in question, a pressure test can be utilized to check for leaks. If the seal leaks, the seal is not acceptable. When the drilling is complete, the finished well will consist of an open borehole from the ground surface to the bottom of the well. The major limitation of open borehole bedrock wells is that the entire bedrock interval serves as the monitoring zone.</p>	<p>Y</p>	<p>According to the well construction details reviewed, all of the bedrock wells were installed with an outer surface casing followed by drilling the borehole into bedrock. Once the target depth was reached the borehole was completed as a monitoring well by installing an inner casing and well screen with the filter pack, bentonite seal, and annular grout. The wells were then completed with a surface protective casing and concrete pad.</p>
<p>11.11.3.2.iii: Bedrock Wells</p>	<p>The second method is to install the outer surface casing and drill the borehole into bedrock, and then install an inner casing and well screen with the filter pack, bentonite seal, and annular grout. The well is completed with a surface protective casing and concrete pad. This well installation method gives the flexibility of isolating the monitoring zone(s) and minimizing inter-aquifer flow. In addition, it gives structural integrity to the well, especially in unstable areas (e.g., steeply dipping shales) where the bedrock has a tendency to shift or move when disturbed.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.3.3: Well Screen and Filter Pack Design</p>	<p>Well screens and filter packs shall be designed to accurately sample the aquifer zone that the well is intended to sample, minimize the passage of formation materials (turbidity) into the well, and ensure sufficient structural integrity to prevent the collapse of the intake structure. The selection of the well screen length depends upon the objective of the well. Piezometers and wells where only a discrete flow path is monitored are generally completed with short screens (two feet or less). While monitoring wells are usually constructed with longer screens (usually five to ten ft), they shall be kept to the minimum length appropriate for intercepting a contaminant plume. The screen slot size shall be selected to retain from 90 to 100 percent of the filter pack material in artificially filter packed wells, and from 50 to 100 percent of the formation material in naturally packed wells. All well screens shall be factory wire-wrapped or machine slotted.</p>		<p>According to well construction details reviewed (see Appendix B.1.6), wells were installed with appropriate screen lengths and filter packs consisting of clean, rounded to well-rounded, hard, insoluble particles of siliceous composition (industrial grade quartz sand or glass beads). Nearly all wells reviewed were constructed with wire-wrapped stainless steel screen material with an annular filter pack that is appropriately matched to the slot size of the screen opening. Several wells with PVC screens are reported to have machine-slotted screens (PAO-5n, POI-4, R-3i, and WCO-1r). MCA-9 included a pre-packed PVC well screen. The well screen and filter pack design is typically included in the well installation work plans.</p>
<p>11.11.3.3: Well Screen and Filter Pack Design</p>	<p>A filter pack shall be used when: 1) the natural formation is poorly sorted; 2) a long screen interval is required or the screen spans highly stratified geologic materials of widely varying grain sizes; 3) the natural formation is uniform fine sand, silt, or clay, 4) the natural formation is thin-bedded; 5) the natural formation is poorly cemented sandstone; 6) the natural formation is highly fractured or characterized by relatively large solution channels; 7) the natural formation is shale or coal that will act as a constant source of turbidity to ground water samples; or 8) the diameter of the borehole is significantly greater than the diameter of the screen. The use of natural formation material as a filter pack is only recommended when the natural formation materials are relatively coarse-grained, permeable, and uniform in grain size.</p>	<p>Y</p>	
<p>11.11.3.3: Well Screen and Filter Pack Design</p>	<p>Filter pack materials shall consist of clean, rounded to well-rounded, hard, insoluble particles of siliceous composition (industrial grade quartz sand or glass beads). The required grain-size distribution or particle sizes of the filter pack materials shall be selected based upon a sieve analysis of the aquifer materials or the formation to be monitored, or the characteristics of the aquifer materials using information acquired during previous investigations.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.3.3: Well Screen and Filter Pack Design</p>	<p>Where sieve analyses are used to select the appropriate filter pack particle size, the results of a sieve analysis of the formation materials are plotted on a grain-size distribution graph, and a grain-size distribution curve is generated. The 70 percent retained grain size value should be multiplied by a factor between four and six (four for fine, uniform formations and six for coarse, non-uniform formations). A second grain-size distribution curve is then drawn on the graph for this new value, ensuring that the uniformity coefficient does not exceed 2.5. The filter pack that shall be used will fall within the area defined by these two curves.</p>		
<p>11.11.3.3: Well Screen and Filter Pack Design</p>	<p>Once the filter pack size is determined, the screen slot size shall be selected to retain at least 90 percent of the filter pack material. The Permittees may propose the use of a pre-determined well screen slot size and filter pack for monitoring wells in the site-specific work plans submitted to the Department.</p>		
<p>11.11.3.3: Well Screen and Filter Pack Design</p>	<p>The filter pack shall be installed in a manner that prevents bridging and particle-size segregation. Filter packs placed below the water table shall be installed by the tremie pipe method. Filter pack materials shall not be poured into the annular space unless the well is shallow (e.g., less than 30 feet deep) and the filter pack material can be poured continuously into the well without stopping. At least two inches of filter pack material shall be installed between the well screen and the borehole wall, and two feet of material shall extend above the top of the well screen. A minimum of six-inches of filter pack material shall also be placed under the bottom of the well screen to provide a firm footing and an unrestricted flow under the screened area. In deep wells (e.g., greater than 200 feet deep), the filter pack may not compress when initially installed. As a result, filter packs may need to be installed as high as five feet above the screened interval in these situations. The precise volume of filter pack material required shall be calculated and recorded before placement, and the actual volume used shall be determined and recorded during well construction. Any significant discrepancy between the calculated and actual volume shall be explained. Prior to installing the filter pack annular seal, a one to two-foot layer of chemically inert fine sand shall be placed over the filter pack to prevent the intrusion of annular sealants into the filter pack.</p>		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.3.4: Annular Sealant</p>	<p>The annular space between the well casing and the borehole must be properly sealed to prevent cross-contamination of samples and the ground water. The materials used for annular sealants shall be chemically inert with respect to the highest anticipated concentration of chemical constituents expected in the ground water at the Facility. In general, the permeability of the sealing material shall be one to two orders of magnitude lower than the least permeable parts of the formation in contact with the well. The precise volume of annular sealants required shall be calculated and recorded before placement, and the actual volume shall be determined and recorded during well construction. Any significant discrepancy between the calculated volume and the actual volume shall be explained.</p>		<p>According to well construction details reviewed, high solids bentonite was used as the annular seal material. Annular seal volume calculations versus actual volumes were documented on each construction log. A minimum of two vertical feet of seal was placed a minimum of two feet above the filter pack through a tremie pipe in each well reviewed. After placement, the bentonite was allowed to cure for a minimum of 4 hours.</p>
<p>11.11.3.4: Annular Sealant</p>	<p>During well construction, an annular seal shall be placed on top of the filter pack. This seal shall consist of a high solids (10-30 percent) bentonite material in the form of bentonite pellets, granular bentonite, or bentonite chips. The bentonite seal shall be placed in the annulus through a tremie pipe if the well is deep (greater than 30 ft), or by pouring directly down the annulus in shallow wells (less than 30 ft). If the bentonite materials are poured directly down the annulus (which is an acceptable method only in wells less than 30 feet deep), a tamping device shall be used to ensure that the seal is emplaced at the proper depth and the bentonite has not bridged higher in the well casing. The bentonite seal shall be placed above the filter pack a minimum of two feet vertical thickness. The bentonite seal shall be allowed to completely hydrate in conformance with the manufacturer's specifications prior to installing the overlying annular grout seal. The time required for the bentonite seal to completely hydrate will differ with the materials used and the specific conditions encountered, but is generally a minimum of four to 24 hours.</p>	<p>Y</p>	

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.3.4: Annular Sealant	A grout seal shall be installed on top of the filter pack annular seal. The grout seal may consist of a high solids (30 percent) bentonite grout, a neat cement grout, a cement/bentonite grout, or other suitable seal material that is approved by the Department. The grout shall be pumped under pressure (not gravity fed) into the annular space by the tremie pipe method, from the top of the filter pack annular seal to within a few feet of the ground surface. The tremie pipe shall be equipped with a side discharge port (or bottom discharge for grouting at depths greater than 100 feet) to minimize damage to the filter pack or filter pack annular bentonite seal during grout placement. The grout seal shall be allowed to cure for a minimum of 24 hours before the concrete surface pad is installed. All grouts shall be prepared in accordance with the manufacturer's specifications. High solids (30 percent) bentonite grouts shall have a minimum density of 10 pounds per gallon (as measured by a mud balance) to ensure proper setup. Cement grouts shall be mixed using six and one-half to seven gallons of water per 94-pound bag of Type I Portland cement. Bentonite (five to ten percent) may be added to delay the setting time and reduce the shrinkage of the grout.	Y	According to the well construction reports reviewed, a grout seal consisting of a high solids bentonite grout, a neat cement grout, or a cement/bentonite grout was pumped and placed above the bentonite seal through a tremie pipe. The grout seal was allowed to cure for a minimum of 24 hours before the concrete surface pad was installed.
11.11.4: Well Development	All monitoring wells shall be developed to create an effective filter pack around the well screen, correct damage to the formation caused by drilling, remove fine particles from the formation near the borehole, and assist in restoring the natural water quality of the aquifer in the vicinity of the well. Development stresses the formation around the screen, as well as the filter pack, so that mobile fines, silts, and clays are pulled into the well and removed. Development is also used to remove any foreign materials (e.g., water, drilling mud) that may have been introduced into the borehole during the drilling and well installation activities, and to aid in the equilibration that will occur between the filter pack, well casing, and the formation water. The development of a well is extremely important to ensuring the collection of representative ground water samples.	Y	According to well construction reports reviewed, well development activities were performed after a minimum time period of 48 hours after the surface pad and outer protective casing were installed. Well development was performed by a combination of the following procedures: bailing, surging, pumping, jetting, and/or airlifting (See Appendix B.1.6). Each of the monitoring wells records reviewed documented that they were developed until the column of water in the well was free of visible sediment, and the pH, temperature, turbidity, and specific conductivity had stabilized.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.4: Well Development	<p>Newly installed monitoring wells shall not be developed for at least 48 hours after the surface pad and outer protective casing are installed. This will allow sufficient time for the well materials to cure before the development procedures are initiated. A new monitoring well shall be developed until the column of water in the well is free of visible sediment, and the pH, temperature, turbidity, and specific conductivity have stabilized. In most cases, the above requirements can be satisfied. However, in some cases, the pH, temperature, and specific conductivity may stabilize but the water remains turbid. In this case, the well may still contain well construction materials, such as drilling mud in the form of a mud cake or formation soils that have not been washed out of the borehole. Thick drilling mud cannot be flushed out of a borehole with one or two well volumes of flushing. Instead, continuous flushing over a period of several days may be necessary to complete the well development. If the well is pumped dry, the water level shall be allowed to sufficiently recover before the next development period is initiated. The common methods used for developing wells include:</p>		
11.11.4: Well Development	(1) pumping and over-pumping;		
11.11.4: Well Development	(2) backwashing;		
11.11.4: Well Development	(3) surging (with a surge block);		
11.11.4: Well Development	(4) bailing;		
11.11.4: Well Development	(5) jetting; and		
11.11.4: Well Development	(6) airlift pumping.		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.11.4: Well Development</p>	<p>These development procedures can be used, either individually or in combination, to achieve the most effective well development. However, the most favorable well development methods include pumping, over-pumping, bailing, surging, or a combination of these methods. Well development methods and equipment that alter the chemical composition of the ground water shall not be used. Development methods that involve adding water or other fluids to the well or borehole, or that use air to accomplish well development should be avoided, if possible. Approval shall be obtained from the Department prior to introducing air, water, or other fluids into the well for the purpose of well development. If water is introduced to a borehole during well drilling and completion, then the same or greater volume of water shall be removed from the well during development. In addition, the volume of water withdrawn from a well during development shall be recorded, and the Permittees shall use their best efforts to avoid pumping wells dry during development activities.</p>		
<p>11.11.5: Surface Completion</p>	<p>Monitoring wells may be completed either as flush-mounted wells, or as above-ground completions. A surface seal shall be installed over the grout seal and extended vertically up the well annulus to the land surface. The lower end of the surface seal shall extend a minimum of 1 foot below the frost line to prevent damage from frost heaving. The composition of the surface seal shall be neat cement or concrete. In above-ground completions, a three-foot wide, four-inch thick concrete surface pad shall be installed around the well at the same time the protective casing is installed. The surface pad shall be sloped so that drainage will flow away from the protective casing and off the pad. In addition, a minimum of one inch of the finished pad shall be below grade or ground elevation to prevent washing and undermining by soil erosion.</p>	<p>Y</p>	<p>For the 33 wells evaluated as part of this review, the surface completion requirements of the HWFP have been met. Each of the wells reviewed include an above-grade surface completion with a locking well protector and sloped concrete pad to drain away surface waters.</p>

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.5: Surface Completion	A locking protective casing shall be installed around the well casing (riser) to prevent damage or unauthorized entry. The protective casing shall be anchored in the concrete surface pad below the frost line and extend several inches above the well riser stickup. A weep hole shall be drilled into the protective casing just above the top of the concrete surface pad to prevent water from accumulating and freezing inside the protective casing around the well riser. A cap shall be placed on the well riser to prevent tampering or the entry of foreign materials, and a lock shall be installed on the protective casing to provide security. If the wells are located in an area that receives traffic, a minimum of three bumper guards consisting of steel pipes three to four inches in diameter and a minimum of five-foot length should be installed. The bumper guards should be installed to a minimum depth of two feet below the ground surface in a concrete footing and extend a minimum of three feet above ground surface. The pipes should be filled with concrete to provide additional strength. The pipes should be painted a bright color to reduce the possibility of vehicular damage.	Y	For the 33 wells evaluated as part of this review, the surface completion requirements of the HWFP have been met. Each of the wells reviewed include an above-grade completion surface completion with a locking well protector and sloped concrete pad to drain away surface waters. Wells observed in the field by the reviewers all included locked caps and weep holes, and painted bollards at wells in high-traffic areas.
11.11.5: Surface Completion	If flush-mounted completions are required (e.g., in active roadway areas), a protective structure such as a utility vault or meter box should be installed around the well casing. In addition, measures should be taken to prevent the accumulation of surface water in the protective structure and around the well intake. These measures should include outfitting the protective structure with a steel lid or manhole cover that has a rubber seal or gasket, and ensuring that the bond between the cement surface seal and the protective structure is watertight.	Y	Flush-mounted surface completions were observed in the Chromium Remediation site. Extraction and Injection wells are completed in large and sturdy below-grade traffic rated vaults.
11.11.7: Documentation	All information on the design, construction, and development of each monitoring well shall be recorded and presented on a boring log, a well construction log, and well construction diagram. The well construction log and well construction diagram shall include the following information:	Y	Each monitoring well is documented in a Monitoring Well Completion Report available through the IntellusNM or EPRR websites. Each report documents condition 11.11.7 (1) through (31) : drilling method, lithology, ground water occurrence, construction dates, and required well construction data.
11.11.7: Documentation	(1) well name/number;		
11.11.7: Documentation	(2) date/time of well construction;		
11.11.7: Documentation	(3) borehole diameter and well casing diameter;		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.7: Documentation	(4) well depth;		
11.11.7: Documentation	(5) casing length;		
11.11.7: Documentation	(6) casing materials;		
11.11.7: Documentation	(7) casing and screen joint type;		
11.11.7: Documentation	(8) screened interval(s);		
11.11.7: Documentation	(9) screen materials;		
11.11.7: Documentation	(10) screen slot size and design;		
11.11.7: Documentation	(11) filter pack material and size;		
11.11.7: Documentation	(12) filter pack volume (calculated and actual);		
11.11.7: Documentation	(13) filter pack placement method;		
11.11.7: Documentation	(14) filter pack interval(s);		
11.11.7: Documentation	(15) annular sealant composition;		
11.11.7: Documentation	(16) annular sealant placement method;		
11.11.7: Documentation	(17) annular sealant volume (calculated and actual);		
11.11.7: Documentation	(18) annular sealant interval(s);		
11.11.7: Documentation	(19) surface sealant composition;		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.11.7: Documentation	(20) surface seal placement method;		
11.11.7: Documentation	(21) surface sealant volume (calculated and actual);		
11.11.7: Documentation	(22) surface sealant interval;		
11.11.7: Documentation	(23) surface seal and well apron design and construction;		
11.11.7: Documentation	(24) well development procedure and turbidity measurements;		
11.11.7: Documentation	(25) well development purge volume(s) and stabilization parameter measurements;		
11.11.7: Documentation	(26) type and design and construction of protective casing;		
11.11.7: Documentation	(27) well cap and lock;		
11.11.7: Documentation	(28) ground surface elevation;		
11.11.7: Documentation	(29) survey reference point elevation on well casing;		
11.11.7: Documentation	(30) top of monitoring well casing elevation; and		
11.11.7: Documentation	(31) top of protective steel casing elevation.		

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.12: REPORTING REQUIREMENTS			
11.12.4: Periodic Monitoring Report	The Permittees shall use the following guidance for preparing periodic monitoring reports. The reports shall present the reporting of periodic ground water, surface water, vapor, and remediation system monitoring at the Facility. The following sections provide a general outline for monitoring reports, and also provide the minimum requirements for reporting for specific Facility sites, areas, and regional monitoring. All data collected during each monitoring and sampling event in the reporting period shall be included in the reports. In general, interpretation of data shall be presented only in the background, conclusions, and recommendations sections of the reports. The other text sections of the reports shall be reserved for presentation of facts and data without interpretation or qualifications.	Y	Seven monitoring group reports are generated by LANL on an periodic basis as stipulated in the IFGMP to meet the reporting requirements of the approved work plan. For this section of the permit, multiple 2016-2017 Periodic Monitoring Reports for the monitoring groups stipulated in the IFGMP were reviewed: -TA 21 (LANL 2018a February) -TA 16 260 (LANL 2017i August) -MDA AB (LANL 2017h August) -MDA C (LANL 2017e May) -Chromium Investigation (LANL 2016c August) -General Surveillance groups (LANL 2016e November; LANL 2017j November).
11.12.4.1: Title Page	The title page shall include the type of document; Facility name; area designation; Solid Waste Management Unit (SWMU) or Area of Concern (AOC) name, site, watershed, and any other unit name; and the submittal date. A signature block providing spaces for the names and titles of the responsible DOE and LANS representatives shall be provided on the title page in accordance with 40 CFR § 270.11(d)(1).	Y	The first page of each respective report meets this requirement.
11.12.4.2: Executive Summary (Abstract)	The executive summary or abstract shall provide a brief summary of the purpose, scope, and results of the monitoring conducted at the subject site during the reporting period. The area (e.g., Plume-front, Facility-wide) SWMU, AOC and site name, location, and/or area designation shall be included in the executive summary. In addition, this section shall include a brief summary of conclusions based on the monitoring data collected.	Y	This section generally meets the requirement of the permit. Conclusions are limited to enumerating the number and type of analytical result exceedances relative to a specific screening value.
11.12.4.3: Table of Contents	The table of contents shall list all text sections, subsections, tables, figures, and appendices or attachments included in the report. The corresponding page numbers for the titles of each section of the report shall be included in the table of contents.	Y	The table of contents for the ground water reports meets the requirement of the permit. Definitions of acronyms and abbreviations follow the table of contents.
11.12.4.4: Introduction	The introduction section shall include the Facility name, area designation physical area and/or, unit location, and unit status as applicable (e.g. closed, corrective action). General information on the site usage and status shall be included in this section. A brief description of the purpose of the monitoring, type of monitoring conducted, and the type of results presented in the report also shall be provided in this section.	Y	The introduction contains the information specified under this condition.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.12.4.5: Scope of Activities	A section on the scope of activities shall briefly describe all activities performed during the monitoring event or reporting period including field data collection, analytical testing, remediation system monitoring, if applicable, and purge/decontamination water storage and disposal.	Y	The scope of activities is described as outlined under this condition.
11.12.4.6: Regulatory Criteria	A section on regulatory criteria shall provide information regarding applicable cleanup standards, risk-based screening levels and risk-based cleanup goals for the subject site. A separate table summarizing the applicable screening levels or standards or inclusion of the applicable cleanup standards or screening levels in the data tables can be substituted for this section. The appropriate cleanup or screening levels for each site shall be included, if site-specific levels have been established at separate sites. Risk-based evaluation procedures, if used to calculate cleanup or screening levels, must either be included as an attachment or referenced. The specific document and page numbers must be included for all referenced materials.	Y	Although there isn't a specific section for regulatory criteria, a discussion of the applicable regulatory cleanup standards is included with the introduction. As an alternative method of presentation as given in this permit requirement, the applicable cleanup standard for each analyte is included within Table 3.4-2 of the 2017 General Surveillance Monitoring Group report (November, 2017). Similar tables are included in the companion monitoring group reports. No site-specific levels have been established for the individual monitoring groups. As an example, the sources for screening levels are provided in Table 4.2-1 of the 2017 General Surveillance Monitoring Group report (LANL 2017j November).
11.12.4.7: Monitoring Results	A section shall provide a summary of the results of monitoring conducted at the site. This section shall include the dates and times that monitoring was conducted, the measured depths to ground water, directions of ground water flow, field air and water quality measurements, contaminant surveys, static pressures, field measurements, and a comparison to previous monitoring results. Field observations or conditions that may influence the results of monitoring shall be reported in this section. Tables summarizing vapor-monitoring parameters, ground water elevations, depths to ground water measurements, and other field measurements can be substituted for this section. The tables shall include all information required in Permit Section 11.12.4.11.	Y	The periodic monitoring report format includes a section entitled "Summary and Interpretations", which includes Monitoring Results (e.g., Section 5.1 of the General Surveillance Monitoring Group report [LANL 2016e November; LANL 2017j November]). This section meets the requirement of the permit. The tables included with the Monitoring Results section include field observations and deviations, field parameter results, and tabulations of analytes in which the MDLs are either above or below their respective screening value. ground water elevations are recorded electronically via a pressure transducer, and thereby generate a large amount of data. Rather than presenting that dataset within the text of the report, that data is tabulated within an electronic CD deliverable along with the report.
11.12.4.8: Analytical Data Results	A section shall discuss the results of the chemical analyses. It shall provide the dates of sampling, the analytical methods, and the analytical results. It shall also provide a comparison of the data to previous results and to background levels, cleanup standards, or established cleanup levels for the site. The rationale or purpose for altering or modifying the monitoring and sampling program shall be provided in this section. A table summarizing the laboratory analytical data, QA/QC data, applicable cleanup levels, and modifications to the sampling program can be substituted for this section. The tables shall include all information required in Permit Section 11.12.4.11.	Y	The periodic monitoring report format includes a section entitled "Analytical Data Results", which includes laboratory results (e.g., Section 4.0 of the General Surveillance Monitoring Group report [LANL 2016e November; LANL 2017j November]). This section meets the requirement of the permit. The tables included evaluate the hardness of the ground water in order to select specific screening values, and another tabulation of all analytical results in excess of comparison criteria. Full analytical results are included in respective report appendices, and include all chemistry results, results that are greater than 1/2 of their respective screening levels, analytical chemistry graphs of screening-level exceedances, and full analytical packages delivered electronically on a CD.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.12.4.10: Summary	A summary section shall provide a discussion and conclusions of the monitoring conducted at the site. In addition, this section shall provide a comparison of the results to applicable cleanup levels, and to relevant historical monitoring and laboratory analytical data. An explanation shall be provided with regard to data gaps. A discussion of remediation system performance, monitoring results, modifications, if applicable, and compliance with discharge requirements shall be provided in this section. Recommendations and explanations regarding future monitoring, remedial actions, or site closure, if applicable, shall also be included in this section.	Y	The "Summary and Interpretations" of the Periodic Monitoring Reports meets the applicable requirements of the permit (e.g., Section 5.0 of the General Surveillance Monitoring Group report [LANL 2016e November; LANL 2017] November). Summary text for monitoring and analytical results are presented, and identification of wells with analytical exceedances are detailed. Individual discussions for surface water, alluvial ground water, and perched-intermediate and regional aquifer ground water are summarized. Data gaps and deviations from the workplan are also identified. When applicable, summary results of remediation system monitoring is also included.
11.12.4.11: Tables	A section shall provide the following summary tables for the media sampled:		See below.
11.12.4.11: Tables	(1) a table summarizing the regulatory criteria (a Regulatory Criteria text section may be substituted for this table or the applicable cleanup levels may be included in the analytical data tables);	Y	Although there isn't a specific table of regulatory criteria, the required information is included with the analytical results table. As an example, the applicable cleanup standard for each analyte is included within Table 3.4-2 of the 2017 General Surveillance Monitoring Group report (LANL 2017] November). Similar tables are included in the companion monitoring group reports.
11.12.4.11: Tables	(2) a table summarizing ground water elevations and depths to ground water data. The table shall include the monitoring well depths, the screened intervals in each well, and the dates and times of measurements;	Y	Ground water elevations are submitted on CD with the respective Monitoring Group Report.
11.12.4.11: Tables	(5) a table summarizing field measurements of ground water quality data (must include historical water quality data as described above);	Y	Provided as Appendix A of the Monitoring Group Periodic Monitoring Reports.
11.12.4.11: Tables	(8) a table summarizing ground water analytical data (must include historical ground water analytical data as described above); and	Y	Provided as Appendix C of the Monitoring Group Periodic Monitoring Reports.
11.12.4.12: Figures	The section shall include the following figures:		See below.
11.12.4.12: Figures	(1) a vicinity map showing topography and the general location of the subject site relative to surrounding features or properties;	Y	Provided as Figure 2.0-1 in the Periodic Monitoring Reports.
11.12.4.12: Figures	(2) a site plan that presents pertinent site features and structures, well and piezometer locations, and remediation system location(s) and features. Off-site well locations and pertinent features shall be included on the site plan, if practical. Additional site plans may be required to present the locations of relevant off-site well locations, structures, and features;	Y	Provided as Figure 2.0-1 in the Periodic Monitoring Reports.

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
11.12.4.12: Figures	(3) figures presenting the locations of piezometer, monitoring and other well locations, ground water elevation data, and ground water flow directions;	N	Figure 3.3-1 Periodic Monitoring Reports includes hydrographs of pressure transducer measurements for applicable wells in the monitoring group. The ground water map does not provide a potentiometric surface or indicate ground water flow direction. Although potentiometric maps with flow directions have been reviewed in other reports related to the monitoring groups. It would seem appropriate that the Periodic Monitoring Reports should also include potentiometric ground water maps to express ground water flow direction beneath the facility.
11.12.4.12: Figures	(4) figures presenting ground water analytical data for the current monitoring event. The analytical data corresponding to each sampling location may be presented as individual concentrations or in table form on the figure or as an isoconcentration map;	N	When a comparison standard is exceeded, the Periodic Monitoring Reports do include analytical data maps (e.g., Chromium Investigation Report [LANL 2016c August]). However, one exception to this requirement would be the General Surveillance Group reports. As an example, both the 2016 and 2017 Annual Periodic Monitoring Reports [LANL 2016e November; LANL 2017j November] for the General Surveillance Monitoring Group had groundwater and surface water analytical results in excess of applicable screen values that are not represented on maps.
11.12.4.12: Figures	(7) figures presenting geologic cross-sections based on outcrop and borehole data, if applicable.	Y	Geologic cross-sections are not presented in the individual Monitoring Group reports, but are presented in the 2018 IFGMP as Appendix F (LANL 2017g May).
11.12.4.12: Figures	All figures shall include an accurate bar scale and a north arrow. An explanation shall be provided on each figure for all abbreviations, symbols, acronyms, and qualifiers. All figures shall have a date.	Y	All figures meet the requirement.
11.12.4.13: Appendices	Each monitoring report shall include the following appendices. Additional appendices may be necessary to present data or documentation not listed below.		See below.
11.12.4.13.i: Field Methods	An appendix shall include the methods used to acquire field measurements of ground water elevations, vapor and water quality data, and vapor, surface water and ground water samples. It shall include the methods and types of instruments used to measure depths to water, air or headspace parameters, flow measurements, and water quality parameters. In addition, decontamination, well purging techniques, well sampling techniques, and sample handling procedures shall be provided in this appendix. Methods of measuring and sampling remediation systems shall be reported in this appendix, if applicable. Purge and decontamination water storage and disposal methods shall also be presented in this appendix. Copies of purge and decontamination water disposal documentation shall be provided in a separate appendix, if applicable.	N	<p>The periodic monitoring reports do not include a field methods appendix. Although, field method appendices that are included with the IFGMP (LANL 2017g May) appear to be compliant with language of the current Consent Order. "If field methods are not described in an approved work plan, an appendix should be provided that includes the methods used to acquire field measurements of ground water elevations, vapor and water quality data, and vapor, surface water and groundwater samples. It should include the methods and types of instruments used to measure depths to water, air or headspace parameters, flow measurements, and water quality parameters. In addition, decontamination, well purging techniques, well sampling techniques, and sample handling procedures should be provided in this appendix. Methods of measuring and sampling remediation systems should be reported in this section, if applicable."</p> <p>The detailed appendices for Field Methods are included as part of the 2018 IFGMP (LANL 2017g May).</p> <ul style="list-style-type: none"> -Appendix B - Procedures, Methods, and Investigation-Derived Waste Management -Appendix E - Protocols for Assessing the Performance of Deep Ground Water Monitoring Wells <p>Additional documentation is provided in a series of stand-alone SOPs. The collection of ground water measurements are documented in the following LANL Standard Operating Procedures (SOPs): Manual ground water Level Measurements (ER-SOP-20243, R1 [LANL 2017c March]); Pressure Transducer Installation, Removal, and Maintenance (ER-SOP-10010, R1 [LANL 2017b February]); and Ground Water Sampling (ER-SOP-20032, R0 [LANL 2017a February])</p>

HWFP Section	Permit Language	Compliance (Y/N/NA)	Compliance Notes
<p>11.12.4.13.ii: Analytical Program</p>	<p>An appendix shall discuss the analytical program. It shall include the analytical methods, a summary of data quality objectives, and data quality review procedures. A summary of data quality exceptions and their effect on the acceptability of the analytical data with regard to the monitoring event and the site status shall be included in this appendix along with references to case narratives provided in the laboratory reports.</p>	<p>N</p>	<p>The detailed appendices for Field Methods are included as part of the 2018 IFGMP (LANL 2017g May).</p> <ul style="list-style-type: none"> -Appendix B Procedures, Methods, and Investigation-Derived Waste Management -Appendix C Supplemental Information for Assigned Sampling Suites and Frequencies; and -Appendix D Field Quality Assurance/Quality Control Samples. <p>However, this information is not repeated in the individual monitoring reports. The monitoring report appendices include detailed tabulations of validated analytical data which include historical trends for the past four monitoring events, comparisons to screening level criteria, and graphics of wells with screening level exceedances. An electronic CD submittal is also included with the monitoring reports which includes all the laboratory data, chain-of-custodies, laboratory narratives, and data validation reports.</p> <p>Although, the contents of the analytical appendices appear to be compliant with language of the current Consent Order. <i>"An appendix should provide the analytical reports and include the contract laboratory final chemical analytical data reports generated during this reporting period. The reports should include all chain-of-custody records and Level II QA/QC results provided by the laboratory. The laboratory final reports and data tables should be provided electronically in a format approved by the NMED. Paper copies (or electronically scanned in PDF format) of all chain-of-custody records should be provided with the reports."</i></p>
<p>11.12.4.13.iii: Analytical Reports</p>	<p>An appendix shall provide the analytical reports and shall include the contract laboratory final chemical analytical data reports generated during this reporting period. The reports must include all chain-of-custody records and Level II QA/QC results provided by the laboratory. The laboratory final reports and data tables shall be provided electronically in a format approved by the Department. Paper copies (or electronically scanned in PDF format) of all chain-of-custody records shall be provided with the reports.</p>	<p>Y</p>	<p>Periodic Monitoring Reports provide an attached CD as electronic documentation which includes all the laboratory data, Level II QA/QC results, chain-of-custodies, laboratory narratives, and data validation reports in PDF format.</p>

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B.1.6 Well Checklist

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
CDBO-6	General Surveillance	unknown	unknown	2.5	Vertical	Single	unknown	unknown	unknown	10/20 Sand	Threaded schedule 40 PVC: 0-34, 44-49
CdV-37-1i	TA-16 260	Dual Rotary	0-395 @ 16.75 395-803 @ 12.75	5.56	Vertical	Double	Stainless Steel Centralizers @ 630, 654.5	Portland Cement: 3-457.9 Qty calc: 583 ft ³ , used: 795.5 ft ³	3/8-in Bentonite Chips: 457.9-612.4 Qty calc: 121.2 ft ³ , Used: 101.7 ft ³ ; 1/4-in Bentonite Pellets: 612.4-624 3/8" Bentonite Chips: 657.8-803 Qty calc: 106.7 ft ³ , used: 121.4 ft ³	20/40 Sand: 624-625.9 Qty calc: 1.5 ft ³ , used: 1.5ft ³ ; 10/20 Sand: 625.9-657.8 Qty calc: 23.3 ft ³ , used: 34.5ft ³	Threaded A304 Stainless Steel: 0-632
CdV-37-2	TA-16 260	Air Rotary	0-25.8 @ 24 25.8-825 @ 16 825-1664 @ 12.25	5.56	Vertical	Double	unknown	Portland Cement: 0-77, 446-457, 1027-1045	Bentonite: 77-446, 457-822, 824-902, 946-1027, 1045-1177, 1223-1340, 1386-1537, 1563-1656	Sand: S1: 902.2-945.8 S2: 1177.4-1223 S3: 1340-1386.5 S4: 1537.3-1377.4	Threaded A304 Stainless Steel: 0-25.8, 0-914.4, 939.5-1188.7, 1213.8-1353.7, 1377.1-1549.3, 1556-1587.3
CdV-R-15-3	TA-16 260	Air Rotary	unknown	5.56	Vertical	unknown	Centralizers @ 540, 616, 645, 683, 799, 809, 866, 963, 982, 1040, 1137, 1195, 1234, 1289, 1347, 1423, 1462, 1501, 1540, 1578, 1617, 1655	Portland Cement: 0-77, 875-890,1490-1497	Bentonite: 77-598, 629-780, 806-875, 890-938, 975-1045, 1076-1207, 1287-1321, 1349-1490, 1497-1604, 1649-1680	10/20 Sand: S1: 598-629 S2: 780-806 S3: 938-975 S4: 1207-1287 S5: 1321-1349 S6: 1604-1680	Threaded A304 Stainless Steel: 0-617, 624.5-800.8, 807.8-964.8, 980.9-1235.1, 1278.9-1348.4, 1355.3-1637.9
MCA-9	Cr Investigation	Hollow Stem Auger	0-115 @ 8	2.4	Vertical	Single	None	Portland Cement: 0-5	Bentonite Chips: 5-90.1, 108.5-113	20/40 Sand: 90.1'-108.5'	2" PVC: 0'-92.8'

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
O-1	PWS	unknown	0-55 @ 48 55-2580 @ 26 2580-2609 @ 17.5	16	Vertical	Double	unknown	Grout: 0-664	unknown	Gravel: 0'-2497'	0'-1017' @ 16"
PAO-5n	General Surveillance	Hollow Stem Auger	0-22.5 @ 12.25	4.5	Vertical	Single	unknown	Portland Cement: 0-4.93	#8 Bentonite Pellets: 4.93-4.43 3/8" Bentonite Chips: 15.28-22.5	20/40 Sand Pre-Packed Screen: 6.43'-15.28'	4" Sch 40 Threaded PVC: 0'-7.43'
PM-1	PWS	unknown	unknown	12	Vertical	Double	unknown	unknown	unknown	Gravel	0'-474' @ 24" 0'-2499' @ 12"
PM-4	PWS	unknown	unknown	16	Vertical	Double	unknown	unknown	unknown	Gravel	Stainless Steel: 0'-41' @ 42" 0'-2,874' @ 16"
POI-4	General Surveillance	unknown	0-24 @ 18.5 24-181 @ 8.75	4.5	Vertical	Double	Stainless steel Centralizers @ 38, 78, 118, 158, 174	Casing Cement: 0-29.7 Annular Portland Cement: 1-6 Volclay high solids grout:6-148.8	#8 Bentonite Pellets: 148.8-154.3, 175.5-176.5	20/40 Sand: 154.3'-175.5'	Threaded Sch 40 PVC: 0'-29.7' @ 10.75" 0-159" @ 4"
R-10	General Surveillance	Air Rotary with Casing Hammer, Mud Rotary	0-17 @ 24 17-410 @ 15 410-1165 @ 10.6	5	Vertical	Double	Stainless Steel Centralizers @ 771.2, 872.1, 885.1, 898.1, 939.1, 1040, 1053, 1066.1	96% Cement/4% Bentonite: 0.5-72.5 Qty calc: 111 ft ³ , used: 135 ft ³	Bentonite Chips: 72.5-866 Qty calc: 586.8 ft ³ , used: 515.21 ft ³ ; 907-1028 Qty calc: 58.2 ft ³ , used: 41.0 ft ³ ; 50% Bentonite/50% 10/20 Sand: 1077-1161 Qty calc: 52.2 ft ³ , used: 41.3 ft ³	20/40 Sand: 866'-868': Qty calc: 0.96 ft ³ ; used: 1.0 ft ³ ; 1028'-1030.5': Qty calc: 1.2 ft ³ ; used: 1.0 ft ³ ; 10/20 Sand: 868'-907': Qty calc: 18.7 ft ³ ; used: 16.0 ft ³ ; 1030.5'-1077': Qty calc: 22.3 ft ³ ; used: 20.3 ft ³	0'-17' @ 16" Stainless Steel Casing and Couplings 0'- 874' @ 4.5" 897'-1042' @ 4.5" 1065'-1081.6' @ 4.5"

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-10a	General Surveillance	Air Rotary with Casing Hammer	0-11.25 @ 24 11.25-40 @ 14.75 40-590 @ 12.25 590-765 @ 8.5	5	Vertical	Double	None	96% Cement/4% Bentonite: 1.1-40 Qty calc: 33.3 ft ³ , used: 81.0 ft ³ ; 40-63 Qty calc: 15.6 ft ³ , used: 107.0 ft ³	Bentonite Pellets: 63-290: Qty calc: 154.4 ft ³ ; used: 144.1 ft ³ ; 90% Bentonite/10% 10/20 Sand: 290-450: Qty calc: 108.8 ft ³ ; used: 166.6 ft ³ ; 75% Bentonite+ 10/20 Sand (75:25): 450'-515': Qty calc: 44.2 ft ³ ; used: 20.6 ft ³ Bentonite+10/20 Sand (50:50): 597'-676': Qty calc: 20.0 ft ³ ; used: 30.0 ft ³ Bentonite=10/20 Sand (33:67)675'-676': Qty calc: 0.25 ft ³ ; used: 132.1 ft ³ Bentonite+10/20 Sand (33:67): 711'-721': Qty calc: 4.0 ft ³ ; used: 5.5 ft ³ .	10/20 Sand: 682'-711': Qty calc: 8.1 ft ³ ; used: 10.0 ft ³	0'-11.25' @ 16" Steel A304 Stainless Steel Casing and Couplings 0'-690' @ 4.5"
R-11	Cr Investigation	Air Rotary with Casing Hammer	0-926 @ 12.25	5	Vertical	Single	Stainless Steel Centralizers @ 762, 853, 865, 878	Portland Cement/Bentonite: 0-78 Qty calc: 64 ft ³ ; used: 64ft ³	Bentonite Chips+10/20 Sand: 78'-833': Qty calc: 821.8 ft ³ ; used: 818.8 ft ³ Bentonite+10/20 Sand (50:50): 833'-846.5' Bentonite+10/20 Sand (75:25): 886'-906'	20/40 Sand: 846.5'-850' 10/20 Sand: 850'-886': Qty calc: 24.5 ft ³ ; used: 54.5 ft ³	A304 Stainless Steel Casing and Couplings 0'-855' @ 4.5" 878-902' @ 4.5"

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-12	General Surveillance	Dual Rotary	0-20 @ 24 20-450 @ 15 450-800 @ 12.75 800-886 @ 10.63	5	Vertical	Triple	Steel Tabs @ 8, 18, 28, 38, 48 58 Steel Centralizers @ 14, 65, 116, 167, 218, 249, 300, 353 Stainless Steel Centralizers @ 355, 405, 458, 469, 503, 509, 540, 591, 644, 697, 749, 799, 840	Portland Cement/1% Bentonite: 0-70, 580-583	Bentonite: 70'-447', 486'-495', 522'-580 583'-785', 859'-886'	30/70 Sand: 447'-453' 20/40 Sand: 453'-481' 30/70 Sand: 481'-486' 30/70 Sand: 495'-522' 30/70 Sand: 785'-793' 20/40 Sand: 793'-856' 30/70 Sand: 856'-859'	Steel: 0'-20' @ 16" 0'-450' @ 14" A304 Stainless Steel with Flush-Threaded Joints 0'-354' @ 4.3" Mild Stainless Steel 354'-459' @ 4.5" 467.5'-504.5' @ 4.5" 508'-801' @ 4.5" 839'-869' @ 4.5"
R-16	General Surveillance	Reverse Circulation Air/Mud Rotary	0-15 @ 22 15-728 @ 16 728-1287 @ 10.625	5	Vertical	Triple	Stainless Steel Centralizers @ 56, 358, 640, 647, 863, 870, 1014, 1022, 1236, 1244	Portland Cement: 0-75	Bentonite: 75-631.6, 654.7-851.4, 882.5-1005, 1028.5-1203.7	30/70 Sand: 631.6'-634.5' 20/40 Sand: 634.5'-653.4' 30/70 Sand: 653.4'-654.7' 30/70 Sand: 851.4'-852.1' 20/40 Sand: 852.1'-877.5' 30/70 Sand: 877.5'-882.5' 30/70 Sand: 1005'-1006.7' 20/40 Sand: 1006.7'-1028.5' 30/70 Sand: 1203.7'-1211.7' 20/40 Sand: 1211.7'-1237.7'	Steel: 0'-20' @ 18" 0'-729' @ 11.75" A304 Stainless Steel with A304 Couplings: 0'-641' @ 4.5" 648.6'-863.4' @ 4.5" 863.4'-1014.8' @ 4.5" 1022.4'-1237' @ 4.5 1244.6'-1276.4' @ 4.5"
R-16r	General Surveillance	Air Rotary with Casing Hammer	0-119 @ 13.38 119-199 @ 11.75 199-635 @ 9.63	5	Vertical	Single	Stainless Steel Centralizers @ 496.2, 599, 608.5, 618.6	97% Cement/3%Bentonite: 3-75	Bentonite Chips: 75'-116': Qty calc: 60.4 ft ³ ; used: 36.2 ft ³ 121'-387': Qty calc: 181.4 ft ³ ; used: 319.1 ft ³ 402'-410': Qty calc: 3.0 ft ³ ; used: 5.0 ft ³ 418'-466': Qty calc: 17.7 ft ³ ; used: 28.8 ft ³ 469'-487': Qty calc: 6.6 ft ³ ; used: 25.5 ft ³ 502'-567': Qty calc: 24.0 ft ³ ; used: 53.9 ft ³	10/20 Sand: 567'-640': Qty calc: 27.0 ft ³ ; used: 83.0 ft ³	A304 Stainless Steel with A304 Couplings 0'-600' @ 4.5" 617.6'-631.4' @ 4.5"

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-19	General Surveillance	HSA to 126' Dual Rotary to 1902.5'	0-126 @ ~20 126-1902 @ 14	5	Vertical	Double	Stainless Steel Centralizers above and below each Screen	Portland Cement: 0-50, 1116.3-1126, 1358-1379.5, 1475.5-1488.7	Bentonite Slurry: 50-792.2, 931-1116.3, 1126-1149.8; Bentonite Pellets: 792.2-802.2, 858.6-868.3, 926-931, 1240.5-1358, 1370.9-1380, 1445.5-1475.5, 1488.7-1490.5, 1516.6-1557.9, 1606.8-1627.3, 1643.1-1675.9, 1817.4-1828.2; Bentonite Slurry + 20/40 Sand: 1779.8-1817.4; Bentonite Slurry with Sand: 1848.4-1885	20/40 Sand: 802.2-807.2, 853.6-858.6, 868.3-873.3, 1153.5-1164.5, 1582.4-1606.8, 1833.4-1841.1, 1841.1-1848.4; 6/9 Sand: 807.2-853.6, 873.3-926, 1149.8-1153.5, 1675.9-1677.7; 8/12 & 6/9 Sand: 1164.5-1240.5, 1380-1445.5, 1557.9-1582.4; 30/70 Sand: 1677.7-1767.4, 1828.2-1833.4; 8/12 Sand: 1767.4-1779.8	Stainless Steel: 0-19, 19-827.2, 843.6-893.3, 909.6-1171.4, 1215.4-1410.2, 1417.4-1582.6, 1589.8-1726.8, 1733.9-1832.4, 1839.5-1877.4
R-23	TA-54	Dual-air and mud rotary	0-38 @ 22 38-92 @ 16 92-280 @ 12.25 280-935 @ 10.63	5.56	Vertical	Double to 37 feet then Single	unknown	Portland Cement: 0-32.5, 44-62, 69-76, 303-315	Bentonite: 32.5-44, 62-69, 76-303, 315-782.5	30/70 Silica Sand Collar: 782-789; 20/40 Silica Sand: 789-883	Threaded A304 Stainless Steel: 0-816, 873.2-886.3

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-23i	TA-54	Air Rotary with Casing Hammer	0-39.5 @ 13.38 39.5-695 @ 12.25	S1: 2.4 S2 & S3: 5.3	Vertical	Double to 39.5 feet then Single	unknown	98 % Cement/2% Bentonite: 3-75 Qty calc: 47 ft ³ ; used: 80 ft ³	Bentonite Chips: 75-393 Qty calc: 207.7 ft ³ ; used: 255.3 ft ³ ; Bentonite Chips/Pellets: 425-461.5 Qty calc: 24.8 ft ³ ; used: 22 ft ³ ; Bentonite Pellets: 504-516.5 Qty calc: 0.7 ft ³ ; used: 2 ft ³ ; 555-627 Qty calc: 38.9 ft ³ ; used: 40.8 ft ³	20/40 Silica Sand Collar: 393-395 Qty calc: 1.3 ft ³ ; used: 2 ft ³ ; 461.5-463 Qty calc: 0.7 ft ³ ; used: 2 ft ³ ; 516-518.5 Qty calc: 0.7 ft ³ ; used: 2 ft ³ 10/20 Silica Sand: 395-425 Qty calc: 19.6 ft ³ ; used: 20.5 ft ³ ; 459-463 Qty calc: 2.2 ft ³ ; used: 34 ft ³ ; 518.5-550 Qty calc: 11.6 ft ³ ; used: 50 ft ³ ; 627-675 Qty calc: 30.2 ft ³ ; used: 28.5 ft ³	Threaded A304 Stainless Steel: 0-400.3, 420-470, 480.1-524, 547-550.7
R-24	General Surveillance	Coring with Hammer	0-40 @ 21.6 40-645 @ 15 645-881 @ 10.63	5.0	Vertical	Double to 35.5 feet then Single	Centralizers @ 723.3, 823.3, 849.3	Cement: 3-79 Qty used: 135 ft ³	3/8-in Bentonite Chips: 79-811 Qty calc: 798.5 ft ³ ; used: 1453.5 ft ³ ; Bentonite & 10/20 Silica Sand 854-872 Qty calc: 8.6 ft ³ ; used: 14.4 ft ³	20/40 Silica Sand Collar: 811-813 Qty calc: 1 ft ³ ; used: 3.5 ft ³ ; 10/20 Silica Sand: 813-854 Qty calc: 19.7 ft ³ ; used: 30 ft ³	Threaded A304 Stainless Steel: 0-825, 848-861
R-27	MDA AB	unknown	0-25 @ 24 25-29 @ 15 29-967 @ 12.25	5.3	Vertical	Single	Centralizers @ 723.3, 846.9, 854.1, 877.4	95 % Cement/5% Bentonite: 2-78 Qty calc: 61.8 ft ³ ; used: 81 ft ³	Bentonite Chips: 78-626 Qty calc: 372.6 ft ³ ; used: 566.5 ft ³ ; Bentonite Chips & 10/20 Sand: 626-840.5 Qty calc: 145.2 ft ³ ; used: 144 ft ³ ; 885-925 Qty calc: 36.9 ft ³ ; used: 128.8 ft ³	20/40 Silica Sand Collar: 840.5-842 Qty calc: 1.4 ft ³ ; used: 1.5 ft ³ ; 10/20 Silica Sand: 842-885 Qty calc: 30.1 ft ³ ; used: 32.5 ft ³	Threaded Stainless Steel: 0-852, 875-876.7

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-27i	MDA AB	Dual-air rotary	0-351.6 @ 16.75 351.6-633 @ 12.75	5.88	Vertical	Single	Centralizers installed 2 feet above and below the screened interval	Portland Cement: 3-250.1 Qty calc: 338.5 ft ³ ; used: 408.2 ft ³ 348.2-559.2 Qty calc: 152.1 ft ³ ; used: 170.4 ft ³	3/8-in Bentonite Chips: 250.1-348.2 Qty calc: 134.4 ft ³ ; used: 112.6 ft ³ ; 1/4-in Bentonite Pellets & 3/8-in Bentonite Chips: 559.2-612 Qty calc: 37.5 ft ³ ; used: 30.5 ft ³	20/40 Silica Sand Collar: 612-614 Qty calc: 1.4 ft ³ ; used: 1.6 ft ³ ; 10/20 Silica Sand: 614-631.2 Qty calc: 12.4 ft ³ ; used: 15.6 ft ³	Threaded A304 Stainless Steel: 0-619, 629-630.2
R-29	MDA AB	Dual-air rotary	0-52.4 @ 24 52.4-1060 @ 17.5 1060-1195 @ 14.3 1195-1248 @ 12	5.63	Vertical	Double to 52.4 feet then Single	Centralizers @ 1168.9, 1182.4	Portland Type 1 Cement: 3-74 Qty calc: 161.7 ft ³ ; used: 137.2 ft ³	3/8-in Bentonite Chips: 74-1162.4 Qty calc: 1575 ft ³ ; used: 1427.4 ft ³ ; 1184.8-1202.1 Qty calc: 15.4 ft ³ ; used: 15.2 ft ³	20/40 Silica Sand Collar: 1162.4-1165.2 Qty calc: 2.6 ft ³ ; used: 2 ft ³ ; 10/20 Silica Sand: 1165.2-1184.8 Qty calc: 18.4 ft ³ ; used: 21 ft ³	Threaded A304 Stainless Steel: 0-1170.0, 1180.0-1191.8
R-3	General Surveillance	Dual-air rotary	0-20.4 @ 34 20.4-53.3 @ 24 53.3-620 @ 22 620-744 @ 17.5 744-764.3 @ 16 764.3-1077.7 @ 12	5.6	Vertical	Double to 53.3 feet then Single	Centralizers @ 974, 996.1	Portland Cement: 3-73.5 Qty calc: 190.1 ft ³ ; used: 160.7 ft ³	3/8-in Bentonite Chips: 73.5-961.6 Qty calc: 1627.7 ft ³ ; used: 1968.2 ft ³ ; 1003.6-1022.5 Qty calc: 14.9 ft ³ ; used: 15.9 ft ³	20/40 Silica Sand Collar: 961.6-967.8 Qty calc: 3.9 ft ³ ; used: 31.6 ft ³ ; 10/20 Silica Sand: 967.8-1003.6 Qty calc: 34.3 ft ³ ; used: 46.2 ft ³	Threaded A304 Stainless Steel: 0-974.5, 995.0-1006.8
R-30	MDA AB	Dual-air rotary	0-65.5 @ 24 65.5-1034 @ 17.5 1034-1196 @ 14.3	5.6	Vertical	Double to 65.5 feet then Single	Two sets of four centralizers welded @ 1138.8, 1161.6	Portland Cement: 3-78.5 Qty calc: 211.4 ft ³ ; used: 186 ft ³	3/8-in Bentonite Chips: 78.5-1132.6 Qty calc: 1526.5 ft ³ ; used: 1337.3 ft ³ ; 1168-1193.2 Qty calc: 26.7 ft ³ ; used: 25.1 ft ³	20/40 Silica Sand Collar: 1132.6-1135.3 Qty calc: 2.5 ft ³ ; used: 2 ft ³ ; 10/20 Silica Sand: 1135.6-1161.6 Qty calc: 30.8 ft ³ ; used: 32 ft ³	Threaded A304 Stainless Steel: 0-1140.0, 1160.9-1171.8

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-31	General Surveillance	Hollow Stem Auger followed by air rotary with reverse circulation	0-37 @ 18 37-285 @ 15 285-780.5 @ 13.125 780.5-1103 @ 10.75	5.25	Vertical	Double to 37 feet then Single	Steel tabs @ 10, 20, 30, 40, 50 Centralizers @ 50 foot intervals and 2 feet above/below each well screen	99% Portland Cement/1% Bentonite: 0-65.5; Portland Cement: 574-584.7, 748.1-753.5, 842-857.2, 1085.5-1094	Bentonite Chips: 65.5-426.1, 460.1-496.3, 559.1-574, 584.7-659, 756.4-780.5; Bentonite Pellets: 426.1-432.8, 551.3-559.1, 677-692, 753.5-756.4; Bentonite Slurry: 692-748.1; 50% Bentonite Pellets/50% 20/40 Sand: 857.2-873.7, 1072.6-1085.5	8/12, 20/40, 30/70 Sands: 432.8-460.6; 20/40 and 30/70 Sands: 496.3-551.3, 659-677; 6/9 sand and coarse gravel/cobble slough: 780.5-842, 873.7-1072.6	Mild Carbon Steel: 0-297.8; Threaded A304 Stainless Steel: 297.8-439.1, 454.4-515.0, 545.7-666.3, 676.3-826.6, 836.6-1007.1, 1017.1-1077.7
R-34	General Surveillance	Dual-air rotary	0-1065 @ 12.25	5.0	Vertical	Single	None	33 % Cement/5% Bentonite/60% Sand : 0.7-82 Qty calc: 55.3 ft ³ ; used: 114.8 ft ³ ; 70% Bentonite/30% 8/20 Sand: 82-717	3/8-in Bentonite Chips/8/20 Sand: 717-875 Qty calc: 397.8 ft ³ ; used: 1226.1 ft ³	20/40 Silica Sand Collar: 875-877; 8/20 Silica Sand: 877-935 Qty calc: 41 ft ³ ; used: 27.5 ft ³	Threaded A304 Stainless Steel: 0-883.7, 906.6-920.7
R-36	Cr Investigation	Dual-air rotary	0-201.5 @ 16.75 201.5-700 @ 15 700-865 @ 10.75	5.0	Vertical	Single	Centralizers @ 761.9, 794.9	98 % Cement/2% Bentonite: 3-128.4 Qty calc: 175.5 ft ³ ; used: 192 ft ³ ; High Solids Bentonite: 535.8-734.8 Qty calc: 140 ft ³ ; used: 148 ft ³	3/8-in Bentonite Chips: 126.4-535.8 Qty calc: 452.2 ft ³ ; used: 434.2 ft ³ ; 734.8-759.6 Qty calc: 12.3 ft ³ ; used: 13.9 ft ³ ; 797.9-803.9 Qty calc: 2.9 ft ³ ; used: 10.2 ft ³ ;	20/40 Silica Sand Collar: 759.6-762.3 Qty calc: 1.35 ft ³ ; used: 2 ft ³ ; 10/20 Silica Sand: 762.3-797.9 Qty calc: 17.8 ft ³ ; used: 68.8 ft ³	Threaded A304 Stainless Steel: 0-766.9, 789.9-803.7

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-39	TA-54	Air rotary with Hammer	0-40.5 @ 16 40.5-896 @ 14.75	5.56	Vertical	Double to 40.5 feet then Single	Centralizers @ 856.3, 871.6	95 % Cement/5% Bentonite: 6-301 Qty calc: 306.4 ft ³ ; used: 367.8 ft ³	Bentonite Pellets: 10-210.8 Qty calc: 54.18 ft ³ ; used: 47.97 ft ³	20/40 Silica Sand Collar: 851-855 Qty calc: 4.09 ft ³ ; used: 5.6 ft ³ ; 872.8-875.6 Qty calc: 2.04 ft ³ ; used: 1.4 ft ³ ; 10/20 Silica Sand: 855-872.8 Qty calc: 18.39 ft ³ ; used: 22.23 ft ³	Threaded A304 Stainless Steel: 0-859.3, 869.3-875.57
R-3i	General Surveillance	Coring with Hammer	0-240 @ 7.38 240-268.3 @ 3.895	2.3	Vertical	Single	None	93.8 % Cement/6.2% Bentonite: 2.4-10 Qty calc: 2.05 ft ³ ; used: 6 ft ³	3/8-in Bentonite Chips: 301-851 Qty calc: 562.8 ft ³ ; used: 641.3 ft ³	20/40 Silica Sand Collar: 210.8-212.7 Qty used: 1 ft ³ 10/20 Silica Sand: 212.7-222.6 Qty calc: 2.67 ft ³ ; used: 5.75 ft ³	Threaded Schedule 40 PVC: 0-215.2, 220-220.34
R-55	TA-54	Dual-air rotary	0-82.0 @ 16.75 82.0-565.0 @ 15 565.0-839.4 @ 12.75 839.4-1035.2 @ 10.75	5.56	Vertical	Single	Four sets of four centralizers welded above and below each screened interval	Portland Type I/II/V Cement: 2-59.2 Qty calc 78.3 ft ³ used 93.6 ft ³ , 565-577.9 Qty calc 8.4 ft ³ used 13.4 ft ³	3/8-in Bentonite Chips and 0.25 Coated Bentonite Pellets: 59.2-565 Qty calc: 551.6 ft ³ ; used: 469.7 ft ³ ; 577.9-851.6 Qty calc: 167.9 ft ³ ; used: 139.4 ft ³ ; 891.3-988.4 Qty calc: 45.6 ft ³ used: 27.5 ft ³ ; 3/8-in Bentonite Chips: 1020.7-1028.6 Qty calc: 4.5 ft ³ used: 4 ft ³	20/40 Silica Sand Collar: 851.6-855.2 Qty calc: 1.6 ft ³ used: 1.0 ft ³ , 988.4-990.0 Qty calc: 0.8 ft ³ used: 1.0 ft ³ , 10/20 Silica Sand: 855.2-891.3 Qty calc: 17 ft ³ used: 18.1 ft ³ , 990-1020.7 Qty calc: 14.4 ft ³ used: 17.5 ft ³	Threaded A304 Stainless Steel: 0-860, 880.6-994.4, 1015.4-1021
R-55i	TA-54	Dual-air rotary	0-82.0 @ 16.75 82.0-140 @ 15.88 140.0-366.9 @ 14 366.9-565 @ 12	5.56	Vertical	Single	Centralizers installed 2 feet above and below the screened interval	Portland Type I/II/V Cement: 2-59.2 Qty used 117.6 ft ³ Calc 81.8 ft ³ , 565-577.9	3/8-in Bentonite Chips: 62.9-503.3 Qty used 432.2 ft ³ , 533-544.4 Qty used 3.4 ft ³	20/40 Silica Sand Collar: 503.3-505.3 Qty used: 1.0 ft ³ , 10/20 Silica Sand: 505.3-533 Qty used: 17 ft ³ Calc: 21.4 ft ³	Threaded A304 Stainless Steel: 0-510, 531.1-541.4

Well ID	Monitoring Group	Drilling Method	Borehole Depth (feet below ground surface) / Casing Diameter (inches)	Casing Diameter Inches	Alignment	Type of Well - Single or Double Wall	Centralizers (feet below ground surface or number used)	Annular Seal (feet below ground surface)	Bentonite Seal (feet below ground surface)	Filter Pack (feet below ground surface)	Well Casing Materials (feet below ground surface)
R-9	TA-21	Dual-air rotary coring	0-7.5 @ 16 7.5-243 @ 15 243-289 @ 13.75 289-420 @ 11.75 420-771 @ 9.63	5	Vertical	Quintuple to 7.5 ft, then quadruple to 243 ft, then triple to 289 ft, double to 420 ft, then single	Steel tabs @ 10, 20, 30, 40, 50 Centralizers @ 48, 99, 100, 150, 200, 250, 301, 348, 397, 448, 500, 552, 644, 683, 753	99 %Portland Cement/1% Bentonite: 0-622.5	Bentonite Pellets: 661.5-669.5	30/70 Silica Sand collar: 669.5-675.5; 20/40 Silica Sand: 675.5-748.5	Threaded A304 Stainless Steel: 0-683, 748.5-758
R-9i	TA-21	Dual-air rotary	0-18 @ 13.38 18-322 @ 12.25	5.56	Vertical	Double to 18 feet then Single	None	99 %Portland Type I/II Cement/1% Bentonite: 2-69.8	3/8-in Bentonite Chips: 69.8-183.2, 203.9-264.3, 289.2-296.7; Bentonite Pellets: 282.8-289.2	30/70 Silica Sand collar: 876.1-880.2, 20/40 Silica Sand: 880.2-910.8 Qty used: 25.8 ft ³ Calc: 21.4 ft ³	Threaded A304 Stainless Steel: 0-189.1, 199.5-269.6, 280.3-309.9
SIMR-2	Cr Investigation	Dual-air rotary	0-94.4 @ 16 94.4-462.7 @ 15 462.7-842.2 @ 12.75 842.2-981.4 @ 10.75	5.56	Vertical	Single	Two sets of two centralizers welded above and below the screened interval	Portland Type I/II/V Cement: 3-60.1 Qty used: 121.7 ft ³ Calc: 70.2 ft ³	3/8-in Bentonite Chips: 60.1-876.1, 910.8-965.8 Qty used: 781.7 ft ³ Calc: 21.4 ft ³	20/40 Silica Sand collar: 876.1-880.2 Qty used: 5.3 ft ³ , 10/20 Silica Sand: 880.2-910.8 Qty used: 25.8 ft ³ Calc: 21.4 ft ³	Welded A304 Stainless Steel: 0-885, 905.4-927
WCO-1r	General Surveillance	Sonic	0-11 @ 8.25 11-29.5 @ 6.25	4.5	Vertical	Single	None	Cement: 0-3	3/8-in Bentonite Chips: 3-3.7 Qty used: 0.3 ft ³ Calc: 0.2 ft ³	10/20 Silica Sand: 3.7-16.5 Qty used: 3.5 ft ³ Calc: 3.2 ft ³	Threaded Schedule 40 PVC: 0-6, 16-16.4

Table continued.

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
CDBO-6	Threaded schedule 40 PVC: 215.2-220	0.010	1	10	unknown	unknown	None	Work Plan for Sandia Canyon and Cañada del Buey (LANL, 1999 September)	Alluvial	Bladder	1992	

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
CdV-37-1i	Wire-Wrapped Threaded A304 Stainless Steel: 632-652	0.020	1	20	Completed 12/3-7/2009: Swabbing, bailing, pumping	Above grade, locking cover, with sloped concrete pad	Video, Natural gamma ray, Induction	Completion Report for Intermediate Aquifer Well CdV-37-1i (May, 2010); and Fact Sheets for CdV-37-1i (LANL, January, 2010)	Perched Intermediate	Submersible	12/1/2009	Water, Air, Foam
CdV-37-2	Threaded A304 Wire-Wrapped Stainless Steel: S1: 914.4-939.5 S2: 1188.7-1213.8 S3: 1353.7-1377.4 S4: 1549.3-1556	0.010	4, but converted to single screen	S1: 25 (Dry) S2: 25 S3: 25 S4: 7	Swab, bail, pump	Above grade, locking cover, with sloped concrete pad	Video Survey, array induction, borehole deviation, natural gamma ray, natural gamma ray spectroscopy, combinable magnetic resonance, triple lithodensity, formation microimager, accelerator neutron porosity, temperature, and spinner	Well Reconfiguration of CdV-R-37-2 Field Summary Report (LANL, 2013 September)	Regional	Submersible	8/10/2001	unknown
CdV-R-15-3	Wire-Wrapped Threaded A304 Stainless Steel: S1: 617-624.5 S2: 800.8-807.8 S3: 964.8-980.9 S4: 1235.1-1278.9 S5: 1348.4-1355.3 S6: 1637.9-1644.8	0.010	Westbay well with 6 zones, but converted to a single screen	S1: 7 (Dry) S2: 7 (Dry) S3: 16 (Dry) S4: 44 S5: 7 S6: 7	unknown	Above grade, locking cover, with sloped concrete pad	Video Survey, Accelerator Porosity Sonde, Hostile Natural Gamma Spectroscopy, Combinable Magnetic Resonance, Triple detector Litho-Density, Array Induction Tool, Formation Micro-Imager	Work Plan to Reconfigure Well CdV-R-15-3 (LANL, 2012 November)	Regional	Submersible	unknown	unknown
MCA-9	2" Pre-Packed Screen: 92.8-102.81	0.010	1	15	None. Dry	Above grade, locking cover, with sloped concrete pad	Natural gamma ray, induction	Final MCA Wells, MCB Boreholes, and MCRES Boreholes Completion Report (Kleinfelder, May, 2006); and Plugging and Abandonment of Wells for 2014 (LANL, 2013 October)	Alluvial	None	12/4/2004	Well Abandoned in 2014
O-1	Shutter Screen: 1017-2157, 157-2477	0.050 and 0.060	1	1460	unknown	Above grade, locking cover, with sloped concrete pad	Temp, Fluid Resistivity, Spinner, Spontaneous Potential, SFL Resistivity (Averaged), Deep Induction Standard Processed Resistivity, Gross gamma ray, Bulk Density, Neutron Porosity	Water Supply at Los Alamos (LANL, 1990)	Regional	Turbine	unknown	unknown

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
PAO-5n	4" Sch 40 Threaded PVC Factory slotted Pre-Packed Screen: 7.43-12.43	0.010	1	5	unknown	Above grade, locking cover, with sloped concrete pad	None	Report on Alluvial Well Completions 1994-2001 (Gray, 2001 November)	Alluvial	unknown	3/24/1998	unknown
PM-1	Louvers: 945-2479	unknown	1	1534	unknown	Above grade, locking cover, with sloped concrete pad	unknown	Work Plan for Sandia Canyon and Cañada del Buey (LANL, 1999 September)	Regional	Turbine	Feb-65	unknown
PM-4	Louvers: 1260-2854	unknown	1	1594	unknown	Above grade, locking cover, with sloped concrete pad	unknown	Work Plan for Sandia Canyon and Cañada del Buey (LANL, 1999 September)	Regional	Turbine	Jul-82	unknown
POI-4	Threaded Sch 40 PVC Factory Slotted: 159-174	0.010	1	15'	unknown	Above grade, locking cover, with sloped concrete pad	unknown	Groundwater Level Status Report for 2010 (LANL, 2011a March)	unknown	unknown	1996	
R-10	A304 Stainless Steel Wire-Wrapped Screen with Stainless Steel couplings: S1: 874-897 S2: 1042-1065	0.020	2	S1: 23' S2: 23'	Completed 10/1-6/2005: Swab, bail, pump	Above grade, locking cover, with sloped concrete pad	Video, combinable magnetic resonance, compensated neutron triple detector litho-density, array induction tool, formation micro-imager tool, general purpose inclinometry tool, natural gamma spectroscopy, elemental capture spectroscopy, digital sonic logging tool, natural gamma ray	Final Completion Report Characterization Wells R-10a/R-10 (Kleinfelder, 2006a January)	Regional	Submersible	10/5/2005	Water, DRISPAC, QUIK-FOAM, QUIK-GEL
R-10a	A304 Stainless Steel Wire-Wrapped Screen and Couplings: 690-700	0.020	1	10	Completed 8/15-9/7/2005: Swab, bail, pump	Above grade, locking cover, with sloped concrete pad	Video, natural gamma ray, Caliper	Final Completion Report Characterization Wells R-10a/R-10 (Kleinfelder, 2006a January)	Regional	Submersible	8/18/2005	Water, foam, EZ-Mud

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
R-11	A304 Stainless Steel Casing and Couplings: 855'-878' @ 4.5"	0.020	1	23	Swab, bail, pump	Above grade, locking cover, with sloped concrete pad	Video, combinable magnetic resonance, compensated neutron tool (CNT), triple detector litho-density, array induction tool, formatting micro-imager tool, general purpose inclinometry tool, natural gamma spectroscopy, elemental capture spectroscopy (ECS), gross gamma ray)	Final Completion Report Characterization Well R-11 (Kleinfelder, 2005 February)	Regional	Submersible	10/8/2004	Water, foam, EZ-Mud
R-12	A304 Stainless Steel wire-wrapped Flush-Threaded Screen S1: 459'-467.5' @ 4.5" S2: 504.5'-508' @ 4.5" S3: 801'-830' @4.5"	S1, S3: 0.010 S2: 0.005	2	S1: 8.5 S2: 3.5 S3: 38	Jetting, Pumping	Above grade, locking cover, with sloped concrete pad	Video, Natural Gamma, Caliper	Characterization Well R-12 Completion Report (LANL, 2001c May); Well R-12 Conversion and Rehabilitation Report, Revision 1 (LANL, 2008 January)	Regional	Bennet (S1) and Submersible (S2)	Mar-00	Westbay well removed. Zone S3 was abandoned in October 2007.
R-16	A304 Stainless Steel Wire-Wrapped Screen with A304 Couplings: S1: 641-648.6 S2: 863.4-870.9 S3: 1014.8-1022.4 S4: 1237-1244.6	0.010	2	S1: 7.6 S2: 7.5 S3: 7.6 S4: 7.6	Bailing, brushing, surging, chemical treatment, pumping	Above grade, locking cover, with sloped concrete pad	Video, compensated neutron tool (CNT), triple detector litho-density tool, array induction tool, version; formation micro-imager, general purpose inclinometry tool, elemental capture spectroscopy (ECS), digital sonic logging tool (DSLTL) gross gamma ray	Characterization Well R-16 Completion Report (LANL, 2003a June); and Rehabilitation and Conversion Summary Report for Well R-16 (LANL, 2009 September)	Regional	Baski dual port system with submersible for S2 and S4	9/8/2002	Water, soda ash, Quick-Gel, Liqui-Trol, Quick-Foam, EZ-Mud, Magma Fiber, Pack-L, N-Seal. Westbay well removed.
R-16r	A304 Stainless Steel Wire-Wrapped Screen and Couplings: 600-617.6	0.010	1	17.6	Swab, bail, pump	Above grade, locking cover, with sloped concrete pad	Natural Gamma	Final Completion Report Characterization Well R-16r (Kleinfelder, 2006 February)	Regional	Submersible	10/11/2005	Water, Quick-Foam, EZ-Mud, Replaced failed S1 in R-16 well.

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
R-19	Stainless Steel: S1: 827.2-843.6 S2: 893.3-909.6 S3: 1171.4-1215.4 S4: 1410.2-1417.4 S5: 1582.6-1589.8 S6: 1726.8-1733.9 S7: 1832.4-1839.5	0.010	7	S1: 16.4 S2: 16.3 S3: 44 S4: 7.2 S5: 7.2 S6: 7.1 S7: 7.1	Completed unknown: Jetting, Air Lifting, Pumping	Above grade, locking cover, with sloped concrete pad	Video Survey, Gross gamma ray, array induction tool, triple detector litho-density tool, combinable magnetic resonance, thermal/epithermal compensated neutron, hostile natural gamma spectroscopy, formation micro-imager tool, general purpose inclinometry tool	Characterization Well R-19 Completion Report (LANL, 2001d May)	S1-S2: Intermediate S3-27: Regional	Westbay MP55 System	Apr-00	Water, TORKease, EZ-Mud, Quick-Foam. Well is used for water level monitoring only.
R-23	Wire-Wrapped Threaded A304 Stainless Steel: 816-873.2	0.01	1	S1: 57.2	Completed 10/8/2002-2/20/2003: bailing, wire brushing, surging, pumping	above grade, locking cover, with sloped concrete pad	Video Survey array induction, combinable magnetic resonance, triple detector lithodensity, elemental capture Spectroscopy, natural gamma ray spectroscopy, thermal/epithermal compensated neutron, and natural gamma ray	Characterization Well R-23 Completion Report (LANL, 2003b June)	Regional	Grundfos Submersible Pump	8/17/2002-9/22/2002	Potable Water, Bentonite, Liqui-Trol, Quick-Foam, Soda Ash, N-Seal, and Magma Fiber
R-23i	Wire-Wrapped Threaded A304 Stainless Steel: S1 = 400.3-420, S2 = 470-480.1, S3 = 524-547	S1, S2, S3: 0.02	3	S1: 19.7 S2: 10.1 S3: 23	Completed 11/3-10/2005: S1 = swabbing, bailing, S2 & S3 = swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	video survey, natural gamma ray, and array induction logs	Final Completion Report Intermediate Well R-23i (Kleinfelder, 2006a March)	Intermediate	S1&S2 = Pneumatic Bennett Pump, S3 = Grundfos Submersible Pump	10/11-22/2005	Potable Water, Foam, and EZ Mud
R-24	Wire-Wrapped Threaded A304 Stainless Steel: 825-848	0.02	1	S1: 23	Completed 8/29-9/12/2005: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	Video Survey, Combinable Magnetic Resonance, Compensated Neutron Tool, Triple Detector LithoDensity, Array Induction, Formation Micro-Imager, General Purpose Inclinometry Tool, Natural Gamma Spectroscopy, and Elemental Capture Spectroscopy	Final Completion Report Characterization Well R-24 (Kleinfelder, 2006b January)		Grundfos Submersible Pump	7/27/2005-8/25/2005	Potable Water, Foam, and EZ Mud

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
R-27	Threaded Stainless Steel: 852-875	0.02	1	S1: 23	Completed 11/9-14/2005: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad		Final Completion Report Characterization Well R-27 (Kleinfelder, 2006b March)	Regional	Grundfos Submersible Pump	Oct-05	unknown
R-27i	Wire-Wrapped Threaded A304 Stainless Steel: 619-629	0.02	1	S1: 10	Completed 9/28-10/17/2009: bailing, pumping	above grade, locking cover, with sloped concrete pad	Video Survey	Drilling Work Plan for Regional Aquifer Well R-27i (LANL, 2009 July); and Completion Report for Intermediate Aquifer Well R-27i (LANL, 2010 March)	Intermediate	Pneumatic Bennett Pump	9/10-25/2009	Potable Water and Foam
R-29	Wire-Wrapped Threaded A304 Stainless Steel: 1170.0-1180.0	0.02	1	S1: 10	Completed 3/16-21/2010: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	Video Survey, Accelerator Porosity Sonde, Triple Detector Litho-Density, Elemental Capture Spectroscopy, Hostile Natural Gamma Spectroscopy, and Natural Gamma Ray	Drilling Work Plan for Regional Aquifer Well R-29 (LANL, 2009 October); and Completion Report for Regional Aquifer Well R-29 (LANL, 2010a August)	Regional	Grundfos Submersible Pump	2/12-25/2010	Potable Water and Foam
R-3	Wire-Wrapped Threaded A304 Stainless Steel: 974.5-995.0	0.02	1	S1: 20.5	Completed 6/26-8/17/2010: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	Video Survey, Accelerator Porosity Sonde, Triple Detector Litho-Density, Elemental Capture Spectroscopy, Hostile Natural Gamma Spectroscopy, and Natural Gamma Ray	Completion Report for Regional Aquifer Well R-3 (LANL, 2010 November)	Regional	Grundfos Submersible Pump	4/22-5/29/2010	Potable Water, Foam, and Mud
R-30	Wire-Wrapped Threaded A304 Stainless Steel: 1140.0-1160.9	0.02	1	S1: 20.9	Completed 4/7-11/2010: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	video survey, natural gamma ray, and array induction logs	Completion Report for Regional Aquifer Well R-30 (LANL, 2010b August)	Regional	Grundfos Submersible Pump	3/15-24/2010	Potable Water and Foam
R-31	Wire-Wrapped Threaded A304 Stainless Steel: S1: 439.1-454.4 S2: 515.0-545.7 S3: 666.3-676.3 S4: 826.6-836.6, S5: 1007.1-1017.1	S1, S2, S3, S4, S5: 010	Westbay well with 5 zones	S1: 15.3 S2: 30.7 S3: 10 S4: 10 S5: 10	Completed 3/8-27/2000: surging, air lifting, pumping	above grade, locking cover, with sloped concrete pad	Accelerator Porosity Sonde, Hostile Natural Gamma Spectroscopy, Electromagnetic Thickness Tool, Multi-finger Caliper	Characterization Well R-31 Completion Report (LANL, 2002 March)	Regional	Westbay MP55 System	9/9/-10/1/1999 and 1/6-2/8/2000	Potable water, TORKease®, and EZ-MUD®

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
R-34	Wire-Wrapped Threaded A304 Stainless Steel: 883.7-906.6	0.02	1	S1: 22.9	Completed 2/13-16/2008: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	Video survey, Combinable Magnetic Resonance, Compensated Neutron Tool, Triple detector Litho-Density, Array Induction, Formation Micro-Imager, General Purpose Inclonometry Tool, Natural Gamma Spectroscopy, Natural Gamma Ray, Elemental Capture Spectroscopy	Final Completion Report Characterization Well R-34 (Kleinfelder, November, 2004)	Regional	Grundfos Submersible Pump	7/7-8/12/2004	Potable Water, Foam, and EZ Mud
R-36	Wire-Wrapped Threaded A304 Stainless Steel: 766.9-789.9	0.02	1	S1: 23	Completed 8/13-20/2004: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	video survey, natural gamma ray, and array induction logs	Completion Report for Regional Aquifer Well R-36 (LANL, 2008 April)	Regional	Grundfos Submersible Pump	10/23-11/30/2007	Potable Water and Foam
R-39	Wire-Wrapped A304 Threaded Stainless Steel: 859.3-869.3	0.02	1	S1: 10	Completed 12/1-23/2008: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	Accelerator Porosity Sonde, array induction, combined magnetic resonance, natural and spectral gamma, Elemental Capture Sonde, and Formation Micro-Imager	Completion Report for Regional Aquifer Well R-39 (LANL, 2009 April)	Regional	Grundfos Submersible Pump	10/22-11/23/2008	Potable Water and Foam
R-3i	Slotted Threaded Schedule 40 PVC: 215.2-220	0.02	1	S1: 5	Completed 8/29-9/12/2005: swabbing, pumping	above grade, locking cover, with sloped concrete pad	video survey, natural gamma ray, and array induction logs	Final Completion Report Intermediate Well R-3i (Kleinfelder, 2007)	Intermediate Perched	unknown	8/2-14/2005	Air
R-55	Wire-Wrapped Threaded A304 Stainless Steel: S1: 860-880.6 S2: 994.4-1015.4	S1, S2: 0.02	2	S1: 20.6 S2: 21	Completed 8/28-9/3/2010: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	video survey, natural gamma ray, and array induction logs	Completion Report for Regional Aquifer Well R-55 (LANL, 2011 January)	Regional	Grundfos Submersible Pump with pneumatically actuated port valves	5/9-6/29/2010	Potable Water and Foam
R-55i	Wire-Wrapped Threaded A304 Stainless Steel: 510-531.1	0.02	1	S1: 21.1	Completed 1/24-26/2011: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	None	Completion Report for Intermediate Aquifer Well R-55i (LANL, 2011 June)	Regional	Grundfos Submersible Pump	12/13/2010 - 1/7/2011	Potable Water and Foam

Well ID	Well Screen Materials (feet below ground surface)	Slot Size (inches)	Number of Screened Intervals	Screen Length (Feet)	Well Development Procedures	Surface Completion	Geophysics	Documentation	Aquifer	Pump	Drilling Date	Additives
R-9	Wire-Wrapped Threaded A304 Stainless Steel: 683-748.5	0.01	1	S1: 65.5	Completed 2/10-13/2000: jetting and pumping	above grade, locking cover, with sloped concrete pad	Video survey, borehole digital image processing system, natural gamma ray, caliper, electromagnetic induction, magnetic susceptibility, gamma-gamma density, thermal neutron, and epithermal neutron	Characterization Well R-9 Completion Report (LANL, 2001a May)	Regional	Grundfos Submersible Pump	9/22/1997–2/3/1998	unknown
R-9i	Wire-Wrapped Threaded A304 Stainless Steel: S1: 189.1-199.5 S2: 269.6-280.3	0.01	2	S1: 10.4 S2: 10.7	Completed 4/6-7/2000: bailing and pumping	above grade, locking cover, with sloped concrete pad	unknown	Characterization Well R-9i Completion Report (LANL, 2001b May)	Uppermost Perched	Westbay MP55 System	3/6–9/2000	unknown
SIMR-2	Wire-Wrapped Welded A304 Stainless Steel: 885-905.4	0.04	1	S1: 20.4	Completed 8/11-16/2015: swabbing, bailing, pumping	above grade, locking cover, with sloped concrete pad	video survey, natural gamma ray, and array induction logs	Completion Report for Regional Aquifer Well SIMR-2 (LANL, 2016 January)	Regional	Grundfos Submersible Pump	6/21–7/10/2015	Potable Water and AQF-2 Foam
WCO-1r	Threaded Schedule 40 PVC: 6-16	0.02	1	S1: 10	Completed 8/23-26/2010: swabbing, pumping	above grade, locking cover, with sloped concrete pad	unknown	Plugging and Abandonment Report for Alluvial Wells WCO-3 and WCO-1 and Completion Report for Replacement Alluvial Wells WCO-3r and WCO-1r (LANL, 2011b March)	Alluvial	Pneumatic Bladder Pump	12/19–22/2009	None

ft³ = cubic feet

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B.2 Observation Forms

The Review Team made the following observations during the Review of LANL's Ground Water Discharge Permits and Ground Water Monitoring Program.

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 1	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Manning, Steve		DATE: 2/28/2018
TECHNICAL AREA AT LANL TA 46		FUNCTIONAL AREA: GW
LOCATION Outfall 13S		CATEGORY: Improper signage
REFERENCE DP 857, Item 8		
REQUIREMENT LANGUAGE The Permittees shall maintain signs indicating that the wastewater at the SWWS, SERF, SMEB facilities and at NPDES outfalls 001 and 13S is not potable. Signs shall be posted at the Facilities' entrances and outfalls where there is potential for public contact with wastewater. All signs shall be printed in English and Spanish, and they shall remain visible and legible for the term of this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]		
OBSERVATION No signage. Update: Photo of sign at Outfall 13S was provided.		
NOTES There has never been a discharge at Outfall 13S since SWWS was built 25 years ago.		
RECOMMENDATION Install sign in accordance with permit condition 8 of Permit DP-857. Update: Photo of sign at Outfall 13S was provided.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 4	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Manning, Steve		DATE: 2/28/2018
TECHNICAL AREA AT LANL TA 60		FUNCTIONAL AREA: GW
LOCATION SMEB		CATEGORY: Improper signage
REFERENCE DP 857		
REQUIREMENT LANGUAGE The Permittees shall maintain signs indicating that the wastewater at the SWWS, SERF, SMEB facilities and at NPDES outfalls 001 and 13S is not potable. Signs shall be posted at the Facilities' entrances and outfalls where there is potential for public contact with wastewater. All signs shall be printed in English and Spanish, and they shall remain visible and legible for the term of this Discharge Permit. [NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]		
OBSERVATION No signage. Update: Photo of sign at SMEB was provided.		
NOTES NA		
RECOMMENDATION Install sign in accordance with permit condition 8 of Permit DP-857. Update: Photo of sign at SMEB was provided.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 14	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Manning, Steve		DATE: 5/14/2018
TECHNICAL AREA AT LANL		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Reporting
REFERENCE DP-857, Condition 31		
REQUIREMENT LANGUAGE On a semi-annual basis, the Permittee shall collect 24-hour flow weighted composite samples (except where noted) of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, and NPDES outfall 13S. All samples shall be analyzed for the following inorganic constituents: pH (instantaneous).		
OBSERVATION pH was not reported during 2017 for Outfall 001 and SWWS (SERF wet well). No discharge through Outfall 13S.		
NOTES LANL Response: The sampling and analysis plan for DP-857 has been corrected to ensure that field measurements for pH will be taken, and reported to NMED. Attached are Field Parameter Forms for each of the sampling events requiring field measurement for pH. The form will be attached to each sample chain of custody. Additionally, the form will be added to the Quality Assurance Project Plan (QP) ENV-CP-QPP WQCC Rev.7. In closing, it should be noted that pursuant to NPDES Permit No. NM0028355, pH measurements are taken weekly at NPDES Outfall 001. The pH measurements, while not reported to NMED, provide a significant level of assurance that discharges to the environment are compliant with pH limit established by both EPA and NMED of 6 – 9 standard units.		
RECOMMENDATION Permit noncompliance has been resolved. No further action required.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 15	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Manning, Steve		DATE: 5/17/2018
TECHNICAL AREA AT LANL TA-46		FUNCTIONAL AREA: GW
LOCATION SWWS		CATEGORY: Monitoring/testing
REFERENCE DP-857 Conditions 17, 31, 32, 33, 34, 35, and 36		
REQUIREMENT LANGUAGE Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program [NELAP], and analyzed in accordance with the methods authorized in this Discharge Permit.		
OBSERVATION [Original text - GEL laboratory in South Carolina is not NELAP accredited. South Carolina is not a NELAP accreditation program administrator.] 6-8-2018 Update - LANL provided documentation that the GEL SC lab was NELAP accredited through the state of Utah.		
NOTES [Original text - The GEL SC laboratory claims to have NELAP accreditation through the Utah lab. GEL SC was not able to provide documentation that this is acceptable to NMED.] 6-8-2018 Update - LANL provided documentation that the GEL SC lab was NELAP accredited through the state of Utah.		
RECOMMENDATION [Original text - Have next sample set analyzed by NELAP accredited laboratory or coordinate with NMED to get approval to use an alternative laboratory.] 6-8-2018 Update - LANL provided documentation that the GEL SC lab was NELAP accredited through the state of Utah.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 16	OBSERVATION TYPE I - Operational Deficiency (not following LANL procedure)	OBSERVATION STATUS: Open
REVIEWER Pearson, Scott		DATE: 5/24/2018
TECHNICAL AREA AT LANL IFGMP		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Monitoring/testing
REFERENCE HWFP - Section 11.10.2.7.i: Ground Water Levels		
REQUIREMENT LANGUAGE Ground water level measurements shall be obtained at intervals required by the Department. Ground water levels also shall be obtained prior to purging in preparation for a sampling event. Measurement data and the date and time of each measurement shall be recorded on a site monitoring data sheet. The depth to ground water shall be measured to the nearest 0.01 feet. The depth to ground water shall be recorded relative to the surveyed well casing rim or other surveyed datum.		
OBSERVATION The permit requires that all water levels be collected within the commencement of the monitoring activities. However, Section 1.8 the 2018 IFGMP indicates that ground water levels will be measured within 21-day sampling event, rather than the 14-day timeframe specified in the HWFP.		
NOTES The collection of water level measurements is agreement with the current Consent Order, which states water levels will be obtained prior to well purging, all completed within a 21-day sampling campaign. Water levels are measured in ground water monitoring wells immediately before each purge and sampling event. For most ground water monitoring wells, water-level measurements are obtained from installed pressure transducers that record water level data every 1 to 2 hours, which meet the 14-day requirement by default. In wells not equipped with pressure transducers, or in instances when the pressure transducer is not functioning properly, portable instrumentation is used to measure the water level (i.e., a "manual" measurement).		
RECOMMENDATION This observation identifies incongruent language between the HWFP and the Consent Order and requires evaluation by the permittee and the NMED. Changing the language in the permit and/or the Consent Order would require NMED action, outside of the permittee's authority.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 17	OBSERVATION TYPE I - Operational Deficiency (not following LANL procedure)	OBSERVATION STATUS: Open
REVIEWER Pearson, Scott		DATE: 5/24/2018
TECHNICAL AREA AT LANL IFGMP		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Monitoring/testing
REFERENCE HWFP - Sections 11.10.2.8.ii and 11.10.2.13		
REQUIREMENT LANGUAGE All purged ground water and decontamination water shall be temporarily stored at satellite accumulation areas, transfer stations, or less-than-90-day storage areas in labeled 55-gallon drums or other containers approved by the Department until proper characterization and disposal can be arranged. The methods for disposal of purge/decontamination water shall be approved by the Department prior to removal from the temporary storage area. Disposable materials shall be handled as described in Permit Section 11.10.2.13.		
OBSERVATION From on-site interviews and review of waste management SOPs in the IFGMP, purged ground water is not transferred to temporary satellite accumulation areas, transfer stations, or 90-day storage areas. Instead, the purged ground water remains at the wellhead until waste characterization can be determined and then managed in accordance with the LANL Investigation-Derived Waste Decision Tree. Ultimately, the management of nonhazardous purge water complies with EPC-CP-QP-010, "Land Application of Ground Water" in accordance with NMED discharge permit DP-1793. If the purge water is hazardous, it is managed in accordance with hazardous waste management requirements. However, the procedures for managing purged ground water were approved by NMED on March 12, 2010 in review of procedure ENV-RCRA-QP-010.3.		
NOTES The current Consent Order does not specify if purged ground water needs to be transferred to a storage facility, or if it can be held at the wellhead purge tank while laboratory analysis is pending. The IFGMP, however, allows for temporary storage at the wellhead.		
RECOMMENDATION This observation identifies incongruent language between the HWFP and the Consent Order and requires evaluation by the permittee and the NMED. Changing the language in the permit and/or the Consent Order would require NMED action, outside of the permittee's authority.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 18	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Open
REVIEWER Pearson, Scott		DATE: 5/24/2018
TECHNICAL AREA AT LANL IFGMP		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Monitoring/testing
REFERENCE HWFP - Section 11.10.2.8.iv: Ground water and Surface Water Sample Types		
REQUIREMENT LANGUAGE Field duplicate surface water and ground water samples shall be obtained at a frequency of ten percent. At a minimum, one duplicate sample per sampling event shall always be obtained.		
OBSERVATION This permit requirement specifies that Field blanks shall be obtained at a frequency of no less than one per day per site or unit. Although, per Appendix D of the 2018 IFGMP, Field blanks are collected at a minimum frequency of 10% of all samples collected in a sampling campaign. This is contrary to the HWFP requirement one sample per day per site, or unit.		
NOTES The current Consent Oder stipulates that all QA/QC samples be collected in accordance with an approach presented in each annual IFGMP. For the 2nd quarter or Monitoring Year 2018 it was confirmed in the IntellusNM database that only one field blank was collected for the Ancho Watershed campaign of 12 sample locations. This was less than 10 percent frequency specified in the IFGMP, and therefore does not comply with the IFGMP stipulation either.		
RECOMMENDATION This observation identifies incongruent language between the HWFP and the Consent Order, however neither the HWFP or the Consent Order conditons were met. Addressing the language differences between the HWFP and the Consent Order requires evaluation by the permittee and the NMED. Changing the language in the permit and/or the Consent Order would require NMED action, outside of the permittee's authority.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 19	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Open
REVIEWER Pearson, Scott		DATE: 5/24/2018
TECHNICAL AREA AT LANL IFGMP		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Reporting
REFERENCE HWFP - Section 11.12.4.12 (3): Periodic Monitoring Report Figures		
REQUIREMENT LANGUAGE Figures presenting the locations of piezometer, monitoring and other well locations, ground water elevation data, and ground water flow directions		
OBSERVATION This permit section requires that illustrative figures presenting the locations of piezometer, monitoring and other well locations, ground water elevation data, and ground water flow directions are included in Periodic Monitoring Reports. None of the IFGM reports reviewed include a report figure that denotes ground water flow direction related to a specific monitoring group, or basewide as a whole. The reports do include a figure that shows well locations and hydrograph insets for selected wells that show the water level history for a given well. However, this does fully not satisfy the permit requirement for flow direction.		
NOTES Ground water potentiometric maps have been noted in other reports and plans, including the 2018 IFGMP. However, flow direction arrows do not seem to be a feature that is routinely included. The current Consent Order also indicates that ground water maps with flow directions should be included in the Periodic Monitoring Reports (Section IV(n)(3) of the Consent Order).		
RECOMMENDATION Potentiometric ground water surface maps with flow direction should be included in all of the periodic monitoring reports associated with the IFGM program to be compliant with the permit requirement.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 20	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Open
REVIEWER Pearson, Scott		DATE: 5/24/2018
TECHNICAL AREA AT LANL IFGMP		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Reporting
REFERENCE HWFP - Section 11.12.4.12 (4): Periodic Monitoring Report Figures		
REQUIREMENT LANGUAGE Figures presenting ground water analytical data for the current monitoring event. The analytical data corresponding to each sampling location may be presented as individual concentrations or in table form on the figure or as an iso-concentration map.		
OBSERVATION The 2016 and 2017 Annual Periodic Monitoring Reports for the General Surveillance Monitoring Group had ground water and surface water analytical results in excess of applicable screen values that are not represented on maps.		
NOTES The current Consent Order also indicates that contaminant maps with analytical results for the current event should be presented for each contaminant exceeding screening level at more than one location. Contaminant maps showing analytical results should be included in the Periodic Monitoring Reports (Section IV(n)(4) of the Consent Order). LANL does include the required maps in some reports. For instance, the Chromium Investigation Group reports include maps that post the contaminant concentrations on maps. It is not clear if LANL only creates these maps that are for exceedances of an MCL standard, or if these maps are provided for any of the other screening standards that are defined in the IFGMP.		
RECOMMENDATION For consistency, all monitoring group reports should include contaminant maps that show data in excess of any of the screening criteria established in the IFGMP.		

SEP - Triennial Review Observation Form

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OBSERVATION NO. 21	OBSERVATION TYPE I - Operational Deficiency (not following LANL procedure)	OBSERVATION STATUS: Open
REVIEWER Pearson, Scott		DATE: 6/25/2018
TECHNICAL AREA AT LANL IFGMP		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Reporting

REFERENCE

HWFP - 11.12.4.13.i (Field Methods) and 11.12.4.13.ii (Analytical Program) Appendices

REQUIREMENT LANGUAGE

11.12.4.13.i - An appendix shall include the methods used to acquire field measurements of ground water elevations, vapor and water quality data, and vapor, surface water and ground water samples. It shall include the methods and types of instruments used to measure depths to water, air or headspace parameters, flow measurements, and water quality parameters. In addition, decontamination, well purging techniques, well sampling techniques, and sample handling procedures shall be provided in this appendix. Methods of measuring and sampling remediation systems shall be reported in this appendix, if applicable. Purge and decontamination water storage and disposal methods shall also be presented in this appendix. Copies of purge and decontamination water disposal documentation shall be provided in a separate appendix, if applicable.

11.12.4.13.ii - An appendix shall discuss the analytical program. It shall include the analytical methods, a summary of data quality objectives, and data quality review procedures. A summary of data quality exceptions and their effect on the acceptability of the analytical data with regard to the monitoring event and the site status shall be included in this appendix along with references to case narratives provided in the laboratory reports.

OBSERVATION

The IFGM reports do not include all of the permit's required appendices.

11.12.4.13.i (Field Methods): The periodic monitoring reports do not include a field methods appendix as stipulated by the HWFP requirement. Field method appendices included with the IFGMP (Appendix B and E) appear to be compliant with language of the Consent Order. Additional field method documentation is provided in a series of stand-alone SOPs. The collection of ground water measurements are documented in the following LANL Standard Operating Procedures (SOPs): Manual ground water Level Measurements (ER-SOP-20243, R1 [LANL 2017c March]); Pressure Transducer Installation, Removal, and Maintenance (ER-SOP-10010, R1; and Ground Water Sampling (ER-SOP-20032, R0)

11.12.4.13.ii (Analytical Program): The monitoring report appendices have detailed tabulations of validated analytical data that include historical trends for the past four monitoring events, comparisons to screening level criteria, and graphics of wells with screening level exceedances. An electronic CD submittal is also included with the monitoring reports which includes all the laboratory data, chain-of-custodies, laboratory narratives, and data validation reports. However, the report appendices do not have specific narratives on the analytical program, analytical methods, DQOs, and data quality review procedures. Detailed appendices for Field Methods are included as part of the 2018 IFGMP as Appendix B - Procedures, Methods, and Investigation-Derived Waste Management and the referenced LANL SOPs, Appendix C - Supplemental Information for Assigned Sampling Suites and Frequencies, and Appendix D - Field Quality Assurance/Quality Control Samples.

NOTES

The contents of the field methods and analytical appendices are not compliant with all requirements of the HWFP but appear to be compliant with language of the Consent Order.

RECOMMENDATION

This observation identifies incongruent language between the HWFP and the Consent Order and requires evaluation by the permittee and the NMED. Changing the language in the permit and/or the Consent Order would require NMED action, outside of the permittee's authority.

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 22	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Vondra, Georgia		DATE: 5/24/2018
TECHNICAL AREA AT LANL UIC- Chromium Plume		FUNCTIONAL AREA: GW
LOCATION		CATEGORY: Reporting
REFERENCE Permit DP-1835, Condition 15		
REQUIREMENT LANGUAGE The permittees shall develop a ground water elevation contour map on a quarterly basis. A contour interval appropriate to the data shall be used, but in no case shall the interval be greater than two feet. Ground water elevation maps shall depict the ground water flow direction using arrows based on the orientation of the ground water elevation contours and the location and identification of each monitoring well and contaminant source. The ground water elevation contour map shall be submitted to NMED in the quarterly monitoring reports.		
OBSERVATION Potentiometric Surface maps included in the quarterly monitoring reports do not illustrate the ground water flow direction appropriately. Arrows, indicating the direction of ground water flow were not drawn on the Potentiometric Surface maps.		
NOTES Lanl has added arrows depicting the ground water flow direction to the quarterly Potentiometric Surface maps and has resubmitted those maps to NMED.		
RECOMMENDATION Permit Condition 15 noncompliance has been resolved. No further action required.		

B.3 References

B.3.1 DP-857 Checklist References

- Los Alamos National Laboratory (LANL) (2015). *DP-857 Quarterly Report Third Quarter 2015 TA-46 Sanitary Wastewater Systems Plant*. ENV-DO-15-0301. October 22.
- LANL (2016a). *Discharge Permit DP-857 Quarterly Report First Quarter 2016 TA-46 Sanitary Wastewater Systems Plant*. EPC-DO-16-101 April 28, Los Alamos, NM.
- LANL (2016b). *Discharge Permit DP-857 Quarterly Report Second Quarter 2016 TA-46 Sanitary Wastewater Systems Plant*. EPC-DO-16-206. July 29. Los Alamos, NM.
- LANL (2016c). *Discharge Permit DP-857 Quarterly Report Third Quarter 2016 TA-46 Sanitary Wastewater Systems Plant*. EPC-DO-16-306 October 24/ Los Alamos, NM.
- LANL (2017a). *Discharge Permit DP-857 Quarterly Monitoring Report First Quarter 2017*. April 26. EPC-DO-17-161 Los Alamos, NM.
- LANL (2017b). *Discharge Permit DP-857 Quarterly Monitoring Report Second Quarter 2017*. EPC-DO-17-273 July 24. Los Alamos, NM.
- LANL (2017c). *Discharge Permit DP-857 Quarterly Monitoring Report Third Quarter 2017*. EPC-DO-17-439. October 30. Los Alamos, NM.
- LANL (2018). *Discharge Permit DP-857 Quarterly Monitoring Report Fourth Quarter 2017*. EPC-DO-18-023. January 29. Los Alamos, NM.

B.3.2 DP-1793 Checklist References

- Los Alamos National Laboratory (LANL) (2016). *LANL DP-1793 Work Plan 4*. May 27. Los Alamos, NM.
- LANL (2017a). *Annual Monitoring Report 2016 DP-1793*. February 27. Los Alamos, NM .
- LANL (2017b). *Revision 4, Land Application of Ground Water*. EPC-CP-QP-010. February 27. Los Alamos, NM.
- LANL (2017c). *DP-1793 Workplan 5*. EPC-DO-17-050. March 16. Los Alamos, NM.
- LANL (2017d). *DP-1793 Workplan 6*. EPC-DO-17-051. March 16. Los Alamos, NM.
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- LANL (2018). *Annual Monitoring Report 2017 DP 1793*. February 26. Los Alamos, NM..

B.3.3 DP-1589 Checklist References

- Los Alamos National Laboratory (LANL) (2016a). *Discharge Permit DP-1589, List of Active, Inactive and Permanently Abandoned Septic Tank Disposal Systems, Los Alamos National Laboratory*. EPC-DO-16-249. September 20. Los Alamos, NM.
- LANL (2016b). *Discharge Permit DP-1589, Seepage Pit TA-39-89 Closure, Los Alamos National Laboratory*. EPC-DO-16-309. October 19. Los Alamos, NM.
- LANL (2016c). *Discharge Permit 1589, 2016 Leachfield Inspections*. EPC-DO-16-388. December 15. Los Alamos, NM.
- LANL (2016d). *Amendments to Discharge Permit DP-1589*. EPC-DO-16-367. December 21 Los Alamos, NM.
- LANL (2016e). *Discharge Permit DP-1589, Installation of Water Meters, Los Alamos National Laboratory*. EPC-DO-16-376. December 23. Los Alamos, NM.
- LANL (2016f). *Schedule for Closing Permanently Abandoned Septic Tank Disposal Systems, Los Alamos National Laboratory, Discharge Permit DP-1589*. EPC-DO-16-387. December 23. Los Alamos, NM.
- LANL (2017a). *Discharge Permit DP-1589, Water Tightness Testing Completion Report*. EPC-DO-17-002. January 18. Los Alamos, NM.
- LANL (2017b). *Discharge Permit DP-1589, Semi-annual Monitoring Report, July 1-December 31, 2016*. EPC-DO-17-052. January 30.
- LANL (2017c). *Discharge Permit DP-1589, Semi-annual Monitoring Report, January 1-June 30, 2016*. EPC-DO-17-275. July 24. Los Alamos, NM..
- LANL (2017d). *Discharge Permit DP-1589, Semi-annual Monitoring Report, July 1-December 31, 2017*. EPC-DO-18-037. January 29.
- LANL (2017e). *Proposed Amendment to Condition No.10, Discharge Permit DP-1589*. EPC-DO-17-300. August 15. Los Alamos, NM.
- New Mexico Environment Department (NMED) (2016). Ground Water Quality Bureau to Robert Beers, Los Alamos National Security, LLC; *Email, Questions RE: DP 1589*. November 16. Santa Fe, NM.
- NMED Water Quality Bureau. (2016). *Discharge Permit Correction, Los Alamos National Laboratory Septic Tank Disposal Systems, DP-1589*. November 10. Santa Fe, NM.
- NMED (2017a). *Discharge Permit Amendment, DP-1589, Los Alamos National Laboratory Septic Tank Disposal Systems*. March 3. Santa Fe, NM.
- NMED (2017b). *Discharge Permit Amendment, DP-1589, Los Alamos National Laboratory Septic Tank Disposal Systems*. August 31. Santa Fe, NM.

B.3.4 DP-1835 Checklist References

- Los Alamos National Laboratory (LANL) (2016a). *Notification of Commencement of Injection at CrIN-6, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-372. September 22. Los Alamos, NM.
- LANL (2016b). *Notification of Injection, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-16-334. November 3. Los Alamos, NM.
- LANL (2016c). *Documentation of Treatment Efficiency, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-16-336. November 10. Los Alamos, NM.
- LANL (2016d). *Mechanical Integrity Testing of Injection Wells CrIN-4 and CrIN-5, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-16-341. November 10. Los Alamos, NM..
- LANL (2016e). *Results of Integrity Testing of Distribution Piping from CrEX-1 to CrIN-4 and CrIN-5, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-16-345. November 15. Los Alamos, NM.
- LANL (2016f). *Mechanical Integrity Testing of Injection Wells CrIN-1, CrIN-2 and CrIN-3, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-16-365. December 9. Los Alamos, NM..
- LANL (2017a). *Quarterly Report – 2106 Quarter 4, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-066. February 27. Los Alamos, NM.
- LANL (2017b). *Quarterly Report – 2107 Quarter 1, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-166. May 31. Los Alamos, NM.
- LANL (2017c). *Discharge Permit DP 1835 Proposed Updates*. EPC-DO-17-238. June 28. Los Alamos, NM.
- LANL (2017d). *Notification of Commencement of Injection at CrIN-1, CrIN-2, CrIN-3, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-264. July 13. Los Alamos, NM.
- LANL (2017e). *Quarterly Report – 2107 Quarter 2, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-274. August 21. Los Alamos, NM.
- LANL (2017f). *Integrity Testing of Distribution Piping from CrEX-1, CrEX-2, and CrEX-3 to CrIN-1, CrIN-2, CrIN-3, CrIN-4 and CrIN-5, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-302. August 28. Los Alamos, NM.
- LANL (2017g). *Path Forward in Response NMED’s Notification to Temporarily Limit Injection into CrIN-1 and CrIN-6, Discharge Permit DP 1835*. EPC-DO-17-392. October 19. Los Alamos, NM.
- LANL (2017h). *Quarterly Report – 2107 Quarter 3, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-17-449. November 22. Los Alamos, NM.

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LANL (2018). *Quarterly Report – 2107 Quarter 4, Discharge Permit DP 1835, Class V Underground Injection Control Wells*. EPC-DO-18-057. February 26.

New Mexico Environment Department (NMED) (2017). *LANL, DP-1589, Notice to temporarily limit Injection into CrIN-1 and CrIN-6*. September 1. Santa Fe, NM.

B.3.5 HWFP Ground Water Monitoring Checklist References

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- LANL (2001d). *Characterization Well R-19 Completion Report*. LA-13823-MS. May. Los Alamos, NM.
- LANL (2002). *Characterization Well R-31 Completion Report*. LA-13910-MS. March. Los Alamos, NM.
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- LANL (2003b). *Characterization Well R-23 Completion Report*. LA-UR-03-2059. June. Los Alamos, NM.
- LANL (2007a). *Well Screen Analysis Report, Revision 2*. LA-UR-07-28523. May. Los Alamos, NM.
- LANL (2007b). *Evaluation of the Suitability of Wells Near Technical Area 16 for Monitoring Contaminant Releases from Consolidated Unit 16-021(c)-99, Revision 1*. LA-UR-07-6433. September. Los Alamos, NM.
- LANL (2008a). *Well R-12 Rehabilitation and Conversion Summary Report, Revision 1*. LA-UR-08-0260. January. Los Alamos, NM.
- LANL (2008b). *Completion Report for Regional Aquifer Well R-36*. LA-UR-08-2610. April. Los Alamos, NM.
- LANL (2009a). *Completion Report for Regional Aquifer Well R-39*. LA-UR-09-1343. April. Los Alamos, NM.
- LANL (2009b). *Drilling Work Plan for Regional Aquifer Well R-27i*. LA-UR-09-4727. July. Los Alamos, NM.
- LANL (2009c). *Rehabilitation and Conversion Summary Report for Well R-16*. LA-UR-09-5372. September. Los Alamos, NM.
- LANL (2009d). *Drilling Work Plan for Regional Aquifer Well R-29*. LA-UR-09-6382. October. Los Alamos, NM.
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- LANL (2010b). *Completion Report for Intermediate Aquifer Well R-27i*. LA-UR-10-0996. March. Los Alamos, NM.
- LANL (2010d). *Completion Report for Intermediate Aquifer Well CdV-37-1i*. LA-UR-10-1771. May. Los Alamos, NM.
- LANL (2010e). *Completion Report for Regional Aquifer Well R-29*. LA-UR-10-4505. August. Los Alamos, NM.
- LANL (2010f). *Completion Report for Regional Aquifer Well R-30*. LA-UR-10-4929. August. Los Alamos, NM.

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Appendix C Hazardous Waste

C.1 Hazardous Waste Checklists

The Review Team used the following checklists to assess compliance with the Los Alamos National Laboratory's (LANL) Hazardous Waste Facility Permit (HWFP).

C.1.1 Generator Checklist

C.1.1.1 Definitions and Regulatory References

Definitions and Regulatory References Associated with CAA/SAA/UWA/UAO Checklist Header Row	
Site ID	Unique site identification number assigned to each regulated waste unit at LANL
Site Type	CAA: Central Accumulation Area (LANL is governed by regulations for Large Quantity Generators of Hazardous Waste)
	SAA: Satellite Accumulation Area (LANL is governed by regulations for Large Quantity Generators of Hazardous Waste)
	UWA: Universal Waste Area (LANL is governed by regulations for Large Quantity Generators of Universal Waste)
	UAO: Used Oil Area (LANL is governed by regulations for Used Oil Generators)
TA	Technical area where regulated waste unit is located.
Visited?	A verification on if the site was visited. A small portion of sites were not visited due to security classification or access restrictions. Some of these sites had been deactivated, but not removed from the site inventory list.
Container Condition	CAA and SAA: 40 CFR 264.171 - If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this part.

Definitions and Regulatory References Associated with CAA/SAA/UWA/UAO Checklist Header Row	
	<p>UWA: NMAC 20.4.1.1001(B) - Alternative universal waste labeling. As an alternative to the labeling requirements for universal waste in 40 CFR sections 273.14 and 273.34, universal waste handlers may use other words that accurately identify the universal waste material, for example, "spent bulbs" or "batteries for recycling." Note that the labeling must be either on the individual piece of universal waste, on the container in which the universal waste is stored, or on a pallet of banded or otherwise bound universal waste being readied for shipment. Batteries: 40 CFR 273.33(a)(1) - The container must be closed, structurally sound, compatible with the contents of the battery, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Mercury Containing Equipment: 40 CFR 273.33(c)(2) - The container must be closed, structurally sound, compatible with the contents of the device, must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and must be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means. Lamps: 40 CFR 273.33(d)(1) - A small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions. Aerosol Cans NMAC 20.4.1.1001.D.(2)(b) - The accumulation container must be closed, structurally sound, compatible with the contents of the universal waste aerosol can, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. The universal waste aerosol cans must be sorted by type and compatibility of contents to ensure that incompatible materials are segregated and managed appropriately in separate accumulation containers.</p>
	<p>UAO: 40 CFR 279.22 (b) - Containers and aboveground tanks used to store used oil at generator facilities must be:(1) In good condition (no severe rusting, apparent structural defects or deterioration); and(2) Not leaking (no visible leaks).</p>
Containers Closed	<p>CAA and SAA: 40 CFR 264.173(a) - A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.</p>
	<p>UWA: Reference "Container Condition" regulations above</p>
	<p>UAO: 20.4.1.1003.B(1) - In addition to the requirements for used oil storage in 40 CFR Section 279.22, containers and aboveground tanks used to store used oil outdoors must be closed, except when it is necessary to add or remove used oil.</p>

Definitions and Regulatory References Associated with CAA/SAA/UWA/UAO Checklist Header Row	
Content Label	<p>CAA and SAA: No regulations adopted by NMAC 20.4.1. require content labeling for waste stored at CAAs or SAAs, only for waste staged for transport. Content labeling observations for stored waste will be written as procedural observations.</p> <p>Pre-Transport Requirements: 40 CFR 262.31 - Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR part 172.</p>
	<p>UWA:</p> <p>Batteries: 40 CFR 273.34(a) - Universal waste batteries (i.e., each battery), or a container or tank in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste—Battery(ies)," or "Waste Battery(ies)," or "Used Battery(ies)."</p> <p>Mercury Containing Equipment: 40 CFR 273.34(d)(1) - Mercury-containing equipment (i.e., each device), or a container in which the equipment is contained, must be labeled or marked clearly with any of the following phrases: "Universal Waste—Mercury Containing Equipment," "Waste Mercury-Containing Equipment," or "Used Mercury-Containing Equipment."</p> <p>And 40 CFR 273.34(d)(2) - A universal waste mercury-containing thermostat or container containing only universal waste mercury containing thermostats may be labeled or marked clearly with any of the following phrases: "Universal Waste—Mercury Thermostat(s)," "Waste Mercury Thermostat(s)," or "Used Mercury Thermostat(s)."</p> <p>Lamps: 40 CFR 273.34(e) - Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with any one of the following phrases: "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)".</p> <p>Aerosol Cans NMAC 20.4.1.1001.D.(2)(b) - A handler of universal waste may accumulate universal waste aerosol cans in an accumulation container provided it is clearly marked for such use.</p>
	<p>UAO: NMAC 20.4.1.1003(A) - Alternative used oil labeling for generators. As an alternative to the labeling requirements for containers and aboveground tanks used to store used oil in 40 CFR Section 279.22, used oil generators may use other words that accurately identify the used oil, for example, "waste oil" or "oil for recycling." 40 CFR 279.22(c) - Labels.(1) Containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil."</p>

Definitions and Regulatory References Associated with CAA/SAA/UWA/UAO Checklist Header Row	
Training	CAA and SAA: No regulations adopted by NMAC 20.4.1. require training for generators of hazardous waste at CAA and SAAs, but hazardous waste generation and storage area requirements are included in the LANL Training: <i>"Waste Generator Overview"</i>
	UWA: 40 CFR 273.36 - A large quantity handler of universal waste must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies.
	UOA: No regulations adopted by NMAC 20.4.1. require training for generators of used oil, but used oil generation and storage area requirements are included in the LANL Training: <i>"Waste Generator Overview"</i>
Unregulated Waste	Unregulated waste containers will be checked for uncharacterized wastes according to 40 CFR 262.11 - A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the following method: (a) He should first determine if the waste is excluded from regulation under 40 CFR 261.4. (b) He must then determine if the waste is listed as a hazardous waste in subpart D of 40 CFR part 261.
Compatible Storage	CAA: 40 CFR 264.177 - Special requirements for incompatible wastes (a) Incompatible wastes, or incompatible wastes and materials (see appendix V for examples), must not be placed in the same container, unless Sec. 264.17(b) is complied with. (b) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material. (c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.
	SAA: No regulations adopted by NMAC 20.4.1. require segregation of incompatible wastes in Satellite Accumulation Areas. Segregation observations for Satellite Accumulation Areas will be written as procedural observations.
Labeled as HW	CAA: 40 CFR 262.34(a)(3) - While being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste".
	SAA: 40 CFR 262.34(c)(1)(ii) - Marks his containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

Definitions and Regulatory References Associated with CAA/SAA/UWA/UAO Checklist Header Row	
Volumetric Limit	SAA: 40 CFR 262.34(c)(1) - A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste listed in Sec. 261.33(e) in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with paragraph (a) of this section provided he: . . .
Accumulation Time Limit	CAA: 40 CFR 262.34(a) - Except as provided in paragraphs (d), (e), and (f) of this section, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that: . . . And 40 CFR 262.34(a)(2) - The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.
	UWA: 40 CFR 273.35(a) - A large quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of paragraph (b) of this section are met.
WCAT Verified	This section of the checklist identify the waste profile numbers that were cross-referenced against the WCAT database. Although not required to have an active profile of hazardous waste prior to accumulation, waste profiles and characterization documentation was reviewed for a representative sample of wastes for potential of mischaracterization of waste.

C.1.1.2 Compliance Checklist by Waste Management Coordinator

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
371	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6527	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6359	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 43666	Procedural Observation 2 - A 1-liter bottle containing solid laboratory waste was improperly labeled as waste catalyst ink (liquid). Observation subsequently closed.	
6360	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41872		
6413	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
3763	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6524	UOA	3	Yes	Y	Y	Y	Y	Y	Y	NA	NA	NA			
6583	UOA	3	Yes	Y	Y	Y	Y	Y	Y	NA	NA	NA			
928	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3674	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
592	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 43707		

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6520	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 45380		
2684	UOA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		Locked - Only owner can add used oil	
6534	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5842	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1004	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 43243		
2504	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6526	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
6077	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6579	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 43666 WCATs 43663		
6443	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Confirmed listed authorized users have been trained.	
121	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41430		

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
122	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41912		
2938	UOA	3	Yes	Y	Y	Y	Y	Y	Y	NA	NA	NA			
6525	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41912		
2756	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41430		
6528	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		The SAA contained unused unspent products, not waste	
5147	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6578	CAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	WCATs 42308		
374	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2953	UOA	35	Yes	Y	Y	Y	Y	Y	Y	NA	NA	NA		Outside in locked clamshell containment	
1210	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		One container pending analysis for WCATs number	
249	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
250	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44588	Confirmed listed authorized users have been trained.	
6358	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44271		
248	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
786	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 38692		
710	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
247	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6369	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44202		
785	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44822	Procedural Observation 3 - Two conflicting HW labels on container. Observation subsequently closed.	
6383	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6370	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2946	UWA	35	Yes	Y	Y	Y	NA	NA	NA	NA	NA	Y		UWA Batteries	
6368	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Not listed on site list	

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
2117	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Not listed on site list	
Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6479	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44967	Oxygen cells (Potassium Hydroxide)	
491	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6285	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		No Storage	
6401	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Has UW potentially contaminated with rad stored as Mixed Waste.	

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6130	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6587	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6553	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
Date: NA															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6589	UWA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			

Date: 3/8/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6582	SAA	50	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1778	CAA	50	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	No Waste		
6554	UWA	50	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
Date: NA															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1070	SAA	53	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2992	UWA	53	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
5790	CAA	53	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2678	UOA	53	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			

Date: 3/8/18 and 3/15/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1439	CAA	55	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y		Had Used Oil, Non Reg Waste, and HW. CAA physical features verified.	
1160	CAA	55	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	No RCRA HW Waste	South Dock. Non Regulated Waste. CAA physical features verified.	
2950	SAA	55	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2677	SAA	55	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2397	CAA	55	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y		Inspection Record Forms verified as completed weekly	
6124	SAA	55	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
6337	CAA	55	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y		CAA physical features verified. Inspection Record Forms verified as completed weekly	
1582	UWA	55	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2695	UOA	55	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
2374	UWA	36	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries	
1939	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6397	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 434647		
1612	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs W842487		
6398	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1670	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44553		
6219	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 42941		
3178	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 45232		
3489	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Waste in clean room	
6363	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Waste in clean room	
6345	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6267	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Biohazard room	

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1665	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2351	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		No profile yet because waste has not yet been characterized. The waste list for characterization is with waste.	
6366	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
602	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2494	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 42858		
6364	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5866	CAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y			
6212	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1781	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
334	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6365	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41879		
6222	SAA	46	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44553		

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6005	UWA	46	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Lamps & Mercury containing equipment	
Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1520	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
292	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6390	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1482	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Lab Trash	
6392	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6391	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6555	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	44589	Lab Trash Tetramethylammonium Borohydride	
353	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2020	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		No access to secured vault.	
5034	CAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	W820546 W820547 W820548	3 Containers (Filters) Exceeded 90 days, but not the 30 March 2018 extension as per letter.	
162	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
3197	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		No access to secured vault.	
1909	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
354	SAA	3	Yes	NA	NA	NA	NA	Y	NA	NA	NA	NA		Not listed on site list. Active SAA. No waste stored.	
6514	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6513	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6515	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		No access to secured SAA.	
255	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2936	UOA	3	Yes	Y	Y	Y	Y	Y	Y	NA	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1737	UWA	3	Yes	Y	Y	Y	Y	Y	Y	NA	NA	Y			
2949	UOA	3	Yes	Y	Y	Y	Y	Y	Y	NA	NA	NA			
2937	UOA	3	Yes	Y	Y	Y	Y	Y	Y	NA	NA	NA			
Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1713	UWA	54	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		Drum prep area for WIPP. No waste since 2013.	
3725	UOA	54	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		Used oil & UW aerosols & lamps in containment	

Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6216	UWA	54	No	NA	NA	NA	NA	NA	NA	NA	NA	Y			
6096	UWA	54	Yes	NA	Y	Y	Y	Y	NA	NA	NA	Y		UWA Lamps, batteries, and aerosols	
Date: 3/8/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6549	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6548	UOA	39	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			

Date: 3/8/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6549	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6548	UOA	39	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6220	UOA	15	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6288	UOA	15	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6287	UOA	15	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6521	SAA	15	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1006	SAA	39	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6237	SAA	39	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2406	SAA	39	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6544	SAA	49	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Jar segregation using lab pack with absorbent	
6545	UWA	49	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6324	UWA	15	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries dated 11-13-2018	
6355	UOA	36	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
3916	CAA	36	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y		Have 3 drums past 90 days (12/8/17), due to shipping pause. Listed in letter to state (W842404, W842315, W842485)	
3903	UWA	36	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6478	UWA	40	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries start date 9-18-2017	
1756	SAA	40	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3713	SAA	40	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6480	SAA	40	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Empty containers	
5984	SAA	40	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2317	SAA	40	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6520	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6607	CAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Not listed on site list. No waste > 90 days old.	

Date: 3/13/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
5932	UWA	8	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Access		
1032	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
428	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 87545	Organic solvent waste / Generators	
907	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
420	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 41809	Silver, Nickel, chromium (D074 and D0114)	
5897	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	Closed		
6372	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44239	Organic solvent	
6371	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6512	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6511	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44784	Checked waste profile by container	
5899	CAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	No Waste		
424	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 87545	Acid waste / Generator	
6104	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/13/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6257	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
4071	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 43129	Unstable petra hydro furan	
4901	UOA	9	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		500 gallon plastic AST	
4910	UWA	9	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA aerosols with oldest start date 10-12-2017	
5898	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 57433	Aqueous Waste (D001)	
430	SAA	9	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
425	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1031	SAA	9	Yes	Y	N	Y	Y	Y	Y	Y	Y	NA		Observation 9 - Open lid, poorly managed, bags of HE waste stored outside of container. Observation subsequently closed.	
3490	SAA	9	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Access		
3112	SAA	9	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42269	Water, Ethanol, Acetone, and PETN (D001 and F003)	
2334	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Lamps, mercury thermostats, and aerosols. Oldest 9-15-17	

Date: 3/13/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
2658	SAA	16	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Access	Barium Nitrate. No Access	
2659	UOA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
4911	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		Aerosols dated 10-12-2017	
2014	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Filter material with explosives	
6272	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		High explosives D003	
6509	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5284	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Lamps with oldest start date 11-29-2017	
2640	UOA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6062	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6595	SAA	22	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2517	SAA	22	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1484	SAA	22	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6427	SAA	22	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Access	Classified work in progress	
6574	SAA	22	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			

Date: 3/13/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6542	CAA	22	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	WCAT 41866 WCATS 39080 WCATS 42308	Ferric chloride (D002) Water, ethanol, acetone, & C19-HE (D001) Acid (Organic) (D002)	
971	SAA	22	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42191	Ethanol Solution (D001)	
218	SAA	22	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
3365	SAA	22	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			

Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6265	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6327	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5804	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2348	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 49328		
2770	UWA	3	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	No Waste		
5787	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 41948	Area contained approximately 1 gallon of used oil	
6299	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44521		
6420	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44323		
6418	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Verified daily use because of working fume hood.	
1111	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Not listed on site list	
6591	SAA	43	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		Biohazard room (No Entry)	
6357	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44333		

Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6239	SAA	43	Yes	Y	Y	Y	Y	NA	NA	Y	NA	NA		Biohazard room (No Entry) - WMC brought container to door. Confirmed container condition and that waste was labeled.	
6384	SAA	43	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		Active - No entry	
6029	SAA	43	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		No Entry to SAA	
6599	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste	No Waste - Active	
6500	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 44438		
6028	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6498	UOA	43	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		55 gallon drum on containment	
2323	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 43123 WCATS 43124		
2092	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3983	SAA	43	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
1603	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6419	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42259		
6274	SAA	43	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste	No Waste - Active	
2670	UWA	43	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y		UWA Lamps & Batteries start date < 1 year	
6568	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 45091		
6569	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6468	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42340 WCATS 42341		
6205	SAA	59	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
5963	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42449		
5964	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42340		
5965	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42341		

Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
5966	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste	No Waste - Active	
5967	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42340		
6585	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6586	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42341		
5968	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste	New area with no waste	
6300	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 43966		
6421	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 43966		
5961	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		All Labels pending. No WCATS numbers.	
6417	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		All Labels pending. No WCATS numbers.	
6481	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		All Labels pending. No WCATS numbers.	
5954	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/6/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
5955	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42559		
6538	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5972	SAA	59	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
758	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 44367 WCATs 44366		

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
416	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
2556	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Radiation Controlled Room	
5141	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Radiation Controlled Room	
192	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Solid Rad	
1321	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Liquid Rad	
732	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
1600	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
793	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 41569 WCATs 41571		
888	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Radiation Controlled Room	

Date: 3/1/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6530	CAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	WCATs 43075 WCATs 44224 WCATs 45245 WCATs 43973	Area has contingency plan and waste inspection forms.	
189	SAA	48	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
1723	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Radiation Controlled Room	
3447	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3448	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3525	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
1316	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1457	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Radiation Controlled Room	
2444	SAA	48	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3769	UWA	48	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y	No Waste		
3290	UOA	48	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6349	UWA	3	Yes	Y	Y	Y	Y	NA	Y	NA	NA	Y			
1293	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA	WCATS 42180	Observation 8 - Mineral Oil-Spent Cutting Fluid. Container Leaking into secondary containment. Observation subsequently closed.	
6409	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6408	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1331	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6394	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6577	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6003	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA	WCATS 45010		
6410	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
5988	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
5957	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6412	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6580	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA	No Waste		
5956	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6448	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
6018	UOA	3	Yes	Y	Y	Y	Y	NA	Y	NA	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1270	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6426	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
2860	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6425	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1295	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6556	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6616	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		Not listed on site list	
1258	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1539	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
1496	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1296	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1398	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		Not listed on site list	
6602	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
2347	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		Active SAA. No Waste.	
6407	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1310	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1409	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No Waste.	
1294	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6540	UOA	3	Yes	Y	Y	Y	Y	NA	Y	NA	Y	NA			
6575	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
702	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		Not listed on site list	
6350	UWA	3	Yes	Y	Y	Y	Y	NA	Y	NA	NA	Y			
695	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6613	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		Not listed on site list	
699	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6424	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
698	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
697	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
704	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
701	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
2767	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
852	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
703	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
696	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
2634	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
6422	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6576	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
994	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
6552	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6423	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
706	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6433	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Active SAA. No waste stored.	
5619	UOA	3	Yes	Y	Y	Y	Y	NA	Y	NA	Y	NA			
705	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6351	UWA	3	Yes	Y	Y	Y	Y	NA	Y	NA	NA	Y			
5586	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA	WCATS 50984		
5207	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6558	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1297	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
3630	UOA	3	Yes	Y	Y	Y	Y	NA	Y	NA	Y	NA			
6499	UOA	3	Yes	Y	Y	Y	Y	NA	Y	NA	Y	NA			
2807	UWA	3	Yes	Y	Y	Y	Y	NA	Y	NA	NA	Y			
6435	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	No Waste	Unused.	
1242	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
273	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		No waste stored.	
6560	CAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	NA	Y			
600	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
6438	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6562	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6563	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA		Active SAA. No waste stored.	
6564	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6434	SAA	3	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA		Active SAA. No waste stored.	
1372	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
1371	SAA	3	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA			
6570	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6571	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3276	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6352	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
5587	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6361	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3308	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6436	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6572	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
3560	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6452	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6453	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6454	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6455	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6437	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6598	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6236	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
5265	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/13/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
241	SAA	35	Yes	Y	Y	Y	Y	NA	Y	Y	Y	NA		Photo Lab chemical waste	
Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6165	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries with oldest start date 10-27-17	

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6179	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		One 55 gallon drum	
3272	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 41783	Solvent rags	
4905	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Aerosols with start date 9-20-2017	
5413	CAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y	W840723 W840724	Solvent rags	
6603	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries with start date 2-22-2018.	
6081	SAA	60	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Solvent rags	
6083	SAA	60	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Solvent rags	
2667	UOA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		525 gallon used oil AST outside building.	
2668	UOA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		Plastic 150 gallon AST with 2 drums and mobile carts.	
3291	UWA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries and Aerosols with oldest start date 3-12-2018.	
6474	SAA	60	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Unleaded fuel	
6475	SAA	60	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Unleaded fuel pending WCATS	

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
5771	SAA	60	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Three drums with a total of < 5 gallons of aerosol waste. Each drums is a different waste stream.	
3658	UWA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Lamps, batteries, aerosols, and mercury thermostats	
6600	CAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	NA	Y		Not on list. Two drums with refrigerants. Start date 2-2-2018.	

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6351	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
705	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3630	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
5586	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 50984		
5207	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
706	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
695	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6423	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2634	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
5619	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
2767	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
703	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
697	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
701	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
6350	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
852	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
699	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

WMC: SERAZIO, CHRIS; Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
994	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
6433	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
704	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
696	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
6348	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6441	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
922	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2761	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6518	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6347	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2682	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6259	SAA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA		Classified Vault. No Access.	
6440	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5721	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6333	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 43531		

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1293	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42180	Leaking container and Incorrect label	
6408	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6409	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6018	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
1409	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	No Waste		
1331	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6349	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
1310	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1294	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1270	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2860	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6425	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6426	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1539	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1258	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1496	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
2807	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6499	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6351	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
Date: 3/8/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
2643	UOA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
6332	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 841724 WCATS 841725		

Date: 3/8/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6060	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
6209	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATS 42758		
3288	UOA	50	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
2111	UWA	50	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries, Lamps, and Aerosols	
6204	UOA	55	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
1158	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5018	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6522	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6523	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Cellulosic	
6290	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5309	UWA	35	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Lamps, Aerosols, Mercury Thermostats, and batteries. The oldest start date is 9-20-2017	
6543	CAA	35	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2178	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3795	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1780	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3316	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
1640	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6510	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
5995	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
322	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
387	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
5685	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3027	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
3636	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Training certifications from 2-12-2018, 2-9-2018, and 2-21-2018	
6213	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6011	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6342	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		14 gallon overpacked ready for shipment	
6308	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6597	CAA	35	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
3021	UOA	35	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA			
2190	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6381	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6375	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6378	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6379	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 3/12/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6147	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Includes solvent recovery unit.	
6389	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6376	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6377	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6380	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6388	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6387	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6386	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6374	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6469	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6373	SAA	35	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			

Date: 2/28/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
2401	UWA	0	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2660	UOA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2385	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA			
6201	UWA	3	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries	
6601	UWA	3	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
139	SAA	3	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA	WCATs 419894		
6403	SAA	16	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Bad ammunition - to be sent to interim status units for treatment	
6404	UWA	16	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries	
6399	UWA	59	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries	
6110	UOA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	NA		Used oil AK is SDSs. Also antifreeze and diesel stored in area.	
5333	UWA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		Aerosols	
3292	UWA	60	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
3067	UOA	60	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
5757	UWA	64	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y		UWA Batteries	

Date: 2/28/18															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
Site ID	Site Type	TA	Visited?	Container Condition	Containers Closed	Content Label	Training	Unregulated Waste	Compatible Storage	Labeled as HW	Volumetric Limit	Accumulation Time Limit	WCAT ID Verified	WCAT Profile and Notes	
6338	SAA	72	Yes	Y	Y	Y	Y	Y	Y	Y	Y	NA		Waste is damaged bullets	
5036	UWA	72	Yes	Y	Y	Y	Y	Y	NA	NA	NA	Y			
WMC: WELLS, RYAN; Date: NA															
Area Description				CAA, SAA, UOA, and UWA Items					CAA & SAA Items		SAA Only	CAA UWA	WCAT Information Verification and Additional Notes		
6255	SAA	0	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
5926	SAA	5	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
6519	SAA	5	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			
6284	SAA	64	No	NA	NA	NA	NA	NA	NA	NA	NA	NA			

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C.1.2 Interim Status Treatment Facility Checklist

C.1.2.1 TA-16 Interim Status Unit Regulatory Checklist

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.105.General			
HW.105.1.US.	All permitted TSDFs are required to meet the hazardous waste management requirements outlined in their permit (40 CFR 270.10 and 270.30 through 270.33).	NA	Interim status unit does not have permit.
HW.105.2.US.	All TSDFs that have interim status are required to meet the hazardous waste management requirements of 40 CFR 265 and apply for a Part B permit (40 CFR 270.71 and 270.73(g)).	Y	Reviewed Part B Permit Application for TA-16
HW.105.3.US.	All TSDFs that store, treat, transport, or handle hazardous wastes must obtain an USEPA identification number (40 CFR 264.11 and 265.11).	Y	LANL has obtained EPA ID Number
HW.105.4.US.	TSDFs must control entry to the active portion of the TSDF (40 CFR 264.14 and 265.14).	Y	Verified that no unauthorized entry is permitted based on security equipment installed at TA-16
HW.105.5.US.	All TSDFs must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 264.30 through 264.37 and 265.30 through 265.37).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.
HW.105.6.US.	All TSDFs must take precautions to prevent accidental ignition or reaction of ignitable or reactive wastes (40 CFR 264.17(a) and 265.17(a)).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.105.7.US.	When TSDFs are required by specific treatment, storage, or disposal sections to prevent reactions from ignitable, reactive, or incompatible wastes, specific standards must be met (40 CFR 264.17(b) and 265.17(b)).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.
HW.105.8.US.	A detailed chemical and physical analysis of a representative sample, as specified in the waste analysis plan, of the hazardous waste must be obtained prior to treatment, storage or disposal (40 CFR 264.13(a) and 265.13(a)).	Y	All wastes treated are generated at LANL and are accompanied by a waste profile that is verified prior to treatment.
HW.105.9.US.	Each TSDF must have an emergency coordinator on the TSDF premises or on call at all times (40 CFR 264.55 and 265.55).	Y	Contingency plan identifies emergency coordinator.
HW.105.10.US.	TSDF emergency coordinators must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 264.56(a) through 264.56(h) and 265.56(a) through 265.56(h)) [Revised July 2006].	Y	Reviewed contingency plan to ensure it contains emergency procedures.
HW.105.11.US.	TSDFs are required to take specific actions for a response to an immediate threat to human health, public safety, property, or the environment from known or suspected presence of military munitions, other explosive material, or an explosion device (40 CFR 264.1(g)(8)(i)(D), 264.1(g)(8)(ii), and 264.1(g)(8)(iv); 265.1(c)(11)(i), 265.1(c)(11)(ii), and 265.1(c)(11)(iv) [Added July 2002].	NA	No recent record requiring implementation of contingency plan.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.110. Personnel Training			
HW.110.1.US.	All TSDF personnel who handle hazardous waste must meet certain training requirements (40 CFR 264.16(a) through 264.16(c) and 265.16(a) through 265.16(c)) [Revised July 2006].	Y	Verified training of representative sample of employees at interim status unit.
HW.110.2.US.	Training records must be maintained for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(3), 264.16(d)(4), 264.16(e), 265.16(d)(3), 265.16(d)(4), and 265.16(e)) [Revised October 2003].	Y	Verified training of representative sample of employees at interim status units.
HW.145. Documentation Requirements			
HW.145.1.US.	TSDFs that treat, store, or dispose of hazardous wastes must develop and follow a written waste analysis plan (40 CFR 264.13(b), 264.13(c), 265.13(b), and 265.13(c)). HW.145.2.US. TSDFs must conduct inspections and have a formal written inspection schedule and a log of inspection results (40 CFR 264.15 and 265.15) [Revised July 2006; Revised January 2017].	Y	Follows LANL's HW permit waste analysis plan.
HW.145.3.US.	TSDFs must have a contingency plan (40 CFR 264.50 through 264.54 and 265.50 through 265.54) [Revised July 2006, Revised July 2010].	Y	Reviewed contingency plan while doing on-site walkthrough.
HW.145.4.US.	TSDF operators must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 264.56(i), 264.77(a), 265.56(i), and 265.77(a)) [Revised January 2005; Revised July 2006].	NA	No recent record requiring implementation of contingency plan.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.145.5.US.	TSDF operators must keep written operating records at the facility (40 CFR 264.70, 264.73 through 264.74 and 265.70, 265.73 through 265.74) [Revised January 2003; Revised July 2006].	Y	Verified and reviewed operating records that were kept at facility.
HW.145.6.US.	TSDFs must prepare and submit a single copy of a biennial report to the USEPA Regional Administrator by March 1 of each even numbered year (40 CFR 264.75 and 265.75) [Revised January 2017].	Y	Biennial report submitted for 2015 reviewed for compliances.
HW.145.7.US.	TSDFs must have a written closure plan for each TSDF (40 CFR 264.110(a), 264.110(c), 264.112(a) through 264.112(c), 265.110(a), 265.110(c), and 265.112(a) through 265.112(c)) [Revised January 1999].	Y	Reviewed closure plan included in Part B Permit Application.
HW.145.8.US.	TSDFs with hazardous waste disposal units are required to have a written post-closure plan (40 CFR 264.110(b), 264.118, 264.110(b), and 265.118(a) through 265.118(d)) [Revised January 1999].	NA	No disposal.
HW.145.9.US.	TSDFs that receive waste from offsite sources must comply with manifest requirements (40 CFR 264.70, 264.71, 265.70, and 265.71) [Revised February 1995; Revised April 2005; Revised April 2010; Revised April 2014; Revised January 2017].	NA	Only receive waste generated at LANL.
HW.145.10.US.	TSDFs receiving hazardous waste from a foreign source must notify the Regional Administrator (40 CFR 264.12(a) and 265.12(a)) [Revised April 2010; Revised January 2017].	NA	Only receive waste generated at LANL.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.145.11.US.	TSDFs that receive waste from offsite sources are required to attempt to resolve manifest discrepancies when they occur (40 CFR 264.72 and 265.72) [Revised April 2005, Revised July 2010].	NA	Only receive waste generated at LANL.
HW.145.12.US.	Reports must be submitted to the USEPA when a TSDF accepts an unmanifested waste shipment (40 CFR 264.76 and 265.76) [Revised April 2005].	NA	Only receive waste generated at LANL.
HW.145.13.US.	TSDFs that initiate a shipment of hazardous waste to a different, offsite TSDF must meet certain Generator standards (40 CFR 262.10(f)).	Y	Manifests reviewed.
HW.145.14.US.	Records must be maintained with job descriptions and descriptions of training for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(1), 264.16(d)(2), 265.16(d)(1) and 265.16(d)(2)) [Added October 2003].	Y	Verified records while completing on-site walkthrough.
HW.220. General			
HW.220.1.US.	Interim status TSDFs are allowed to conduct open burn/open detonation (OB/OD) of waste explosives under specific conditions (40 CFR 265.382).	Y	Verified that all OB/OD is conducted at a minimum distance from property line.
HW.220.2.US.	Checklist item deleted [Deleted January 1999].	NA	
HW.220.3.US.	Interim status TSDFs operating surface impoundments, landfills, or land treatment facilities used to manage hazardous waste are required to implement a groundwater monitoring program that meets specific standards (40 CFR 265.90(a) through 265.90(e), and 265.91) [Revised January 1999; Revised July 2006].	NA	LANL does not perform these operations.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.220.4.US.	Interim status TSDFs must gather and analyze samples from the groundwater monitoring system according to specific parameters (40 CFR 265.90(c), 265.90(e), 265.92, 265.93(b) through 265.93(d)) [Revised January 1999; Revised July 2006].	NA	Open burn/open detonation (OB/OD) units do not require ground water monitoring.
HW.220.5.US.	Interim status TSDFs must have an outline of a more extensive groundwater quality assessment program and implement that program according to specific parameters when contamination is detected (40 CFR 265.77(b), 265.90(a) through 265.90(c), 265.90(e), 265.93(a)) [Revised January 1999; Citation Revised January 2005].	NA	OB/OD units do not require ground water monitoring.
HW.220.6.US.	Checklist item deleted. [Deleted January 1999].	NA	
HW.220.7.US.	Checklist item deleted. [Deleted January 1999].	NA	
HW.220.8.US.	The interim status TSDF is required to meet specific reporting and recordkeeping requirements except when the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(a)) [Revised January 1999].	NA	OB/OD units do not require ground water monitoring.
HW.220.9.US.	When the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination, specific records have to be maintained and reports submitted (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(b)) [Revised January 1999].	NA	OB/OD units do not require ground water monitoring.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.250. Thermal Treatment			
HW.250.1.US.	TSDFs with interim status thermal treatment facilities must meet specific requirements (40 CFR 265.370, 265.373, 265.375, 265.381, and 265.382).	Y	Verified that treatment process is approved through Part B permit application and is conducted at required distance from property line.
HW.250.2.US.	Interim status thermal treatment facilities must be certified if they treat certain wastes (40 CFR 265.383).	NA	Does not treat waste with codes F020 through F023, F026, or F027
HW.250.3.US.	Operators of interim status thermal treatment facilities must conduct monitoring and inspections while thermally treating hazardous waste (40 CFR 265.377).	Y	Verified operating records, which included inspections to be conducted while operating OB/OD unit.

C.1.2.2 TA-36 Interim Status Unity Regulatory Checklist

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.105. General			
HW.105.1.US.	All permitted TSDFs are required to meet the hazardous waste management requirements outlined in their permit (40 CFR 270.10 and 270.30 through 270.33).	NA	Interim status unit does not have permit.
HW.105.2.US.	All TSDFs that have interim status are required to meet the hazardous waste management requirements of 40 CFR 265 and apply for a Part B permit (40 CFR 270.71 and 270.73(g)).	Y	Reviewed Part B Permit Application for TA-36
HW.105.3.US.	All TSDFs that store, treat, transport, or handle hazardous wastes must obtain an USEPA identification number (40 CFR 264.11 and 265.11).	Y	LANL has obtained EPA ID Number.
HW.105.4.US.	TSDFs must control entry to the active portion of the TSDF (40 CFR 264.14 and 265.14).	Y	Verified that no unauthorized entry is permitted based on security equipment installed at TA-36.
HW.105.5.US.	All TSDFs must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 264.30 through 264.37 and 265.30 through 265.37).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.
HW.105.6.US.	All TSDFs must take precautions to prevent accidental ignition or reaction of ignitable or reactive wastes (40 CFR 264.17(a) and 265.17(a)).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.105.7.US.	When TSDFs are required by specific treatment, storage, or disposal sections to prevent reactions from ignitable, reactive, or incompatible wastes, specific standards must be met (40 CFR 264.17(b) and 265.17(b)).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.
HW.105.8.US.	A detailed chemical and physical analysis of a representative sample, as specified in the waste analysis plan, of the hazardous waste must be obtained prior to treatment, storage or disposal (40 CFR 264.13(a) and 265.13(a)).	Y	All wastes treated are generated at LANL and are accompanied by a waste profile that is verified prior to treatment.
HW.105.9.US.	Each TSDF must have an emergency coordinator on the TSDF premises or on call at all times (40 CFR 264.55 and 265.55).	Y	Contingency plan identifies emergency coordinator.
HW.105.10.US.	TSDF emergency coordinators must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 264.56(a) through 264.56(h) and 265.56(a) through 265.56(h)) [Revised July 2006].	Y	Reviewed contingency plan to ensure it contains emergency procedures.
HW.105.11.US.	TSDFs are required to take specific actions for a response to an immediate threat to human health, public safety, property, or the environment from known or suspected presence of military munitions, other explosive material, or an explosion device (40 CFR 264.1(g)(8)(i)(D), 264.1(g)(8)(ii), and 264.1(g)(8)(iv); 265.1(c)(11)(i), 265.1(c)(11)(ii), and 265.1(c)(11)(iv) [Added July 2002].	NA	No recent record requiring implementation of contingency plan.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.110. Personnel Training			
HW.110.1.US.	All TSDF personnel who handle hazardous waste must meet certain training requirements (40 CFR 264.16(a) through 264.16(c) and 265.16(a) through 265.16(c)) [Revised July 2006].	Y	Verified training of representative sample of employees at interim status units.
HW.110.2.US.	Training records must be maintained for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(3), 264.16(d)(4), 264.16(e), 265.16(d)(3), 265.16(d)(4), and 265.16(e)) [Revised October 2003].	Y	Verified training of representative sample of employees at interim status units.
HW.145. Documentation Requirements			
HW.145.1.US.	TSDFs that treat, store, or dispose of hazardous wastes must develop and follow a written waste analysis plan (40 CFR 264.13(b), 264.13(c), 265.13(b), and 265.13(c)). HW.145.2.US. TSDFs must conduct inspections and have a formal written inspection schedule and a log of inspection results (40 CFR 264.15 and 265.15) [Revised July 2006; Revised January 2017].	Y	Follows LANL's HW permit waste analysis plan.
HW.145.3.US.	TSDFs must have a contingency plan (40 CFR 264.50 through 264.54 and 265.50 through 265.54) [Revised July 2006, Revised July 2010].	Y	Reviewed contingency plan while doing on-site walkthrough.
HW.145.4.US.	TSDF operators must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 264.56(i), 264.77(a), 265.56(i), and 265.77(a)) [Revised January 2005; Revised July 2006].	NA	No recent record requiring implementation of contingency plan.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.145.5.US.	TSDF operators must keep written operating records at the facility (40 CFR 264.70, 264.73 through 264.74 and 265.70, 265.73 through 265.74) [Revised January 2003; Revised July 2006].	Y	Verified and reviewed operating records that were kept at facility.
HW.145.6.US.	TSDFs must prepare and submit a single copy of a biennial report to the USEPA Regional Administrator by March 1 of each even numbered year (40 CFR 264.75 and 265.75) [Revised January 2017].	Y	Biennial report submitted for 2015 reviewed for compliances.
HW.145.7.US.	TSDFs must have a written closure plan for each TSDF (40 CFR 264.110(a), 264.110(c), 264.112(a) through 264.112(c), 265.110(a), 265.110(c), and 265.112(a) through 265.112(c)) [Revised January 1999].	Y	Reviewed closure plan included in Part B Permit Application.
HW.145.8.US.	TSDFs with hazardous waste disposal units are required to have a written post-closure plan (40 CFR 264.110(b), 264.118, 264.110(b), and 265.118(a) through 265.118(d)) [Revised January 1999].	NA	No disposal.
HW.145.9.US.	TSDFs that receive waste from offsite sources must comply with manifest requirements (40 CFR 264.70, 264.71, 265.70, and 265.71) [Revised February 1995; Revised April 2005; Revised April 2010; Revised April 2014; Revised January 2017].	NA	Only receive waste generated at LANL.
HW.145.10.US.	TSDFs receiving hazardous waste from a foreign source must notify the Regional Administrator (40 CFR 264.12(a) and 265.12(a)) [Revised April 2010; Revised January 2017].	NA	Only receive waste generated at LANL.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.145.11.US.	TSDFs that receive waste from offsite sources are required to attempt to resolve manifest discrepancies when they occur (40 CFR 264.72 and 265.72) [Revised April 2005, Revised July 2010].	NA	Only receive waste generated at LANL.
HW.145.12.US.	Reports must be submitted to the USEPA when a TSDF accepts an unmanifested waste shipment (40 CFR 264.76 and 265.76) [Revised April 2005].	NA	Only receive waste generated at LANL.
HW.145.13.US.	TSDFs that initiate a shipment of hazardous waste to a different, offsite TSDF must meet certain Generator standards (40 CFR 262.10(f)).	Y	Manifests reviewed.
HW.145.14.US.	Records must be maintained with job descriptions and descriptions of training for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(1), 264.16(d)(2), 265.16(d)(1) and 265.16(d)(2)) [Added October 2003].	Y	Verified records while completing on-site walkthrough.
HW.220. General			
HW.220.1.US.	Interim status TSDFs are allowed to conduct open burn/open detonation (OB/OD) of waste explosives under specific conditions (40 CFR 265.382).	Y	Verified that all OB/OD is conducted at a minimum distance from property line.
HW.220.2.US.	Checklist item deleted [Deleted January 1999].	NA	
HW.220.3.US.	Interim status TSDFs operating surface impoundments, landfills, or land treatment facilities used to manage hazardous waste are required to implement a groundwater monitoring program that meets specific standards (40 CFR 265.90(a) through 265.90(e), and 265.91) [Revised January 1999; Revised July 2006].	NA	LANL does not perform these operations.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.220.4.US.	Interim status TSDFs must gather and analyze samples from the groundwater monitoring system according to specific parameters (40 CFR 265.90(c), 265.90(e), 265.92, 265.93(b) through 265.93(d)) [Revised January 1999; Revised July 2006].	NA	Open burn/open detonation (OB/OD) units do not require ground water monitoring.
HW.220.5.US.	Interim status TSDFs must have an outline of a more extensive groundwater quality assessment program and implement that program according to specific parameters when contamination is detected (40 CFR 265.77(b), 265.90(a) through 265.90(c), 265.90(e), 265.93(a)) [Revised January 1999; Citation Revised January 2005].	NA	OB/OD units do not require ground water monitoring.
HW.220.6.US.	Checklist item deleted. [Deleted January 1999].	NA	
HW.220.7.US.	Checklist item deleted. [Deleted January 1999].	NA	
HW.220.8.US.	The interim status TSDF is required to meet specific reporting and recordkeeping requirements except when the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(a)) [Revised January 1999].	NA	OB/OD units do not require ground water monitoring.
HW.220.9.US.	When the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination, specific records have to be maintained and reports submitted (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(b)) [Revised January 1999].	NA	OB/OD units do not require ground water monitoring.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.250. Thermal Treatment			
HW.250.1.US.	TSDFs with interim status thermal treatment facilities must meet specific requirements (40 CFR 265.370, 265.373, 265.375, 265.381, and 265.382).	Y	Verified that treatment process is approved through Part B permit application and is conducted at required distance from property line.
HW.250.2.US.	Interim status thermal treatment facilities must be certified if they treat certain wastes (40 CFR 265.383).	NA	Does not treat waste with codes F020 through F023, F026, or F027.
HW.250.3.US.	Operators of interim status thermal treatment facilities must conduct monitoring and inspections while thermally treating hazardous waste (40 CFR 265.377).	Y	Verified operating records, which included inspections to be conducted while operating OB/OD unit.

C.1.2.3 TA-39 Interim Status Unity Regulatory Checklist

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.105. General			
HW.105.1.US.	All permitted TSDFs are required to meet the hazardous waste management requirements outlined in their permit (40 CFR 270.10 and 270.30 through 270.33).	NA	Interim status unit does not have permit.
HW.105.2.US.	All TSDFs that have interim status are required to meet the hazardous waste management requirements of 40 CFR 265 and apply for a Part B permit (40 CFR 270.71 and 270.73(g)).	Y	Reviewed Part B Permit Application for TA-39.
HW.105.3.US.	All TSDFs that store, treat, transport, or handle hazardous wastes must obtain an USEPA identification number (40 CFR 264.11 and 265.11).	Y	LANL has obtained EPA ID Number.
HW.105.4.US.	TSDFs must control entry to the active portion of the TSDF (40 CFR 264.14 and 265.14).	Y	Verified that no unauthorized entry is permitted based on security equipment installed at TA-39.
HW.105.5.US.	All TSDFs must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 264.30 through 264.37 and 265.30 through 265.37).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.
HW.105.6.US.	All TSDFs must take precautions to prevent accidental ignition or reaction of ignitable or reactive wastes (40 CFR 264.17(a) and 265.17(a)).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.105.7.US.	When TSDFs are required by specific treatment, storage, or disposal sections to prevent reactions from ignitable, reactive, or incompatible wastes, specific standards must be met (40 CFR 264.17(b) and 265.17(b)).	Y	Verified design, construction, maintenance, and operation procedures during on-site walkthrough.
HW.105.8.US.	A detailed chemical and physical analysis of a representative sample, as specified in the waste analysis plan, of the hazardous waste must be obtained prior to treatment, storage or disposal (40 CFR 264.13(a) and 265.13(a)).	Y	All wastes treated are generated at LANL and are accompanied by a waste profile that is verified prior to treatment.
HW.105.9.US.	Each TSDF must have an emergency coordinator on the TSDF premises or on call at all times (40 CFR 264.55 and 265.55).	Y	Contingency plan identifies emergency coordinator.
HW.105.10.US.	TSDF emergency coordinators must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 264.56(a) through 264.56(h) and 265.56(a) through 265.56(h)) [Revised July 2006].	Y	Reviewed contingency plan to ensure it contains emergency procedures.
HW.105.11.US.	TSDFs are required to take specific actions for a response to an immediate threat to human health, public safety, property, or the environment from known or suspected presence of military munitions, other explosive material, or an explosion device (40 CFR 264.1(g)(8)(i)(D), 264.1(g)(8)(ii), and 264.1(g)(8)(iv); 265.1(c)(11)(i), 265.1(c)(11)(ii), and 265.1(c)(11)(iv) [Added July 2002].	NA	No recent record requiring implementation of contingency plan.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.110. Personnel Training			
HW.110.1.US.	All TSDF personnel who handle hazardous waste must meet certain training requirements (40 CFR 264.16(a) through 264.16(c) and 265.16(a) through 265.16(c)) [Revised July 2006].	Y	Verified training of representative sample of employees at interim status units.
HW.110.2.US.	Training records must be maintained for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(3), 264.16(d)(4), 264.16(e), 265.16(d)(3), 265.16(d)(4), and 265.16(e)) [Revised October 2003].	Y	Verified training of representative sample of employees at interim status units.
HW.145. Documentation Requirements			
HW.145.1.US.	TSDFs that treat, store, or dispose of hazardous wastes must develop and follow a written waste analysis plan (40 CFR 264.13(b), 264.13(c), 265.13(b), and 265.13(c)). HW.145.2.US. TSDFs must conduct inspections and have a formal written inspection schedule and a log of inspection results (40 CFR 264.15 and 265.15) [Revised July 2006; Revised January 2017].	Y	Follows LANL's HW permit waste analysis plan.
HW.145.3.US.	TSDFs must have a contingency plan (40 CFR 264.50 through 264.54 and 265.50 through 265.54) [Revised July 2006, Revised July 2010].	Y	Reviewed contingency plan while doing on-site walkthrough.
HW.145.4.US.	TSDF operators must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 264.56(i), 264.77(a), 265.56(i), and 265.77(a)) [Revised January 2005; Revised July 2006].	NA	No recent record requiring implementation of contingency plan.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.145.5.US.	TSDf operators must keep written operating records at the facility (40 CFR 264.70, 264.73 through 264.74 and 265.70, 265.73 through 265.74) [Revised January 2003; Revised July 2006].	Y	Verified and reviewed operating records that were kept at facility.
HW.145.6.US.	TSDf must prepare and submit a single copy of a biennial report to the USEPA Regional Administrator by March 1 of each even numbered year (40 CFR 264.75 and 265.75) [Revised January 2017].	Y	Biennial report submitted for 2015 reviewed for compliances.
HW.145.7.US.	TSDf must have a written closure plan for each TSDf (40 CFR 264.110(a), 264.110(c), 264.112(a) through 264.112(c), 265.110(a), 265.110(c), and 265.112(a) through 265.112(c)) [Revised January 1999].	Y	Reviewed closure plan included in Part B Permit Application.
HW.145.8.US.	TSDf with hazardous waste disposal units are required to have a written post-closure plan (40 CFR 264.110(b), 264.118, 264.110(b), and 265.118(a) through 265.118(d)) [Revised January 1999].	NA	No disposal.
HW.145.9.US.	TSDf that receive waste from offsite sources must comply with manifest requirements (40 CFR 264.70, 264.71, 265.70, and 265.71) [Revised February 1995; Revised April 2005; Revised April 2010; Revised April 2014; Revised January 2017].	NA	Only receive waste generated at LANL.
HW.145.10.US.	TSDf receiving hazardous waste from a foreign source must notify the Regional Administrator (40 CFR 264.12(a) and 265.12(a)) [Revised April 2010; Revised January 2017].	NA	Only receive waste generated at LANL.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.145.11.US.	TSDFs that receive waste from offsite sources are required to attempt to resolve manifest discrepancies when they occur (40 CFR 264.72 and 265.72) [Revised April 2005, Revised July 2010].	NA	Only receive waste generated at LANL.
HW.145.12.US.	Reports must be submitted to the USEPA when a TSDF accepts an unmanifested waste shipment (40 CFR 264.76 and 265.76) [Revised April 2005].	NA	Only receive waste generated at LANL.
HW.145.13.US.	TSDFs that initiate a shipment of hazardous waste to a different, offsite TSDF must meet certain Generator standards (40 CFR 262.10(f)).	Y	Manifests reviewed.
HW.145.14.US.	Records must be maintained with job descriptions and descriptions of training for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(1), 264.16(d)(2), 265.16(d)(1) and 265.16(d)(2)) [Added October 2003].	Y	Verified records while completing on-site walkthrough.
HW.220. General			
HW.220.1.US.	Interim status TSDFs are allowed to conduct open burn/open detonation (OB/OD) of waste explosives under specific conditions (40 CFR 265.382).	Y	Verified that all OB/OD is conducted at a minimum distance from property line.
HW.220.2.US.	Checklist item deleted [Deleted January 1999].	NA	
HW.220.3.US.	Interim status TSDFs operating surface impoundments, landfills, or land treatment facilities used to manage hazardous waste are required to implement a groundwater monitoring program that meets specific standards (40 CFR 265.90(a) through 265.90(e), and 265.91) [Revised January 1999; Revised July 2006].	NA	LANL does not perform these operations.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.220.4.US.	Interim status TSDFs must gather and analyze samples from the groundwater monitoring system according to specific parameters (40 CFR 265.90(c), 265.90(e), 265.92, 265.93(b) through 265.93(d)) [Revised January 1999; Revised July 2006].	NA	Open burn/open detonation (OB/OD) units do not require ground water monitoring.
HW.220.5.US.	Interim status TSDFs must have an outline of a more extensive groundwater quality assessment program and implement that program according to specific parameters when contamination is detected (40 CFR 265.77(b), 265.90(a) through 265.90(c), 265.90(e), 265.93(a)) [Revised January 1999; Citation Revised January 2005].	NA	OB/OD units do not require ground water monitoring.
HW.220.6.US.	Checklist item deleted. [Deleted January 1999].	NA	
HW.220.7.US.	Checklist item deleted. [Deleted January 1999].	NA	
HW.220.8.US.	The interim status TSDF is required to meet specific reporting and recordkeeping requirements except when the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(a)) [Revised January 1999].	NA	OB/OD units do not require ground water monitoring.
HW.220.9.US.	When the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination, specific records have to be maintained and reports submitted (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(b)) [Revised January 1999].	NA	OB/OD units do not require ground water monitoring.

Fed/ State Title	Language	Compliance (Y/N/NA)	Compliance Notes
HW.250. Thermal Treatment			
HW.250.1.US.	TSDFs with interim status thermal treatment facilities must meet specific requirements (40 CFR 265.370, 265.373, 265.375, 265.381, and 265.382).	Y	Verified that treatment process is approved through Part B permit application and is conducted at required distance from property line.
HW.250.2.US.	Interim status thermal treatment facilities must be certified if they treat certain wastes (40 CFR 265.383).	NA	Does not treat waste with codes F020 through F023, F026, or F027
HW.250.3.US.	Operators of interim status thermal treatment facilities must conduct monitoring and inspections while thermally treating hazardous waste (40 CFR 265.377).	Y	Verified operating records, which included inspections to be conducted while operating OB/OD unit.

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C.1.3 Permitted Treatment and Storage Facility Checklist

C.1.3.1 TSD (Permitted) Facilities General Conditions Permit Checklist

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 1			
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	This Permit is based on information submitted in the Permittees' Application. The Application has numerous iterations; however this Permit is based on:	Y	Verified accuracy of permit during on-site assessments of each facility.
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(1) the Part A Application dated November 2013;	Y	See parent note for PC 1.5 above.
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(2) the General Part B Permit Application dated August 2003;	Y	See parent note for PC 1.5 above.
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(3) the TA-3-29 CMR Part B Application dated September 1999;	Y	See parent note for PC 1.5 above.
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(4) the TA-50 Part B Permit Application dated August 2002;	Y	See parent note for PC 1.5 above.
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(5) the TA-54 Part B Permit Application dated June 2003;	Y	See parent note for PC 1.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(6) the TA-55 Part B Permit Application dated September 2003; and	Y	See parent note for PC 1.5 above.
1.5: EFFECT OF INACCURACIES IN PERMIT APPLICATION	(7) the TA-63 Permit Modification Request dated August 2011.	Y	See parent note for PC 1.5 above.
1.9.5: Duty to Mitigate	In the event of noncompliance with this Permit, the Permittees shall take all reasonable steps to minimize releases of hazardous wastes and hazardous constituents to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment (see 40 CFR § 270.30(d)).	Y	No non-compliance permit conditions items were identified that would lead to release of hazardous wastes to the environment.
1.9.6: Proper Operation and Maintenance	The Permittees shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the Permittees to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance and quality control (QA/QC) procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with this Permit (see 40 CFR § 270.30(e)).	Y	Verified performance, training, process controls, quality assurance program, and procedures during on-site assessment.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.9.9.10: Representative Sampling	All samples and measurements taken by the Permittees under any condition in this Permit shall be representative of the medium, waste, or other material being sampled. To obtain a representative waste sample, the Permittees shall use an appropriate method from 40 CFR Part 261, Appendix I or an equivalent method approved by the Department. Laboratory methods must be those specified in the most current edition of Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), or an equivalent method, as specified in Attachment C (Waste Analysis Plan) and Permit Section 2.4.	Y	Each individual site's characterization's methods were evaluated utilizing interviews with process engineers, document review, and characterization documents stored on WCATs system.
1.9.10: Reporting Planned Changes	The Permittees shall give advance written notice to the Department as soon as possible, of any planned physical alterations or additions to any permitted unit at the Facility (see 40 CFR § 270.30(l)(1)).	NA	No physical alterations have occurred that would adjust permit operations.
1.9.11: Reporting Anticipated Noncompliance	The Permittees shall give advance written notice to the Department of any planned changes to any permitted unit at the Facility or activity which may result in noncompliance with Permit requirements (see 40 CFR § 270.30(l)(2)).	NA	No physical alterations have occurred that would adjust permit operations.
1.9.12: 24 Hour and Subsequent Reporting	The Permittees shall report to the Department, both orally and in writing, any noncompliance that may endanger human health or the environment and any incident that requires implementation of Attachment D (Contingency Plan) (see 40 CFR § 270.30(l)(6)). This report shall be submitted in accordance with Permit Sections 1.9.12.1 and 1.9.12.2.	NA	No non-compliance permit conditions items were identified that would lead to endangering human health or the environment or the implementation of the contingency plan.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>1.9.12.1: 24 Hour Oral Report</p>	<p>The Permittees shall make an initial oral report within 24 hours after the time the Permittees become aware of the noncompliance or the incident specified in Permit Section 1.9.12.</p> <p>(1) the period of the noncompliance or incident including exact dates and times, and, if the noncompliance or incident has not been corrected, the anticipated time it is expected to be corrected; and</p> <p>(2) steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, incident or imminent hazard (see 40 CFR §§ 270.30(l)(6)(iii) and 270.32(b)(2)).</p> <p>The Permittees shall include in the report a description of the spill response activities as required in Permit Section 2.10.4.</p> <p>The Department may allow submittal of the written report within 15 calendar days in lieu of the five day requirement above if justifiable cause is provided in advance.</p> <p>The Permittees shall give notice by e-mail to persons on the e-mail notification list of the report of non-compliance or incident in accordance with Permit Section 1.13.</p>	<p>NA</p>	<p>No non-compliance permit conditions items were identified that would lead to endangering human health or the environment or the implementation of the contingency plan.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>1.9.13: Written Reporting of a Non-threatening Release</p>	<p>The Permittees shall report to the Department in the submittal referenced in Permit Section 1.9.14 any release from or at a permitted unit that the Permittees do not deem a threat to human health or the environment. The written report shall include a description of the occurrence and its cause including the following information: (1) name, address, and telephone number of the owner and operator; (2) name, address, and telephone number of the Facility; (3) date, time, and type of incident; (4) name and quantity of materials involved; and (5) the estimated quantity and disposition of recovered material that resulted from the incident. The Permittees shall include in the report a description of the spill response activities as required in Permit Section 2.10.4 (see 40 CFR § 270.32(b)(2)).</p>	<p>NA</p>	<p>No release from permitted units identified.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>1.9.14: Other Noncompliance</p>	<p>The Permittees shall report all instances of noncompliance not reported under Permit Section 1.9.11. This report shall be submitted to the Department annually by December 1 for the year ending the previous September 30. These reports shall contain the information listed in Permit Section 1.9.12.2 and 40 CFR § 270.30(1)(10), which is incorporated herein by reference. The Permittees shall notify the Department in writing if there were no instances of noncompliance during the reporting period. This notice shall be submitted to the Department by December 1 for the year ending the previous September 30.</p>	<p>Y</p>	<p>Public memo titled: <i>Los Alamos National Laboratory Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2017</i> dated November 28, 2017 issued to NMED fulfilling the permit requirement. Upon realizing non-compliance with Permit Section 2.4.7(4), LANL provided NMED with an updated memo titled <i>Delayed Notification of Waste Characterization Discrepancies and Addendum to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit Reporting Instances of Noncompliance and Releases/or Fiscal Year 2017</i> and dated April 26, 2018 fulfilling this requirement.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.9.15: Omissions or Misstatements in Applications or Other Reports	Whenever the Permittees become aware that they have failed to submit any relevant facts in a permit application, or have submitted incorrect information in a permit application or a report to the Department, the Permittees shall promptly report such facts or information in compliance with 40 CFR § 270.30(1)(11), which is incorporated herein by reference.	Y	Public memo titled: <i>Los Alamos National Laboratory Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2017</i> dated November 28, 2017 issued to NMED fulfilling the permit requirement. Upon realizing non-compliance with Permit Section 2.4.7(4), LANL provided NMED with an updated memo titled <i>Delayed Notification of Waste Characterization Discrepancies and Addendum to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit Reporting Instances of Noncompliance and Releases/or Fiscal Year 2017</i> and dated April 26, 2018 fulfilling this requirement.
1.9.16: Signatory requirement	The Permittees shall sign and certify all applications, reports, or information submitted to the Department and required by this Permit in compliance with 40 CFR §§ 270.11 and 270.30(k), which are incorporated herein by reference.	Y	Documents submitted to NMED verified as being signed according to the permit conditions.
1.10: INFORMATION REPOSITORY	The Permittees shall ensure that the electronic and physical IRs contain, unless specified otherwise, the following documents:	Y	LANL's IR is managed through the Electronic Public Reading Room (EPRR). Items 1-12 were evaluated through the EPRR prior to the on-site review.
1.10: INFORMATION REPOSITORY	(1) The Permittees' Part A and Part B Permit Applications associated with the permit renewal;	Y	See parent note for PC 1.10 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.10: INFORMATION REPOSITORY	(2) A link to this Permit as it appears on the Department's website (electronic IR only);	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(3) Permit modification requests associated with this Permit submitted pursuant to 40 CFR § 270.42 and any associated Department responses;	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(4) The Waste Minimization Report submitted pursuant to Permit Section 2.9;	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(5) The Biennial Report submitted pursuant to Permit Section 2.12.5;	Y	See parent note for PC 1.10 above. Extension granted for 2018 biennial report.
1.10: INFORMATION REPOSITORY	(6) Corrective action documents submitted pursuant to Permit Part 11;	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(7) Notices of deficiency or disapproval (NODs), NOD responses, final approval letters, and Department directions associated with the documents identified in Paragraphs 1, 3 and 6, above; and	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(8) Notices of violation (NOV), administrative compliance orders, responses required by the Department, and Department directions associated with this Permit. (See 40 CFR § 124.33(c))	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	The Permittees shall inform the public of the existence of each IR by the following methods:	NA	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(9) written notice to all individuals on the facility mailing list 30 days after the IR becomes operational;	Y	See parent note for PC 1.10 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.10: INFORMATION REPOSITORY	(10) public notice in area newspapers, including the Santa Fe New Mexican, the Albuquerque Journal, the Rio Grande Sun, the Taos News, and the Los Alamos Monitor when the IR becomes operational;	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(11) continuous notice on the Permittees' environmental home page of the existence of the IRs; and	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	(12) in the public notice for any of the Permittees' requested permit modifications. (See 40 CFR § 124.33(e))	Y	See parent note for PC 1.10 above.
1.10: INFORMATION REPOSITORY	The Permittees shall ensure that the electronic IR includes an electronic index of the documents contained in the IR that identifies each document by title, publication date, author, and any identification number, such as a Los Alamos Unrestricted Release (LAUR) number. The Permittees shall ensure that all documents maintained in the electronic IR are searchable by title, date, author, identification number, and individual words and phrases, and that all such documents are printable.	Y	All text in documents posted on the EPRR are searchable.
1.10: INFORMATION REPOSITORY	The Permittees shall conduct annual training to inform inexperienced computer users of how they can access and utilize the electronic IR. The Permittees shall inform the public of this training 30 days prior to the training by methods specified in Permit Section 1.10(9) through (11). The Permittees shall document the training content and all efforts to inform the public in the Facility Operating Record.	Y	Hazardous Waste Review Team attended the annual mandatory training the week of October 16.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.11: GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY	The Permittees shall maintain at the Facility the following documents and all amendments, revisions, and modifications to these documents:	Y	Items 1-5 are maintained onsite.
1.11: GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY	(1) this Permit, including all attachments;	Y	See parent note for PC 1.11 above.
1.11: GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY	(2) a topographic map as required by 40 CFR § 270.13(l) and this Permit;	Y	See parent note for PC 1.11 above.
1.11: GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY	(3) the Waste Analysis Plan as required by 40 CFR § 264.13(b) and this Permit;	Y	See parent note for PC 1.11 above.
1.11: GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY	(4) the Inspection Plan (see 40 CFR § 264.15(b)); and	Y	See parent note for PC 1.11 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
1.11: GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY	(5) a copy of emergency response agreements including all Memorandums of Agreement, Memorandums of Understanding, and Mutual Aid Agreements.	Y	See parent note for PC 1.11 above.
1.12: COMMUNITY RELATIONS PLAN	The Permittees shall establish and implement a Community Relations Plan (CRP) to describe how the Permittees will keep communities and interested members of the public informed of Permit-related activities, including waste management, closure, post-closure, and corrective action (see 40 CFR § 270.32(b)(2)). The CRP shall explain how communities and interested members of the public can participate in Permit-related activities.	Y	Community Relations Plan for 2017, dated August 31, 2017, is posted on EPRR.
1.15: COMPLIANCE SCHEDULE	The Permittees shall submit documents to the Department for its approval, or perform other actions required by this Permit, in accordance with the schedule provided in Attachment I (Compliance Schedule) (see 40 CFR § 270.33(a)). If the action is not itself the submittal of a written document, the Permittees shall submit to the Department a written notification of their compliance with the schedule no later than 14 days following the scheduled date.	Y	All submittals were verified as being submitted in a timely manner, unless an extension request was received and approved. These documents are identified in other PCs and include: Contingency Plan, Community Relations Plan, Waste Minimization Program, Public Comments on Permit, and the Biennial Report.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>1.16.1: Determination of Need for Further Action</p>	<p>The Department will determine whether closure, post-closure, and any corrective actions implemented by the Permittees with regard to the property are protective of human health and the environment in light of the transferee's intended use of the property. If the Department determines that the closure, post-closure care activities, or the corrective actions are not sufficiently protective in light of the transferee's intended use, the Department will notify the Permittees whether additional actions are necessary. The Permittees must ensure the transferee is made aware of any remaining obligations associated with the property. Upon receipt of a determination that no (future) post-closure and corrective action activities are necessary, DOE may transfer the property and shall submit a permit modification request to reflect the Facility's new boundary.</p>	NA	<p>There were no active closures of permitted facilities at the time of review.</p>
Permit Section 2			
<p>2.9: WASTE MINIMIZATION PROGRAM</p>	<p>The Permittees shall implement and maintain a waste minimization program to reduce the volume and toxicity of hazardous wastes generated at the Facility (see 40 CFR § 264.73(b)(9)). The waste minimization program shall include proposed, practicable methods of treatment and storage currently available to the Permittees to minimize the present and future threat to human health and the environment. The Waste Minimization Program shall include the following items:</p>	Y	<p>Reviewed 2017 Hazardous Waste Minimization Report (HWMR) to verify compliance (LANL 2017d).</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.9: WASTE MINIMIZATION PROGRAM	(1) written policies or statements that outline goals, objectives, and methods for source reduction and recycling of hazardous waste at the Facility;	Y	Goals defined in section 2.1 of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	(2) employee training or incentive programs designed to identify and implement source reduction and recycling opportunities for all hazardous wastes;	Y	Employee training and incentive programs are defined in section 2.2 of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	(3) source reduction or recycling measures implemented in the last five years or planned for the next federal fiscal year;	Y	Defined in section 2.4 of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	(4) estimated dollar amounts of capital expenditures and operating costs devoted to source reduction and recycling of hazardous waste;	Y	Defined in section 2.4 of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	(5) factors which have prevented implementation of source reduction or recycling;	Y	Barriers to hazardous waste minimization included in section 3.5 of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	(6) summary of additional waste minimization efforts that could be implemented at the Facility that analyzes the potential for reducing the quantity and toxicity of each waste stream through production process changes, production reformulations, recycling, and all other appropriate means including an assessment of the technical feasibility, cost, and potential waste reduction for each option;	Y	Included in each individual waste stream section of HWMR.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.9: WASTE MINIMIZATION PROGRAM	(7) flow charts and/or tables summarizing all hazardous waste streams produced by the Facility by quantity, type, building or area, and program; and	Y	Included in each individual waste stream section of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	(8) demonstration of the need to use those processes which produce a particular hazardous waste due to a lack of alternative processes, available technology, or available alternative processes that would produce less volume or less toxic waste	Y	Included in each individual waste stream section of HWMR.
2.9: WASTE MINIMIZATION PROGRAM	The Permittees shall submit to the Department a report regarding progress made in the waste minimization program in the previous year. The report shall address items (1)-(8) above, shall show changes from the previous report, and shall be submitted annually by December 1 for the year ending the previous September 30.	Y	Reviewed 2017 Hazardous Waste Minimization Report (HWMR) to verify compliance (LANL 2017d).
2.10.5: Arrangements with Local Authorities	The Permittees shall maintain its preparedness and prevention agreement with the Los Alamos County Emergency Services Division and support agreements with the Los Alamos Fire Department, the Los Alamos Police Department, and the Los Alamos Medical Center (see 40 CFR § 264.37).	Y	Memorandum of understanding between LANL and the Los Alamos Fire Department, the Los Alamos Police Department (LANL 2007, LANL 2013), and the Los Alamos Medical Center (LANL 2004) were provided to the review team.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.5: Arrangements with Local Authorities	The Permittees shall provide the Chief of the Los Alamos Fire Department (LAFD) with information that would ensure that emergency response personnel are at all times familiar with the potential hazards in performing their duties associated with the hazardous wastes at LANL's permitted hazardous waste management units. This information shall be specific to each permitted unit and at a minimum include:	Y	A memorandum titled "Resource Conservation and Recovery Act (RCRA) Permit Section 2.10.5 Annual Certification" dated 10 December 2017 shows that the required information has been provided to the Los Alamos Fire Department was provided to the review team.
2.10.5: Arrangements with Local Authorities	(1) Waste types, e.g., ignitable, reactive, corrosive;	Y	See parent comment for 2.10.5 above.
2.10.5: Arrangements with Local Authorities	(2) Waste names that identify principle hazardous chemical constituents;	Y	See parent comment for 2.10.5 above.
2.10.5: Arrangements with Local Authorities	(3) Approximate quantities of each waste type; and	Y	See parent comment for 2.10.5 above.
2.10.5: Arrangements with Local Authorities	(4) General location of waste types.	Y	See parent comment for 2.10.5 above.
2.10.5: Arrangements with Local Authorities	The Permittees' Security and Emergency Operations Division Leader and Security and Emergency Operations: Emergency Management Group Leader shall annually sign a certification stating that the LAFD has been provided with this information to the satisfaction of the Chief of the LAFD. These certification statements shall be maintained in the Facility Operating Record.	Y	See parent comment for 2.10.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.1: Implementation of Contingency Plan	The Permittees shall immediately implement Attachment D (Contingency Plan) whenever there is an incident (such as a fire, an explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents) at a permitted unit that threatens human health or the environment (see 40 CFR § 264.51(b)). The Contingency Plan shall be implemented immediately and without consideration to potential threat to human health and the environment if any of the following hazards occur at a permitted unit:	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	(1) release of a hazardous waste:	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	a. that cannot be contained with secondary containment or application of sorbents;	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	b. of inflammable material creating a fire or explosion hazard; or	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	c. that results in toxic fumes;	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	(2) explosion:	NA	Contingency plan has never been implemented.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.1: Implementation of Contingency Plan	a. if an unplanned explosion involving hazardous waste occurs; or	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	b. if an imminent danger of an explosion involving hazardous waste exists;	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	(3) fire:	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	a. if a fire involving hazardous waste occurs; or	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	b. if any building, grass, forest, or non-hazardous waste fire exists that threatens to volatilize, react, or ignite hazardous waste.	NA	Contingency plan has never been implemented.
2.11.1: Implementation of Contingency Plan	The Permittees shall ensure that an adequate number of trained emergency response personnel are available at all times, including but not limited to, holidays, nights, and weekends.	NA	Contingency plan has never been implemented.
2.11.2: Content of the Contingency Plan	The Permittees shall maintain the Contingency Plan to ensure that it at all times includes the following for each permitted unit:	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.2: Content of the Contingency Plan	(1) a description of the actions Facility personnel shall take to respond to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents to air, soil, and surface water at a permitted unit;	Y	Individual contingency plans were reviewed at each permitted unit.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.2: Content of the Contingency Plan	(2) a description of all arrangements agreed upon by local police and fire departments, hospitals, federal, state, and local emergency response teams, and tribal governments to coordinate emergency services;	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.2: Content of the Contingency Plan	(3) a description of all contracts with emergency response contractors and equipment suppliers;	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.2: Content of the Contingency Plan	(4) the names and phone numbers (i.e., office, home, cell, pager) of a primary and alternate individual assigned to act as Emergency Manager;	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.2: Content of the Contingency Plan	(5) a list of all on-site emergency equipment associated with each permitted unit including fire control, spill control, communication, decontamination, and personal protective equipment including a description of where this equipment is located, and a physical description of each item; and	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.2: Content of the Contingency Plan	(6) an evacuation plan, including a description of the signal(s) to be used to begin evacuation as well as primary and alternate evacuation routes, for personnel at a permitted unit where there is a possibility that evacuation may be necessary.	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.3: Distribution	The Permittees shall maintain copies of the Contingency Plan, including all revisions and amendments, at or in the following locations:	Y	Individual contingency plans were reviewed at each permitted unit.
2.11.3: Distribution	(1) each permitted unit;	Y	Contingency plan distributed (EPC-DO-17-076) on 31 January 2017.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.3: Distribution	(2) the Emergency Management and Response Office; and	Y	Contingency plan distributed (EPC-DO-17-077) on 31 January 2017.
2.11.3: Distribution	(3) the Facility Operating Record.	Y	Contingency plan part of FOR.
2.11.3: Distribution	The Permittees shall distribute copies of the current Contingency Plan to all entities with which the Permittees have emergency Memorandums of Understanding or Mutual Assistance Agreements, including:	Y	See subnotes below
2.11.3: Distribution	(4) the Los Alamos County Emergency Management Coordinator;	Y	Contingency plan distributed (EPC-DO-17-074) on 31 January 2017.
2.11.3: Distribution	(5) the Los Alamos Fire Department;	Y	Contingency plan distributed (EPC-DO-17-071) on 31 January 2017.
2.11.3: Distribution	(6) the Los Alamos County Police Department; and		Contingency plan distributed (EPC-DO-17-071) on 31 January 2017.
2.11.3: Distribution	(7) the Los Alamos Medical Center.	Y	Contingency plan distributed (EPC-DO-17-074) on 31 January 2017.
2.11.3: Distribution	The Permittees shall also distribute copies of the current Contingency Plan to the State of New Mexico's Department of Homeland Security and Emergency Management (DHSEM) Area 3 Emergency Coordinator.	Y	Contingency plan distributed (EPC-DO-17-073) on 31 January 2017.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.3: Distribution	The Permittees shall distribute the Contingency Plan within ten days of the effective date of this Permit and within ten days of receipt of any Department approval to a modification of the Contingency Plan. The Permittees shall ensure that all copies of the Contingency Plan distributed outside the Facility are sent by certified mail with a return receipt, or by an equivalent method, to ensure distribution. A record of compliance with this requirement shall be maintained in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	Y	Facility maintains records of distribution of contingency plan.
2.11.3: Distribution	The Permittees shall ensure that evacuation routes for a permitted unit are prominently posted at each permitted unit (see 40 CFR § 270.32(b)(2)).	Y	Evacuation routes reviewed at each permitted unit.
2.11.4: Amendments to Plan	Pursuant to 40 CFR § 264.54, which is incorporated herein by reference, the Permittees shall review the Contingency Plan and amend the Plan, if necessary, whenever:	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(1) this Permit is revised;	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(2) the Permittees' Emergency Management Plan is revised;	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(3) a Building Emergency Plan for a building which houses a permitted unit is changed and that change is contrary to a requirement in the Contingency Plan;	Y	Contingency plan verified as up to date.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.4: Amendments to Plan	(4) the Contingency Plan fails during a drill or an emergency;	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(5) the Permittees modify a permitted unit in either its design, construction, operation, maintenance, or other circumstances in a manner that increases the potential for fires, explosions, or releases of hazardous wastes or hazardous waste constituents;	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(6) the permitted unit design or operation affects the emergency response;	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(7) the Permittees modify the list of Emergency Managers;	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(8) the Permittees modify the list of emergency response equipment; or	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	(9) the Permittees review and evaluate their emergency response resources and capabilities with respect to hazardous waste management and find deficiencies.	Y	Contingency plan verified as up to date.
2.11.4: Amendments to Plan	The Permittees shall ensure that all amendments to the Contingency Plan adhere to the permit modification requirements at 40 CFR §§ 270.41 through 270.43, which are incorporated herein by reference, including the modification classifications at 40 CFR § 270.42 Appendix 1, Category B.6, which is incorporated herein by reference.	Y	Reviewed approved October 2017 Contingency Plan.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.4: Amendments to Plan	The Permittees shall ensure that all primary and alternate Emergency Managers listed in Attachment D (Contingency Plan), Section D.1.1, review the Contingency Plan at a minimum annually and log each review in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	Y	Reviewed approved October 2017 Contingency Plan.
2.11.5: Emergency Manager	The Permittees shall designate an Emergency Manager or Incident Commander equivalent to the Emergency Coordinator required at 40 CFR § 264.55, which is incorporated herein by reference, who shall be responsible for coordinating all emergency response measures related to the management of hazardous wastes. An Emergency Manager shall be on call at all times, be familiar with the Contingency Plan, and shall have the authority to commit promptly the personnel and financial resources needed to implement the Contingency Plan (see 40 CFR § 264.55).	Y	Reviewed approved October 2017 Contingency Plan.
2.11.5: Emergency Manager	The Permittees shall notify the Department in writing of changes to the personnel designated as Emergency Managers and referenced in Attachment D (Contingency Plan), Section D.1.1, and their telephone numbers. This notification shall be a Class 1 permit modification.	Y	Reviewed approved October 2017 Contingency Plan.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.6.1: Immediate Actions	In the event of an imminent or actual emergency situation, building or area personnel shall immediately activate the internal facility alarm or communication systems to notify all potentially affected facility personnel. The Emergency Manager shall ensure that the appropriate federal, tribal, state, and local agencies with designated response roles are notified and shall implement the other requirements specified in 40 CFR § 264.56, which is incorporated herein by reference, and the Contingency Plan. The Permittees shall ensure that one individual shall be named Incident Commander and others shall be identified in the order that they will assume that responsibility as alternates to the Incident Commander.	NA	No record of imminent or actual emergency situation onsite.
2.11.6.2: Release, Fire, or Explosion	The Emergency Manager shall, in the event of a fire, explosion, or release of hazardous waste or constituents:	NA	No record of imminent or actual emergency situation onsite.
2.11.6.2: Release, Fire, or Explosion	(1) as soon as practicable, identify the character source, amount, and areal extent of any released materials by observation, review of facility records, or by chemical analysis (see 40 CFR § 264.56(b)); and	NA	No record of imminent or actual emergency situation onsite.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.6.2: Release, Fire, or Explosion	(2) assess possible hazards to human health or the environment that may result from the release, fire, or explosion including both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat induced explosions) (see 40 CFR § 264.56(c)).	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	In the event that the Emergency Manager determines that there has been a release, fire, or explosion that may threaten human health or the environment outside the boundaries of the Facility, he or she shall report the findings as follows:	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	(1) if an assessment indicates that evacuation of local areas may be advisable, he or she shall immediately notify the appropriate local and tribal authorities and shall be available to assist appropriate officials in deciding whether local areas should be evacuated (see 40 CFR § 264.56(d)(1)); and	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	(2) immediately notify either the government official designated as the on-scene coordinator for that geographical area, the New Mexico Department of Public Safety dispatcher (505-827-9329), or the 24-hour National Response Center (800-424-8802) (see 40 CFR § 264.56(d)(2)). This notification shall include:	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	a. the name and telephone number of the person reporting the incident;	NA	No record of imminent or actual emergency situation onsite.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.6.3: Reporting Findings	b. the specific Facility location where the incident occurred;	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	c. the time and type of incident;	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	d. the name and quantities, to the extent known, of materials involved;	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	e. the extent of any injuries, if any; and	NA	No record of imminent or actual emergency situation onsite.
2.11.6.3: Reporting Findings	f. the possible hazards to human health and the environment outside the Facility.	NA	No record of imminent or actual emergency situation onsite.
2.11.6.4: Mitigative Measures	When the Contingency Plan is implemented under Permit Section 2.11.1, the Emergency Manager shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous wastes at the facility. These measures shall include, where applicable, stopping processes and operations, collecting and containing released wastes, and removing or isolating containers (see 40 CFR § 264.56(e)).	NA	No record of imminent or actual emergency situation onsite.
2.11.6.4: Mitigative Measures	When the Contingency Plan is implemented under Permit Section 2.11.1, the Emergency Manager shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous wastes at the facility. These measures shall include, where applicable, stopping processes and operations, collecting and containing released wastes, and removing or isolating containers (see 40 CFR § 264.56(e)).	NA	No record of imminent or actual emergency situation onsite.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.6.5: Monitoring	When the Contingency Plan is implemented under Permit Section 2.11.1, the Emergency Manager shall utilize available air monitoring resources, as appropriate, to measure and characterize any air emissions both inside and outside the Facility boundary caused by a fire, explosion, or release to the atmosphere (see 40 CFR § 270.32(b)(2)).	NA	No record of imminent or actual emergency situation onsite.
2.11.6.5: Monitoring	In the event that the Facility stops operations in response to a fire, release, or explosion, the Emergency Manager shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment as appropriate (see 40 CFR § 264.56(f)).	NA	No record of imminent or actual emergency situation onsite.
2.11.7: Post-Emergency Procedures	Immediately after an emergency in which the Contingency Plan was implemented, the Emergency Manager shall provide for the treatment, storage, or disposal of recovered wastes, contaminated soils or surface water, or any other material or contaminated environmental media that resulted from the fire, explosion, or release at the Facility (see 40 CFR § 264.56(g)).	NA	No record of imminent or actual emergency situation onsite.
2.11.7: Post-Emergency Procedures	The Emergency Manager shall ensure that in the affected areas of the Facility:	NA	No record of imminent or actual emergency situation onsite.
2.11.7: Post-Emergency Procedures	(1) no waste that may be incompatible with the released material is treated, stored, or disposed of in the impacted area until cleanup procedures are completed; and	NA	No record of imminent or actual emergency situation onsite.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.11.7: Post-Emergency Procedures	(2) all emergency equipment listed in the Contingency Plan is cleaned and fit for its intended use before operations are resumed.	NA	No record of imminent or actual emergency situation onsite.
2.11.8: Need for Further Corrective Action	If, after implementation of the Contingency Plan in response to a release of a hazardous waste or hazardous constituent, the Department determines the spill has not been entirely remediated and that corrective action may be required to address the release, the Department may require the Permittees to conduct corrective action pursuant to Permit Part 11 (Corrective Action) (see Permit Section 11.3.5).	NA	No record of imminent or actual emergency situation onsite.
2.11.9: Notification and Record Keeping	The Permittees shall notify the Department of implementation of the Contingency Plan in compliance with Permit Section 1.9.12 (see 40 CFR § 264.56(i)).	NA	No record of imminent or actual emergency situation onsite.
2.11.9: Notification and Record Keeping	The Permittees shall notify the Department, local authorities, and tribal governments before operations resume in the Facility's affected areas that the Facility is in compliance with Permit Section 2.11.7 (see 40 CFR § 270.32(b)(2)).	NA	No record of imminent or actual emergency situation onsite.
2.12: RECORDKEEPING AND REPORTING	The Permittees shall comply with the recordkeeping and reporting requirements specified throughout this Permit and at 40 CFR § 264.73, which is incorporated herein by reference.	Y	Compliance with this section was evaluated in each individual recordkeeping and reporting section.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.12.1: Manifest Systems	The Permittees shall comply with the recordkeeping and reporting requirements associated with manifests in accordance with 40 CFR §§ 264.71, 264.72, and 264.76, which are incorporated herein by reference, whenever a shipment of hazardous waste is either received at, or initiated from, the Facility.	Y	Facility maintains all waste manifest from shipping HW offsite.
2.12.2: Facility Operating Record	The Permittees shall maintain a written Facility Operating Record for the operations of each permitted unit at the Facility until the Department has approved either the closure certification statement or, if the unit enters post-closure care, the post-closure certification statement with respect to such unit as specified in Permit Sections 9.5 and 10.2.3 respectively (see 20.4.1.500 and 501 NMAC). For documents that address the entire Facility (e.g., certifications of a Facility program to reduce the volume and toxicity of hazardous waste), the Permittees shall maintain these documents throughout the active life of the Facility including the post-closure care period.	Y	Permittees maintain facility operating record for each permitted unit at the facility.
2.12.2: Facility Operating Record	Unless specifically prohibited by this Permit, an electronic record in a format acceptable to the Department and capable of producing a paper copy shall be deemed to be a written record (see 40 CFR § 270.32(b)(2)). Any substantive alterations made to the electronic record shall be documented, dated, and made part of the Facility Operating Record.	Y	Permittees maintain facility operating record for each permitted unit at the facility.
2.12.2: Facility Operating Record	The Permittees shall incorporate, as soon as it becomes available, into the Facility Operating Record the following information:	Y	Permittees maintain facility operating record for each permitted unit at the facility.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.12.2: Facility Operating Record	(1) a description of the hazardous waste received and the methods and dates of treatment and storage at each permitted unit in accordance with Appendix I of 40 CFR Part 264, which is incorporated herein by reference;	Y	Inventory record for a representative sample of waste verified at each permitted unit.
2.12.2: Facility Operating Record	(2) the location of each type of hazardous waste within each permitted unit and the total quantity of all wastes and waste types at each unit (the location shall be identified as one of the permitted units listed in Attachment J (Hazardous Waste Management Units) and any associated structure (e.g., room, dome));	Y	Inventory record for a representative sample of waste verified at each permitted unit.
2.12.2: Facility Operating Record	(3) records and results of waste analyses and waste determinations that are performed pursuant to Permit Section 2.4, Attachment C (Waste Analysis Plan), and 40 CFR §§ 264.1083, 268.7, and 268.9, which are incorporated herein by reference;	Y	All waste analysis and waste determinations are maintained on WCATs, where a representative sample were verified from each permitted unit.
2.12.2: Facility Operating Record	(4) incident reports and details of all incidents that required the implementation of Attachment D (Contingency Plan), any instance of fire, explosion, spill, or release from, or at, a permitted unit regardless of whether the incident required implementation of the Contingency Plan or Permit Part 11 (see 40 CFR § 270.32(b)(2));	NA	Contingency plan has never been implemented.
2.12.2: Facility Operating Record	(5) records and results of inspections as required in Permit Section 2.6 and Attachment E (Inspection Plan);	Y	Inspections records were reviewed for each permitted facility.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.12.2: Facility Operating Record	(6) monitoring, testing, analytical data, and response actions when required by 40 CFR §§ 264.191, 264.193, 264.195, 264.602, 264.1063(d) through 264.1063(i), 264.1064, and 264.1082 through 264.1090, which are incorporated herein by reference;	Y	Inspections records were reviewed for each permitted facility.
2.12.2: Facility Operating Record	(7) notices to off-site generators as specified in 40 CFR § 264.12(b), which is incorporated herein by reference;	NA	LANL does not receive wastes from off-site generators.
2.12.2: Facility Operating Record	(8) (reserved);	NA	
2.12.2: Facility Operating Record	(9) an annual certification stating a Facility program is in place to reduce the volume and toxicity of hazardous waste generated;	Y	Reviewed 2017 Hazardous Waste Minimization Report (HWMR) to verify compliance (LANL 2017d).
2.12.2: Facility Operating Record	(10) for treated wastes, the information contained in the notice and certification required under 40 CFR § 268.7(b), which is incorporated herein by reference;	Y	Verified that wastes are tested in accordance with Waste Analysis Plan.
2.12.2: Facility Operating Record	(11) if applicable, for hazardous wastes left in the ground after closure (i.e., disposal units), the information required of a treatment facility under 40 CFR § 268.7(b), which is incorporated herein by reference;	Y	Verified that wastes are tested in accordance with Waste Analysis Plan.
2.12.2: Facility Operating Record	(12) for stored wastes, the notice (or information contained in the notice for wastes generated on-site) and certification required at 40 CFR § 268.7, which is incorporated herein by reference;	Y	Verified that wastes are tested in accordance with Waste Analysis Plan.
2.12.2: Facility Operating Record	(13) all monitoring reports and records required by this Permit, including but not limited to:	Y	Verified that all monitoring reports and records required by this permit were in Facility Operating Record.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.12.2: Facility Operating Record	a. records of all monitoring data used to complete Permit Application(s);	Y	See parent comment for 2.12.2 above.
2.12.2: Facility Operating Record	b. all data gathered or generated during the closure or post-closure process; and	Y	See parent comment for 2.12.2 above.
2.12.2: Facility Operating Record	c. all laboratory reports, drilling logs, bench-scale or pilot scale data;	Y	See parent comment for 2.12.2 above.
2.12.2: Facility Operating Record	(14) documentation demonstrating distribution of the Contingency Plan in accordance with Permit Section 2.11.3;	Y	See parent comments for section 2.11.3
2.12.2: Facility Operating Record	(15) documentation demonstrating the installation and maintenance of secondary containment system coatings or sealants as required at Permit Section 3.7.1(4) and 4.4(4);	Y	Verified all secondary containment systems.
2.12.2: Facility Operating Record	(16) personnel training records including both introductory and continuing training programs used to prepare employees to safely operate and maintain a permitted unit in compliance with 40 CFR § 264.16(d), which is incorporated herein by reference, and this Permit;	Y	Training records maintained on Utrain.
2.12.2: Facility Operating Record	(17) documentation of notifications and trainings associated with alternate emergency equipment as required at Permit Section 2.10.2; and	Y	Training records maintained on Utrain.
2.12.2: Facility Operating Record	(18) documentation of all instances where an indoor fire suppression system has been activated resulting in fire suppressants contacting a waste storage pad.	NA	No recent record of implementation of indoor fire suppression system.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.12.3 Availability of Facility Operating Record	The Permittees shall furnish and make reasonably available for inspection, upon request by any officer, employee, or representative of the Department, the Facility Operating Record and all other records required under 40 CFR Part 264 or this Permit (see 40 CFR § 264.74(a) and pursuant to 74-4-4.3 NMSA 1978). Information and records requested by the Department pursuant to this condition shall be made available for inspection in a paper or electronic format, or both, as specified by the Department (see 40 CFR § 270.32(b)(2)).	Y	All records were available for review.
2.12.4: Record Retention	The Permittees shall retain all records required by this Permit during the course of any unresolved enforcement action regarding the Facility or as required by the Department (see 40 CFR § 264.74(b)).	NA	Did not review
2.12.5: Biennial Report	The Permittees shall submit a biennial report, which includes all of the information specified in 40 CFR § 264.75, which is incorporated herein by reference, to the Department by March 1 of each even numbered year.	Y	Biennial report submitted for 2015. An extension was received for 2017.
2.11.9: Notification and Record Keeping	For purposes of a permitted unit closure, the Permittees shall document in the Facility Operating Record all instances where an indoor fire suppression system has been activated resulting in fire suppressants contacting a waste storage pad regardless of whether the activation of the fire suppression system is due to an emergency, emergency testing, or the result of an accident or break in a system (see 40 CFR § 270.32(b)(2)).	NA	There were no active closures of permitted facilities at the time of review.

C.1.3.2 TA-3 Permitted Storage Checklist

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 3			
3.10.1: General Operating Conditions	The Permittees shall ensure that storage of hazardous or mixed waste in containers at TA-3-29 occurs only in the container storage unit (CSU) in Rooms 9010, and portions of Rooms 9020, and 9030 identified in Attachment A (Technical Area Unit Descriptions) and Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility).	Y	There was no drum storage outside of permitted areas, SAAs, and CAAs at TA-3
3.10.2: Secondary Containment	The Permittees shall paint the floors in Rooms 9010, 9020, and 9030 within the TA-3-29 permitted unit with an epoxy sealant. The sealant must be maintained in accordance with Permit Section 3.7.1 of this Part and the manufacturer's specifications.	Y	Sealant was evaluated during on-site assessment. Inspection records were reviewed to ensure epoxy sealant is checked at least weekly.
General Permit Conditions: Section 2			
2.2: AUTHORIZED WASTES	The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous wastes the Permittees proposed to manage at the units in the Permit Application, which are those wastes bearing the EPA Hazardous Waste Numbers (i.e., waste codes) listed in Attachment B (Part A Application), unless otherwise prohibited by this Permit.	Y	Verified waste codes of representative sample of wastes stored at permitted areas.
2.2.3: PCB - Contaminated Waste	The Permittees shall not store liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 parts per million (ppm) unless such storage is in compliance with 40 CFR § 268.50(f).	Y	No permitted storage of PCBs.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.3.1: Hazardous Waste Storage	The Permittees shall not store hazardous wastes beyond one year from the date that the wastes were first placed into storage at a permitted unit unless the Permittees are able to demonstrate to the Department that one of the following conditions exists:	Y	Wastes stored over a year are identified on the Site Treatment Plan (STP).
2.3.1: Hazardous Waste Storage	(1) storage is solely for the purpose of accumulating such quantities of hazardous waste restricted from land disposal as necessary to facilitate proper recovery, treatment, or disposal (see 40 CFR § 268.50(a)(2));	NA	See note for 2.3.1 above.
2.3.1: Hazardous Waste Storage	(2) the waste meets all of the applicable treatment standards under the Land Disposal Restrictions in 40 CFR Part 268, Subpart D, which are incorporated herein by reference; or	NA	See note for 2.3.1 above.
2.3.1: Hazardous Waste Storage	(3) that a mixed waste is documented on the Site Treatment Plan (STP) database under the Federal Facility Compliance Order (FFCO) and such storage is otherwise in compliance with all requirements of the STP and FFCO. (see 40 CFR §§ 268.50(b) and (e))	NA	See note for 2.3.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.3.2: Prohibition on Dilution	The Permittees shall not dilute a waste that is prohibited from land disposal or the residue from treatment of a prohibited waste as a substitute for treatment as specified at 40 CFR § 268.3, which is incorporated herein by reference. Dilution to avoid an applicable treatment standard includes, but is not limited to, the addition of solid waste to reduce a hazardous constituent's concentration or ineffective treatment that does not destroy, remove, or permanently immobilize hazardous constituents. Aggregating or mixing wastes as part of a legitimate treatment process is not prohibited dilution for purposes of this Permit.	Y	No dilution of waste observed in reviewing characterization documents of non-hazardous wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.3.3: Documentation of Exclusion or Exemption</p>	<p>The Permittees shall place a one-time notice in the Facility Operating Record for any land disposal prohibited wastes that the Permittees determine are excluded from the definition of hazardous or solid waste or determine are exempted from Subtitle C regulation under 40 CFR §§ 261.2 through 261.6 subsequent to the point of generation (see 40 CFR § 268.7(a)(7)). Exemptions required to be documented include, but are not limited to, hazardous waste managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR §§ 264.1(g)(6) and 260.10, which are incorporated herein by reference. The Facility's on-site files shall include in this documentation a description of the process that generated the waste, the justification for its exemption or exclusion, and a description of the final disposition of the waste.</p>	<p align="center">NA</p>	<p>No hazardous waste streams from TA-3 permitted units are excluded through other regulations.</p>
<p align="center">2.4.1: General Waste Characterization Requirements</p>	<p>The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous waste streams that have been fully characterized in accordance with the requirements of 40 CFR § 264.13, which is incorporated herein by reference, the conditions in this Permit Part, and Attachment C (Waste Analysis Plan).</p>	<p align="center">Y</p>	<p>Characterization of wastes checked for a representative sample. See checklist for sites visited to review specific waste streams that characterization was reviewed.</p>
<p align="center">2.4.1: General Waste Characterization Requirements</p>	<p>At a minimum, the Permittees shall obtain and document all of the information that must be known to treat, store, or otherwise manage a hazardous waste stream in accordance with 40 CFR Parts 264 and 268 including, but not limited to:</p>	<p align="center">Y</p>	<p>See parent note for PC 2.4.1 above.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(1) all applicable EPA hazardous waste numbers;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(2) waste characterization necessary to determine whether the waste stream is prohibited from land disposal;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(3) waste characterization necessary to prevent the mixing or placing of incompatible wastes in the same container (see 40 CFR §§ 264.17 and 264.177) or tank system (see 40 CFR § 264.199), and to prevent the impairment of containers (see 40 CFR § 264.172), tanks, and secondary containment systems for tanks by incompatible wastes (see 40 CFR § 264.193(c)(1));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(4) waste characterization necessary to prevent accidental or spontaneous ignition or reaction of ignitable or reactive wastes, including, but not limited to, ignition or reaction in containers (see 40 CFR § 264.17) and tank systems (see 40 CFR § 264.198);	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(5) whether the waste is a mixed waste (see 40 CFR § 270.32(b)(2));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(6) whether the waste contains free liquids;	Y	See parent note for PC 2.4.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(7) the waste stream name;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(8) the unique waste stream identifier;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(9) the waste stream generation location (e.g. building and room number); and	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(10) a detailed description of the waste stream generation process that includes all relevant material inputs or other information that identifies the chemical content and physical form of the waste.	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	The Permittees shall characterize waste streams by using current Department-approved sampling and analysis methods, acceptable knowledge, or a combination of the two. When acceptable knowledge is insufficient to fully characterize a waste stream, the Permittees shall utilize sampling and analysis to complete that characterization.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2018g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	The Permittees shall maintain all waste characterization information in the Facility Operating Record. For records that contain waste characterization information concerning any hazardous or mixed wastes managed under this Permit, which are required to be archived elsewhere at the Facility (e.g., laboratory record books), the Permittees shall maintain a traceable identifier to this documentation to facilitate access by the Permittees and the Department (see 40 CFR § 270.32(b)(2)). The Permittees shall maintain waste characterization documentation in accordance with the record retention requirements in Permit Section 2.12.2.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2018g).
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall perform all sampling and analytical procedures used for waste characterization in accordance with Department-approved laboratory analytical methods, including the most recent version of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (U.S. EPA Publication SW-846) and Tables C-16, C-17, and C-18 in Attachment C (Waste Analysis Plan). The Permittees shall ensure that samples collected and analyzed for waste characterization are representative of the chemical composition of the entire volume of the waste stream.	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall ensure that procedures used to collect a representative sample of a waste stream preserve its original physical form and composition and ensure prevention of contamination or changes in concentration of the constituents to be analyzed.	Y	Waste characterization methods were reviewed for a representative sample of wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall implement a quality assurance and quality control (QA/QC) program to ensure that sample collection and analytical procedures used to support waste characterization required under this Permit are technically accurate and statistically valid. This QA/QC program must comply with the requirements in SW-846. The Permittees shall identify and perform the appropriate number of control samples associated with each sample collected (e.g., trip and field blanks, field duplicates, field spikes). The Permittees shall maintain a record in the Facility Operating Record of all QA/QC procedures utilized in the sampling and analysis of a waste stream.	Y	QA/QC procedures regarding waste characterization at permitted units were reviewed with waste management coordinators.
2.4.2: Sampling and Analysis for Hazardous Wastes	When performing laboratory analysis, the Permittees, or a laboratory under contract to the Permittees, shall analyze the appropriate number of method blanks, laboratory duplicates, and laboratory control samples to assess the quality of the data resulting from laboratory analytical programs.	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	If the Permittees use an independent contract laboratory to conduct waste analyses, the Permittees shall require the analytical laboratory to conduct such analysis in accordance with the waste analysis conditions set forth in Permit Part 2.4 and Attachment C (Waste Analysis Plan), Section C.3 (Characterization Procedures). Copies of contracts or other documentation identifying the independent laboratory and showing that the analytical laboratory is required to operate in accordance with the waste analysis conditions shall be kept in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees may propose to the Department an analytical method that deviates from Department-approved methods. The Permittees must submit a written request to the Department for review and approval 90 days prior to using the proposed sampling or analytical procedure. This request must include the following information:	NA	There are no alternative methods performed at LANL.
2.4.2: Sampling and Analysis for Hazardous Wastes	(1) a statement of the need and justification for the proposed action;	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(2) a full description of the alternative method (i.e., a standard operating procedure) including all procedural steps and equipment used in the method;	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(3) a description of the types of wastes, or waste matrices, for which the proposed method may be used;	NA	See parent note for PC 2.4.2.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	(4) comparative analytical data obtained from using the proposed method with those obtained from using the Department-approved relevant or corresponding methods in Attachment C (Waste Analysis Plan);	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(5) a demonstration that the proposed analytical procedure is equal to, or superior to, the corresponding methods in Attachment C (Waste Analysis Plan) in terms of its sensitivity, accuracy, and precision (i.e., reproducibility);	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(6) an assessment of any factors which may interfere with or limit the use of the proposed method; and	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(7) a description of the QA/QC procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method.	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall obtain written approval from the Department of the alternative method before substituting it for an approved method under this Permit, except that a change requested to conform with agency guidance or regulations shall be a Class 1 permit modification (see 40 CFR § 270.42 Appendix 1).	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.3: Acceptable Knowledge	The Permittees may use acceptable knowledge to characterize waste in lieu of, or to supplement, sampling and analysis. The Permittees shall document all uses of acceptable knowledge, and include in the acceptable knowledge documentation all of the background information assembled and used in the characterization process relevant to the decision to use acceptable knowledge (see 40 CFR § 270.32(b)(2)). The record must document the resolution of any data discrepancies between different sources of acceptable knowledge. Acceptable knowledge documentation must be maintained in an auditable form in the Facility Operating Record. The Permittees shall assign a traceable identifier to this documentation to facilitate both access to this information and its verification by the Permittees and the Department.	Y	Acceptable knowledge documents were reviewed for a representative sample of hazardous wastes and these documents are retained on the WCATs system (LANL 2018g).
2.4.7: Waste Characterization Review	The Permittees shall ensure that the initial characterization of any hazardous waste stream managed under this Permit is reviewed or repeated to verify that the characterization is accurate and up to date (see 40 CFR § 264.13(b)(4)). The Permittees shall document this review in the Facility Operating Record. The Permittees shall perform the following:	Y	WCATs system requires annual verification of waste stream profiles, which includes characterization records (LANL 2018g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.7: Waste Characterization Review	(1) Annually reevaluate all hazardous waste streams generated to verify the accuracy of initial and subsequent characterization results. The annual reevaluation shall be required no later than one year from the date of initial characterization of the hazardous waste stream or one year from the last annual reevaluation;	Y	See parent note for PC 2.4.7 above.
2.4.7: Waste Characterization Review	(2) Recharacterize hazardous wastes whenever there is a change in the waste-generating processes which includes a change in the status of the waste for purposes of Land Disposal Restrictions or when analytical results indicate a change in the waste stream;	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.4.7: Waste Characterization Review</p>	<p>(3) Annually verify the waste characterization of one percent of hazardous waste streams characterized solely by acceptable knowledge (see 40 CFR §§ 264.13(b)(4) and 270.32(b)(2)). Such waste characterization verification shall be performed by quantitative chemical analyses appropriate for the waste as specified in Attachment C (Waste Analysis Plan). The one percent of wastes whose characterization is to be verified shall be determined in relation to the total number of unique waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year. The waste streams whose characterization is to be verified shall be chosen without further bias and the selection procedure shall be documented in the Facility Operating Record. Wastes not required to undergo this annual verification and not to be counted toward the total number of wastes managed in the previous year include mixed transuranic wastes, hazardous debris, and hazardous wastes that are hazardous only because they are listed at 40 CFR Part 261, Subpart D; and</p>	<p align="center">Y</p>	<p>See parent note for PC 2.4.7 above.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.7: Waste Characterization Review</p>	<p>(4) Recharacterize a hazardous waste stream whenever the Permittees are notified by a receiving off-site facility that the characterization of a hazardous waste they obtained from the Permittees' Facility does not match a pre-approved waste analysis certification or accompanying waste manifest or shipping paper. The Permittees shall notify the Department in writing within three days of their receipt of the notice of the discrepancy from a receiving facility.</p>	<p>NA</p>	<p>No recent RCRA waste exception reports from permitted units at TA-3</p>
<p>2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements</p>	<p>The Permittees shall characterize hazardous wastes managed in containers and tanks to determine the average volatile organic compound (VOC) concentration relative to 500 parts per million by weight (ppmw) at the point of waste origination in compliance with 40 CFR Part 264, Subpart CC. The Permittees shall determine the average VOC concentration either by utilizing acceptable knowledge or by using the procedures specified in 40 CFR § 264.1083(a), which is incorporated herein by reference. The Permittees shall review and update this determination at least once every 12 months following the date of the initial determination in compliance with 40 CFR § 264.1082(c)(1), which is incorporated herein by reference.</p>	<p>NA</p>	<p>No wastes requiring emission controls observed at TA-3, except for mixed wastes.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to control air pollutant emissions from a container or tank and thus shall not be required to characterize the waste for its average VOC concentration in the following circumstances:	NA	No wastes requiring emission controls observed at TA-3, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(1) if the container or tank stores mixed waste (see 40 CFR § 264.1080(b)(6));	NA	No wastes requiring emission controls observed at TA-3, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(2) if the container storing the wastes has a total capacity of less than 0.1 cubic meter (approximately 26 gallons)(see 40 CFR § 264.1080(b)(2)); or	NA	No wastes requiring emission controls observed at TA-3, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(3) if a tank has stopped receiving hazardous waste and is undergoing closure (see 40 CFR § 264.1080(b)(3)).	NA	No wastes requiring emission controls observed at TA-3, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to determine the average VOC concentration of wastes if control of air pollution emissions from containers is achieved utilizing the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b), which is incorporated herein by reference.	NA	No wastes requiring emission controls observed at TA-3, except for mixed wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall ensure that before any hazardous waste is managed at a permitted unit a determination has been made as to whether the waste has to be treated before it can be land disposed (see 40 CFR § 268.7(a)). The Permittees must characterize waste designated to be disposed of at the Waste Isolation Pilot Plant (WIPP) to determine whether it is subject to the land disposal prohibitions, except that such waste is not required to be characterized to determine all applicable underlying hazardous constituents listed in 40 CFR § 268.48.</p>	<p>Y</p>	<p>Verified through manifest review that all wastes that are prohibited from land disposal are sent for treatment.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When using laboratory analysis as part of a hazardous waste characterization pursuant to Attachment C (Waste Analysis Plan), Section C.3.1.2, the Permittees shall require the laboratory to report concentrations of all hazardous constituents listed at 40 CFR § 268.48, Table UTS that the analytical test method used is capable of measuring, as specified at the most recent version of the U.S. EPA's Test Methods for Evaluating Solid Wastes (SW-846). When performing this laboratory analysis the Permittees will not be required to perform sample preparation or determinative procedures other than those performed routinely for the target analytes.</p>	<p>Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When performing or obtaining laboratory analysis to demonstrate that a waste meets its applicable treatment standard concentrations specified in 40 CFR § 268.40, Treatment Standards for Hazardous Wastes, in compliance with 40 CFR §§ 268.7(a) and (b), which are incorporated herein by reference, the Permittees shall ensure that analytical method practical quantification limits are not higher than the applicable treatment standard (see 40 CFR § 270.32(b)).</p>	<p>Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall characterize treatment-derived wastes by determining whether the waste is a hazardous or mixed waste in compliance with the requirements in Permit Section 2.4.1 and in compliance with the notification and recordkeeping requirements specified in 40 CFR § 268.7(b)(3)(ii), Treatment Facility Paperwork Requirements Table, which is incorporated herein by reference.</p>	<p>NA</p>	<p>No treatment at TA-3, so no treatment derived waste.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions	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.	NA	No treatment at TA-3, so no treatment derived waste.
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:	Y	All entries to TA-3 are gated and monitored.
2.5: SECURITY	(1) 24-hour surveillance system continuously monitoring and controlling entry into the permitted units at the Facility; or	Y	See parent note for PC 2.5 above.
2.5: SECURITY	(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).	Y	See parent note for PC 2.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	Signage verified during on-site assessment.
2.5.1: Warning Signs	DANGER – UNAUTHORIZED PERSONNEL KEEP OUT (PELIGRO – SE PROHIBE LA ENTRADA A PERSONAS NO AUTORIZADAS)	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	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).	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	The Permittees shall post signs requested by Santa Clara Pueblo (Kha-'Po). The Permittees shall include on the signs the following warning:	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	Wi-i ts'uni pi' – (DO NOT ENTER)	NA	See parent note for PC 2.5.1 above.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall inspect all the permitted units for malfunctions, deterioration, operator errors, and discharges which may cause or may lead to:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	(1) a release of hazardous constituents to the environment; or	NA	See parent note for PC 2.6 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6: GENERAL INSPECTION REQUIREMENTS	(2) a threat to human health. (see 40 CFR § 264.15(a))	NA	See parent note for PC 2.6 above.
2.6: GENERAL INSPECTION REQUIREMENTS	Inspections shall be conducted of all waste management structures, base materials, containers, monitoring equipment, safety and emergency equipment, security devices, and operating equipment that are important in preventing, detecting, and responding to environmental or human health hazards associated with hazardous wastes (see 40 CFR § 264.15(b)(1)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall implement the inspection program for the permitted units in compliance with the operating schedule, recordkeeping, and response action commitments in Attachment E (Inspection Plan).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6.1: Inspection Schedule	The Permittees shall conduct inspections to identify problems in time to correct them before they harm human health or the environment (see 40 CFR § 264.15(a)). The Permittees shall inspect the permitted units and all associated structures and equipment, in compliance with the inspection schedules contained in Attachment E (Inspection Plan).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6.1: Inspection Schedule	The Permittees shall inspect areas subject to spills, such as loading and unloading areas, daily when in use (see 40 CFR § 264.15(b)(4)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.2: Repair of Equipment and Structures	The Permittees shall remedy any deterioration or malfunction of equipment or structures discovered during an inspection which may lead to an environmental or human health hazard. The Permittees shall mitigate such deterioration or malfunction within 24 hours of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (see 40 CFR § 264.15(c)).	Y	No active "Action Requests" at TA-3.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	The Permittees shall record the results of inspections on the Hazardous Waste Facility Inspection Record Form in Attachment E (Inspection Plan) for each inspection conducted in accordance with Permit Section 2.6 and Attachment E. At a minimum, the Permittees shall produce a handwritten record of the date and time of the inspection, an identification of the permitted unit and associated structures or equipment, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions taken (see 40 CFR § 264.15(d)). The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and errors are crossed out with a single line, initialed, and dated by the individual making the correction. The Permittees shall maintain the inspection logs and records in a paper format. The Permittees may transfer the inspection logs and records into an electronic format acceptable to the Department. The paper format shall be retained for the period of time specified in Permit Section 2.12.2.	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6.3: Inspection Logs and Records	The Permittees shall record the following observations or actions in the Facility Operating Record:	Y	Evaluated for compliance based on review of items 1-6 below.
2.6.3: Inspection Logs and Records	(1) the results of any preventive maintenance activities including, but not limited to, maintenance on floors, secondary containment structures, unit drainage structures, and fire protection equipment at a permitted unit;	Y	No current preventive maintenance activities requiring immediate attention identified in inspection record review or on-site review.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	(2) any malfunctions and deterioration of such structures or equipment;	Y	No current malfunctions or deteriorations requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(3) any errors affecting waste containment or compliance with this Permit;	Y	No current waste containment issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(4) the locations, dimensions, and repairs of all identified cracks or gaps in floors or base materials;	Y	No current flooring issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(5) any discharges of hazardous waste, hazardous constituents, or fire suppression systems at a permitted unit; and	Y	No records of release or use of fire suppression system.
2.6.3: Inspection Logs and Records	(6) any occurrences that might cause or exacerbate contamination of a permitted unit.	Y	No record of contamination of a permitted unit.
2.6.3: Inspection Logs and Records	The Permittees shall maintain inspection logs in the Facility Operating Record as specified in Permit Section 2.12.2.	Y	Inspection logs maintained onsite, as verified when reviewed.
2.7: PERSONNEL TRAINING	The Permittees shall ensure that all Facility personnel who are involved in hazardous waste management activities regulated under this Permit successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is incorporated herein by reference, as well as the training requirements in Attachment F (Personnel Training Plan).	Y	Reviewed training from a representative sample of waste handlers at the site.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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, 22, 24, and 38 in Permit Attachment N (Figures). At TA-63, the Permittees shall ensure that containers holding ignitable or reactive waste are located at least 15 meters from the Transuranic Waste Facility (TWF) fence line, as shown in Figure 55 in Permit attachment N (Figures) (see 40 CFR §§ 264.176 and 270.32(b)(2)).	Y	Verified during on-site review that ignitable, reactive, and incompatible wastes are: -separated from sources of ignition -segregated by dike, berm, wall, or other device from incompatible wastes -15 meters from facility boundary -stored in containers that have been decontaminated or have not previously held incompatible materials
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	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:	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(5) a threat to human health or the environment.	Y	See parent note for PC 2.8 above.
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:	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(1) ensure there are no sources of open flames in, on, or around the container or tank;	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.1: Ignitable and Reactive Waste Precautions	(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;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(3) maintain adequate clearance around fire hydrants at permitted units;	Y	Verified there were no impediments from hydrant access.
2.8.1: Ignitable and Reactive Waste Precautions	(4) use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive wastes;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(5) ensure appropriate lightning protection is provided for all storage and treatment units;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(6) perform ongoing inspection, testing, and maintenance of fire protection equipment to determine appropriate test criteria and preventative maintenance activities;	Y	Verified inspection reports evaluated fire protection equipment.
2.8.1: Ignitable and Reactive Waste Precautions	(7) confine smoking and open flames to designated areas that are a minimum of 50 feet from areas where ignitable or reactive wastes are handled;	Y	Verified no smoking was allowed in permitted units.
2.8.1: Ignitable and Reactive Waste Precautions	(8) stack containers of ignitable and reactive wastes no more than 2 drums high to comply with the National Fire Protection Association's (NFPA) Flammable and Combustible Liquids Code; and	Y	Verified ignitable and reactive wastes were stored no more than 2 drums high.
2.8.1: Ignitable and Reactive Waste Precautions	(9) ensure that each permitted unit's fire suppression system is compatible with the hazardous waste being stored or treated at the permitted unit.	Y	Verified fire suppression systems were adequate for wastes stored.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.1: Ignitable and Reactive Waste Precautions	The Permittees shall assume that all drums with volume capacities between 55 and 110 gallons that hold mixed transuranic wastes and that are not vented, and standard waste boxes that hold mixed transuranic waste and are not vented, contain hydrogen gas and the associated wastes are subject to the conditions of this Permit Section (2.8.1).	NA	Verified all mixed transuranic (MTRU) drums are vented.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers must be separated from the other materials (or waste) or is protected from them by means of a dike, berm, wall, or other device not to include the container, in order to, in the event of leakage from containers under conditions normally incident to storage, prevent the commingling of the incompatible wastes or materials (see 40 CFR § 264.177(c)).	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored within or on the same secondary containment structure.	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored so that a release or spill of these wastes might commingle in a fire suppression water holding area or tank.	Y	All wastes containers and containment systems were evaluated to ensure no incompatible wastes would commingle in fire suppression water holding area or tank.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that all waste and materials are segregated and stored in accordance with the Department of Transportation's (DOT) compatibility groupings or classes contained in 49 CFR § 177.848 (see 40 CFR § 270.32(b)(2)).	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall not store cyanides and cyanide mixtures or solutions with acids if a mixture of the materials could generate hydrogen cyanide. The Permittees shall not store Class 8 (corrosive) liquids above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) wastes except when it is known that the mixture of the wastes could not cause a fire or a dangerous evolution of heat or gas.	Y	Verified that cyanides are segregated from acids.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that hazardous wastes are not placed in an unwashed container (see 40 CFR § 264.177(b)) or tank (see 40 CFR § 264.199(b)) that previously held an incompatible waste or material.	Y	All containers are either new or washed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10: PREPAREDNESS AND PREVENTION	The Permittees shall maintain and operate each permitted unit in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituent to the air, soil, or surface water that could threaten human health or the environment (see 40 CFR § 264.31). In addition to the general preparedness and prevention requirements identified here, the Permittees shall comply with the TA-specific preparedness and prevention requirements and shall maintain the equipment identified in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan)	Y	All permit required controls were verified as operational and in good condition during on-site walkthrough.
2.10.1: Required Equipment	At a minimum, the Permittees shall maintain at the Facility and at each permitted unit the internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment listed in the tables in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan) (see 40 CFR § 264.32(b)(2)). The Permittees shall ensure that any changes to the emergency equipment lists adhere to the permit modification requirements at 40 CFR §§ 270.41 through 270.43.	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.1: Required Equipment	The Permittees shall maintain spill kits at each permitted container storage and tank unit as specified in Attachment D (Contingency Plan). These spill kits shall be capable of mitigating small containable spills of acidic, caustic, inflammable, and otherwise hazardous waste present at the unit. For larger spills, the Permittees shall have plugging and diking equipment, siphon pumps, and loaders readily available at the Facility.	Y	Verified adequate spill kits were maintained onsite.
2.10.1: Required Equipment	The Permittees shall ensure that there is adequate water pressure and volume available to each permitted unit to provide for fire suppression (see 40 CFR § 264.32(d)).	NA	Did not evaluate design of facility.
2.10.1: Required Equipment	The Permittees shall operate and maintain the area-wide environmental monitoring network as specified in Section D.7.3 of Attachment D (Contingency Plan).	Y	Reviewed records of area-wide environmental monitoring network.
2.10.1: Required Equipment	At permitted units where equipment is necessary to mitigate the effects of a power outage, the Permittees shall maintain batteries, generators, or some other form of backup power supply capable of operating equipment including evacuation alarms, emergency communication equipment, automatic fire suppression systems, and emergency lights. (See 40 CFR §§ 270.14(b)(8)(iv) and 270.32(b)(2))	Y	Verified back-up power equipment was available.
2.10.1: Required Equipment	The Permittees shall ensure that it is possible to provide fuel to backup generators under adverse conditions.	Y	Verified back-up power equipment was available.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>The Permittees shall test the equipment listed in Section E.1.1 of Attachment E (Inspection Plan) in accordance with the schedule identified in Attachment E to ensure its functionality in the event of an emergency. The Permittees shall maintain the equipment specified in Permit Section 2.10.1 to ensure its proper operation in the event of an emergency (see 40 CFR § 264.33). This equipment shall undergo inspection in accordance with Attachment E (Inspection Plan). The Permittees shall document such inspections in the Facility Operating Record in accordance with this Permit Part.</p>	<p>NA</p>	<p>No site-specific items for TA-3 identified in Attachment E.</p>
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>If testing or inspections identify any missing or nonfunctioning communication equipment, alarm system, fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired or provide substitute equipment. The Permittees shall ensure that employees and contractors working in the area are notified of the presence of substitute equipment and, if necessary, provide them with training in its use (see 40 CFR § 270.32(b)(2)). The Permittees shall document in the Facility Operating Record instances of such notifications and trainings. The Permittees shall ensure that malfunctioning equipment is clearly marked as out of use and that the location of the substitute equipment is clearly posted on or adjacent to the faulty equipment (see 40 CFR §§ 264.31 and 270.32(b)(2)).</p>	<p>Y</p>	<p>Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.3: Access to Communications or Alarm System	Whenever an employee is present at a permitted unit and the unit contains hazardous waste, the Permittees shall ensure that all personnel at the unit have immediate access to an internal alarm or emergency communication device either directly or through visual or voice contact with another employee (see 40 CFR § 264.34(a)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.3: Access to Communications or Alarm System	The Permittees shall ensure that any employee working alone at a permitted unit is capable of summoning external emergency assistance and shall have immediate access to a device, such as a hand-held two-way radio, a cell phone, or a landline telephone (see 40 CFR § 264.34(b)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.4: Spill Response	The Permittees shall ensure that spills of hazardous wastes, including small localized spills that can be managed without the assistance of emergency management personnel, are managed utilizing, at a minimum, the following procedures:	Y	No active spills were identified during time of review, but spill response procedures were reviewed.
2.10.4: Spill Response	(1) isolate the immediate area and deny entry to all unauthorized personnel;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(2) contain the spill (e.g., spreading sorbents, forming temporary dikes);	Y	See note for parent PC 2.10.4 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.4: Spill Response	(3) define the nature and extent of the spilled waste;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(4) package the spilled waste and contaminated materials in containers; and	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(5) decontaminate the area, all clean-up equipment, and personnel.	Y	See note for parent PC 2.10.4 above.
Permit Section 3			
3.1: GENERAL CONDITIONS	(1) The Permittees shall store and otherwise manage containers of hazardous waste in accordance with 40 CFR Part 264, Subpart I, which is incorporated herein by reference, and Attachment A (Technical Area Unit Descriptions).	Y	Verified during on-site review that containers were stored in accordance with site-specific information in Attachment A and Subpart I: Use and Management of Containers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.1: GENERAL CONDITIONS	(2) The Permittees shall only store hazardous waste containers at the permitted units identified as utilizing waste process code S01 and specified in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility). The Permittees are authorized to store only those wastes identified by EPA Hazardous Waste Numbers (waste codes) listed in Attachment B (Part A Application) and identified as utilizing waste process code S01. The Permittees shall not store containers of hazardous waste in excess of the maximum capacities for each permitted container storage unit (CSU) identified in Attachment J, Table J-1. However, for purposes of compliance with secondary containment requirements, the holding of a hazardous waste container within a permitted unit for a period not to exceed 24 hours, for transportation, treatment, characterization, or packaging, shall not be deemed storage.	Y	Verified wastes stored in accordance with permit application and in approved quantities.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.1: GENERAL CONDITIONS	(3) The Permittees shall ensure that the figures in Attachment N (Figures) and in the closure plans in Attachment G accurately reflect the location of all buildings and structures, regardless of whether they manage hazardous waste, at hazardous waste management units. The Permittees may change the location of a building or structure at a hazardous waste management unit only in accordance with a Class 1 permit modification requirements at 40 CFR § 270.42(a). Any change to the location of a building or structure within which hazardous waste is managed shall be a Class 1 modification with prior approval of the Department (see 40 CFR § 270.42(a)(2)). Any change to the location of a building or structure within which hazardous waste has not been managed shall be a Class 1 modification without prior approval (see 40 CFR § 270.42(a)(1)).	Y	Reviewed figures while walking sites.
3.2: CONDITION OF CONTAINERS	The Permittees shall ensure that all containers used to store hazardous wastes subject to this Permit are in good condition (e.g., no severe rusting or apparent structural defects) in accordance with 40 CFR § 264.171, which is incorporated herein by reference. If a container is not in good condition or begins to leak, the Permittees shall transfer the waste from such a container into a container that is in good condition within 24 hours of discovery of the problem, and in accordance with 40 CFR § 264.171.	Y	All containers in permitted units verified as being in good condition.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.3: ACCEPTABLE STORAGE CONTAINERS	The Permittees shall only use containers that comply with 40 CFR Part 264 Subpart I (Use and Management of Containers) for storage of hazardous waste at permitted units. Prior to shipment of hazardous waste, containers must comply with Department of Transportation (DOT) shipping container regulations (see 49 CFR § 173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR § 178 - Specifications for Packaging).	Y	All containers used to store wastes were compatible with 40 CFR Part 264 Subpart I. Containers staged for shipment complied with DOT requirements.
3.3: ACCEPTABLE STORAGE CONTAINERS	Solid, oversize items (e.g., glovebox, glovebox parts, vacuum pumps, tanks, duct work, piping, HEPA filters) contaminated with hazardous wastes that cannot be containerized in the waste containers referenced in the previous paragraph shall be subject to this Permit Part. These items shall be wrapped in plastic with a minimum of two layers of plastic to prevent dispersion of contaminating material.	NA	No waste oversize items stored at facility.
3.4: COMPATIBILITY OF WASTE WITH CONTAINERS	The Permittees shall use containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired (see 40 CFR § 264.172).	Y	All waste containers verified as compatible with material being stored.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5: MANAGEMENT OF CONTAINERS	(1) The Permittees shall ensure that all containers are kept closed during storage except when waste is added to or removed from the container or when a container's contents need to be repackaged (see 40 CFR § 264.173(a)). The Permittees shall not open, handle, or store a container holding hazardous waste in a manner that may rupture the container or cause the container to leak (see 40 CFR § 264.173(b)).	NA	Containers stored at site are always kept closed.
3.5: MANAGEMENT OF CONTAINERS	(2) The Permittees shall establish and maintain lines of demarcation which identify the boundaries of all permitted CSUs. The line may be identified by paint, tape, or other permanent, visible marking on the floor or base material (see 40 CFR § 270.32(b)(2)). Permanent fences marking the unit boundary, or rooms or buildings whose walls constitute the boundary of the permitted units, satisfy this requirement.	Y	Painted boundaries were reviewed while onsite. These boundaries are part of the weekly inspections.
3.5: MANAGEMENT OF CONTAINERS	(3) The Permittees shall ensure that drums stored in movable buildings (e.g., modular buildings, transportainers) with non-grated floors are stored on wheeled drum dollies, steel pallets, or are otherwise elevated.	NA	No movable buildings used to store wastes.
3.5: MANAGEMENT OF CONTAINERS	(4) The Permittees shall ensure that when waste containers are moved during storage, the location of each hazardous waste and the quantity at each location is documented in accordance with Permit Section 2.12 (see 40 CFR § 264.73(b)(2)).	Y	Reviewers were provided with facility operating record, which they verified during walk through on a representative sample of drums.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(1) The Permittees shall maintain adequate aisle space at all times to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment within the permitted units. Additionally, emergency egress aisles with a minimum aisle space of two feet must be maintained at all personnel doors (see 40 CFR § 264.35).	Y	Aisle spaces were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(2) The Permittees are authorized to stack containers greater than or equal to 30 gallons of hazardous waste to no more than three containers high. Stacked containers of this volume shall be palletized, and each layer shall be bound together (see 40 CFR § 270.32(b)(2)).	Y	Stacked containers were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(3) The Permittees shall ensure that hazardous waste containers stored outdoors are not stored within five feet of the perimeter (i.e., permitted unit boundary) fence, within five feet of any permanent structure, or within five feet of a paved or unpaved roadway.	NA	No outdoor storage at permitted areas at TA-3
3.5.1: Storage Configuration and Minimum Aisle Space	(4) The Permittees shall store hazardous waste gas cylinders in cylinder racks, baskets, or on specially constructed pallets that provide support and restraint.	NA	No permitted storage of gas cylinders.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(5) The Permittees shall ensure that hazardous waste containers that are stored outdoors and are not being actively managed are protected from contact with precipitation using weather protective equipment (e.g., containment shell, secured tarp) or are protected by the design of the equipment (e.g., transportainer, Transuranic Waste Package Transporter II container) (see 40 CFR § 270.32(b)(2)).	NA	No outdoor storage at permitted areas at TA-3
3.6: WASTE CONTAINER LABELING	(1) The Permittees shall ensure that all containers storing hazardous waste have a “Hazardous Waste” label (see 40 CFR § 262.34(a)(3)) that lists the generator’s name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)). All containers holding mixed waste shall be labeled “Radioactive.” Records for all containers will be maintained in accordance with Permit Section 2.12.	Y	Verified a representative sample of containers at permitted storage areas had proper labels.
3.6: WASTE CONTAINER LABELING	(2) The Permittees shall ensure that containers holding free liquids have a “free liquids” label. The free liquids reference may be included on a label identifying other waste characteristics (see 40 CFR § 270.32(b)(2)).	Y	Verified a representative sample of containers at permitted storage areas had proper labels.
3.7: CONTAINMENT SYSTEMS	The Permittees shall store containers of hazardous waste in a manner that prevents contact with any accumulated liquids (see 40 CFR § 264.175(b)(2)).	Y	Verified that no containers are stored on the ground.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(1) The Permittees shall maintain secondary containment systems in all permitted units used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference. The Permittees shall maintain controls to prevent run-on into the permitted unit. These controls shall consist of ground features such as berms and sloping.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.7.1: Containers with Free Liquids</p>	<p>(2) The Permittees shall remove spilled or leaked waste and accumulated precipitation from sumps or secondary containment systems. If the sumps or secondary containment system are the sole means of secondary containment the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in liquid form within 24 hours of detection or immediately if necessary to prevent overflow of the secondary containment system. Otherwise, the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in any form in as timely a manner as is necessary to prevent overflow of the containment system and shall, while the system's capacity is diminished, measure the system daily to demonstrate that the system retains sufficient capacity to contain 10% of the volume of containers or the volume of the largest container holding free liquids, whichever is greater. (see 40 CFR §§ 264.175(b)(4) and (5)). The Permittees shall document this measurement in the Facility Operating Record. Requests for extension of time for any deadline under this subparagraph may be made by e-mail.</p>	<p>Y</p>	<p>No spilled or liquid wastes identified in sumps or secondary containment systems.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(3) The Permittees shall maintain the base of secondary containment systems to ensure they are impervious in order to contain leaks, spills, and/or accumulated precipitation until the collected liquids are detected and removed. The Permittees shall ensure that the secondary containment system have adequate structural strength to withstand the stresses of daily operations (see 40 CFR § 264.175(b)(1)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(4) If a coating or sealant is used as a component of a secondary containment system, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating the Permittees' installation and maintenance procedures were in accordance with the manufacturer's specifications. If the base of the containment unit has expansion or construction joints, the Permittees shall install and maintain chemically resistant water stops, which are embedded in the concrete, or equivalent external systems (e.g. sealant systems) (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(5) If a flexible liner is used as a secondary containment system after July 1, 2014, the Permittees shall maintain documentation in the Facility Operating Record that the flexible liner was installed and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating that the Permittees' installation and maintenance procedures have been conducted in accordance with the manufacturer's specifications (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(6) Unless waste is removed or another form of secondary containment is provided, the Permittees shall repair any damage to a secondary containment system within 15 days of detecting the problem. The Permittees shall perform any concrete or asphalt repair using an appropriate repair method (e.g., ACI standards or manufacturer's recommendations), which will prevent future damage at the location (see 40 CFR §§ 264.15(c), 270.32(b)(2)). The Permittees shall apply coatings or sealants, if applicable, to the repaired area before waste storage activities resume. The Permittees must record any damage or repair to containment systems in the inspection logs required by Permit Section 2.6.3.	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(7) The Permittees shall ensure that the number of 55-gallon drums stored on a secondary containment pallet does not exceed the design capacity of the pallet.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(8) The Permittees shall ensure that all metal secondary containment pallets have a chemically-resistant coating equivalent to urethane. The Permittees shall maintain the chemical-resistant coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	All secondary containment systems were verified as in compliance.
3.7.2: Containers without Free Liquids	(1) For container storage areas that will store only wastes without free liquids (see Attachment J (Hazardous Wastes Management Units), Table J-1 (Active Portion of the Facility)), the Permittees shall ensure that:	NA	TA-3 is designated as being able to store liquid wastes.
3.7.2: Containers without Free Liquids	a. the storage areas are sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation or other liquids (see 40 CFR § 264.175(c)(1)); or	NA	TA-3 is designated as being able to store liquid wastes.
3.7.2: Containers without Free Liquids	b. the containers are elevated or otherwise protected from contact with accumulated liquids (see 40 CFR § 264.175(c)(2)).	NA	TA-3 is designated as being able to store liquid wastes.
3.7.2: Containers without Free Liquids	(2) The Permittees shall comply with the secondary containment requirements for hazardous wastes that do not contain free liquids and have the following waste codes: F020, F021, F022, F023, F026 and F027 (see 40 CFR § 264.175(d)(1)).	NA	TA-3 does not store wastes with these codes.
3.8: INSPECTION SCHEDULES AND PROCEDURES	(1) The Permittees shall inspect the permitted CSUs at least weekly for evidence of leaks or deterioration of the containment system by corrosion, cracking, differential settlement or other factors (see 40 CFR § 264.174).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.8: INSPECTION SCHEDULES AND PROCEDURES	(2) The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (see 40 CFR §§ 264.174 and 270.32(b)(2)).	Y	During review, all containers and labels were stored in a manner that allowed for inspection.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(1) The Permittees shall control air pollutant emissions from each hazardous waste container at a permitted unit in accordance with the applicable regulations in 40 CFR Part 264 Subpart CC. The Permittees shall also manage hazardous wastes subject to emission controls in accordance with Attachment E (Inspection Plan).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(2) The Permittees shall not be required to control air pollutant emissions from a container in accordance with the exemptions in 40 CFR §§ 264.1080(b)(1) through (8).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(3) If the Permittees claim an exemption from air pollution emission controls due to a container holding radioactive mixed waste, the Permittees shall clearly label the container in accordance with Permit Section 3.6.	Y	All mixed waste containers are fitted with carbon filters and properly labeled.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(4) A suitable method to control container air pollution emissions is the utilization of the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b). This emission control method is met if the containers adhere to the following requirements:	Y	Containers were evaluated to determine if emission systems were required.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.9: VOLATILE ORGANIC AIR EMISSIONS	a. the containers have a capacity of greater than 0.1 cubic meters and less than 0.46 cubic meters (approximately 119 gallons);	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	b. the containers meet U.S. Department of Transportation (DOT) specifications under 49 CFR Part 178;	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	c. the containers are kept closed during storage; and	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	d. the containers are inspected weekly to ensure lids and openings are securely closed and there is no possibility of air emissions (see 40 CFR §§ 264.1086(c)(3) and (4)).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(5) All containers that are not exempted under 40 CFR 264, Subpart CC, shall be subject to Container Level 1 requirements, except that the Permittees shall identify containers subject to Container Level 2 controls on a list in the Facility Operating Record.	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(6) Containers may be opened for the purpose of adding or removing waste or as otherwise allowed at 40 CFR § 264.1086(c)(3), which is incorporated herein by reference.	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(7) The Permittees shall characterize hazardous wastes subject to emission controls in accordance with Permit Section 2.4 (Waste Analysis) and Attachment C (Waste Analysis Plan).	Y	Containers were evaluated to determine if emission systems were required.

C.1.1.3.3 TA-50 Permitted Storage and Treatment Checklist

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 3			
3.11.1: General Operating Conditions	(1) The Permittees shall ensure that storage of hazardous or mixed waste in containers at TA-50 occurs only in two areas: 1) an indoor storage area located in Building 69 (TA-50-69), Rooms 102 and 103; and 2) an outdoor storage area (TA-50-69, Outdoor) located south/southeast of Building 69, comprised of an asphalt pad and modular transportainer units, as identified in Attachment A (Technical Area Unit Descriptions) and Attachment J (Hazardous Waste Management Units).	Y	There was no drum storage outside of permitted areas at TA-50
3.11.1: General Operating Conditions	(2) The Permittees shall ensure that ignitable wastes will not be stored inside the glovebox located within the indoor permitted unit.	NA	No ignitable wastes onsite at time of review.
3.11.1: General Operating Conditions	(3) The Permittees shall at all times maintain a fire access lane between the TA-50-69 Outdoor and Indoor permitted units (see 40 CFR § 270.32(b)(2)).	Y	Verified that fire lane was delineated in paint and clear of any obstructions.
3.11.2: Preventing Hazards in Loading/Unloading	The Permittees shall not load or unload waste at TA-50 during severe weather conditions	Y	Verified waste handling procedures included restrictions during inclement weather.
3.11.3: Preventing Run-on	The Permittees shall prevent surface water run-on from contacting stored waste containers at the TA-50 permitted units.	Y	Waste containers were elevated to eliminate surface run-on.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.11.3: Preventing Run-on	The Permittees shall annually inspect and when necessary maintain the drainage swales located south of the permitted unit between the permitted unit and Material Disposal Area (MDA) C, and located on the west side of the permitted unit between Pecos Drive and the TA-50 fence line, to ensure that potential run-on is directed away from the permitted units (see 40 CFR § 264.175(c)(1)).	Y	Drainage swales are inspected weekly, they are also inspected as part of the Multi-Sector General Permit.
Permit Section 4			
4.6: TA-50 RADIOACTIVE LIQUID WASTE TREATMENT FACILITY	The Permittees shall discharge all treated wastewater from the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) through the outfall permitted under Section 402 of the federal Clean Water Act, or as otherwise authorized by the terms of an applicable Clean Water Act permit that regulates the treatment and use of wastewater. If the Permittees intentionally discharge through a location other than the permitted outfall or as otherwise authorized, they will fail to comply with this requirement, and as a consequence the wastewater treatment unit exemption under 40 CFR § 264.1(g)(6) will no longer apply to the RLWTF. The Permittees shall not accept listed hazardous wastes as specified at 40 CFR Part 261 Subpart D at the RLWTF.	Y	Verified through NPDES review of treatment unit.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 7			
7.1: GENERAL CONDITIONS	(1) The Permittees shall treat waste by stabilization in containers at TA-50-69 Indoor Permitted Unit in accordance with this Permit Part and the requirements of 40 CFR Part 264, Subpart I, which is incorporated herein by reference.	Y	Reviewed entire treatment process as it was happening with the process engineer.
7.1: GENERAL CONDITIONS	(2) The Permittees shall, in accordance with this Permit Part, maintain and operate the equipment utilized for stabilization treatment as described at Attachment A (Technical Area Unit Descriptions).	Y	Reviewed entire treatment process as it was happening with the process engineer.
7.1: GENERAL CONDITIONS	(3) The Permittees shall treat by stabilization in containers only in the permitted unit identified with process code T04 in attachment J, Table J-1. The Permittees shall not store or treat waste in quantities that exceed the operating capacities identified in Table J-1.	Y	Reviewed entire treatment process as it was happening with the process engineer.
7.1: GENERAL CONDITIONS	(4) The Permittees shall treat by stabilization only those wastes with EPA Hazardous Waste Numbers listed in association with the applicable permitted storage unit and stabilization process in Attachment B (Part A Application).	Y	Reviewed all wastes codes for containers that were staged for treatment.
7.1: GENERAL CONDITIONS	(5) The Permittees shall ensure that wastes or treatment reagents are not used in the stabilization process if they could cause the equipment used for treatment to rupture, leak, corrode, or otherwise fail.	Y	Reviewed entire treatment process as it was happening with the process engineer.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
7.2: GLOVEBOX INTEGRITY AND CONTAINMENT	(1) The Permittees shall maintain in the Facility Operating Record the written integrity assessment of the glovebox system used to treat nitrate salt-bearing waste.	Y	Glovebox integrity checks were discussed with process engineer. Facility was about to undergo a 10-day maintenance period once current batch of waste had received treatment.
7.2: GLOVEBOX INTEGRITY AND CONTAINMENT	(2) The Permittees shall use appropriate controls and practices to prevent spill and releases from the glovebox containment system.	Y	Glovebox integrity checks were discussed with process engineer. Facility was about to undergo a 10-day maintenance period once current batch of waste had received treatment.
7.3: STABILIZATION REQUIREMENTS	(1) The Permittees shall ensure that nitrate salt-bearing waste is treated within an enclosed glovebox or other containment equipment.	Y	All treatment occurs in glovebox.
7.3: STABILIZATION REQUIREMENTS	(2) The stabilization treatment process will consist of blending water and zeolite with waste solids or stabilizing liquid waste by blending with zeolite.	Y	All treatment occurs in glovebox.
7.4: RELEASES WITHIN THE PERMITTED UNIT	(1) Any release, or the potential for a release, from or at the TA-50-69 Indoor Permitted Unit that the Permittees does not deem a threat to human health or the environment must be reported to the Department in accordance with Permit Section 1.9.13.	NA	No releases from TA-50-69.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
7.4: RELEASES WITHIN THE PERMITTED UNIT	(2) The Permittees shall ensure that any release of waste from the TA-50-69 Indoor Permitted Unit to the environment (e.g., soil, surface water, groundwater, atmosphere) is reported to the Department by e-mail or facsimile within 24 hours of its detection. Within 5 days of detection of a release to the environment, the Permittees shall submit a written report to the Department containing the information required by Permit Section 1.9.12.2.	NA	No releases from TA-50-69.
7.5: INCOMPATIBLE WASTES	(1) The Permittees shall ensure that potentially incompatible waste is either treated or segregated to eliminate the possibility of combining materials that are incompatible.	NA	No incompatible waste.
7.6: CONFIRMATION ANALYSIS	(1) Characterization for treated waste will be conducted in accordance Permit Attachment C (Waste Analysis Plan, Section C.3.2.4.2 Characterization Procedures for Waste Treated by Stabilization).	Y	Verified via interview during on-site visit
7.6: CONFIRMATION ANALYSIS	(2) Pre-treatment and treatment verification samples will be collected in accordance with the subsection of Permit Attachment C.3.2.4 Characterization Procedures Prior to and After Treatment of Mixed Transuranic (TRU) Wastes.	Y	Verified via interview during on-site visit

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
General Permit Conditions: Section 2			
2.2: AUTHORIZED WASTES	The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous wastes the Permittees proposed to manage at the units in the Permit Application, which are those wastes bearing the EPA Hazardous Waste Numbers (i.e., waste codes) listed in Attachment B (Part A Application), unless otherwise prohibited by this Permit.	Y	Verified waste codes of representative sample of wastes stored at permitted areas.
2.2.3: PCB - Contaminated Waste	The Permittees shall not store liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 parts per million (ppm) unless such storage is in compliance with 40 CFR § 268.50(f).	NA	No PCB wastes stored at TA-50.
2.3.1: Hazardous Waste Storage	The Permittees shall not store hazardous wastes beyond one year from the date that the wastes were first placed into storage at a permitted unit unless the Permittees are able to demonstrate to the Department that one of the following conditions exists:	Y	Wastes stored over a year are identified on the STP.
2.3.1: Hazardous Waste Storage	(1) storage is solely for the purpose of accumulating such quantities of hazardous waste restricted from land disposal as necessary to facilitate proper recovery, treatment, or disposal (see 40 CFR § 268.50(a)(2));	NA	See parent note for PC 2.3.1 above.
2.3.1: Hazardous Waste Storage	(2) the waste meets all of the applicable treatment standards under the Land Disposal Restrictions in 40 CFR Part 268, Subpart D, which are incorporated herein by reference; or	NA	See parent note for PC 2.3.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.3.1: Hazardous Waste Storage	(3) that a mixed waste is documented on the Site Treatment Plan (STP) database under the Federal Facility Compliance Order (FFCO) and such storage is otherwise in compliance with all requirements of the STP and FFCO. (see 40 CFR §§ 268.50(b) and (e))	NA	See parent note for PC 2.3.1 above.
2.3.2: Prohibition on Dilution	The Permittees shall not dilute a waste that is prohibited from land disposal or the residue from treatment of a prohibited waste as a substitute for treatment as specified at 40 CFR § 268.3, which is incorporated herein by reference. Dilution to avoid an applicable treatment standard includes, but is not limited to, the addition of solid waste to reduce a hazardous constituent's concentration or ineffective treatment that does not destroy, remove, or permanently immobilize hazardous constituents. Aggregating or mixing wastes as part of a legitimate treatment process is not prohibited dilution for purposes of this Permit.	Y	No dilution of waste observed in reviewing characterization documents of non-hazardous wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.3.3: Documentation of Exclusion or Exemption</p>	<p>The Permittees shall place a one-time notice in the Facility Operating Record for any land disposal prohibited wastes that the Permittees determine are excluded from the definition of hazardous or solid waste or determine are exempted from Subtitle C regulation under 40 CFR §§ 261.2 through 261.6 subsequent to the point of generation (see 40 CFR § 268.7(a)(7)). Exemptions required to be documented include, but are not limited to, hazardous waste managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR §§ 264.1(g)(6) and 260.10, which are incorporated herein by reference. The Facility's on-site files shall include in this documentation a description of the process that generated the waste, the justification for its exemption or exclusion, and a description of the final disposition of the waste.</p>	Y	TA-50 has a NPDES permitted treatment facility and associated outfall.
<p>2.4.1: General Waste Characterization Requirements</p>	<p>The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous waste streams that have been fully characterized in accordance with the requirements of 40 CFR § 264.13, which is incorporated herein by reference, the conditions in this Permit Part, and Attachment C (Waste Analysis Plan).</p>	Y	Characterization of wastes checked for a representative sample. See checklist for sites visited to review specific waste streams that characterization was reviewed.
<p>2.4.1: General Waste Characterization Requirements</p>	<p>At a minimum, the Permittees shall obtain and document all of the information that must be known to treat, store, or otherwise manage a hazardous waste stream in accordance with 40 CFR Parts 264 and 268 including, but not limited to:</p>	Y	Wastes delivered to TA-50 for treatment must meet all WIPP Waste Acceptance Criteria, except for free liquids and corrosivity. Treatment process removes these characteristics.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(1) all applicable EPA hazardous waste numbers;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(2) waste characterization necessary to determine whether the waste stream is prohibited from land disposal;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(3) waste characterization necessary to prevent the mixing or placing of incompatible wastes in the same container (see 40 CFR §§ 264.17 and 264.177) or tank system (see 40 CFR § 264.199), and to prevent the impairment of containers (see 40 CFR § 264.172), tanks, and secondary containment systems for tanks by incompatible wastes (see 40 CFR § 264.193(c)(1));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(4) waste characterization necessary to prevent accidental or spontaneous ignition or reaction of ignitable or reactive wastes, including, but not limited to, ignition or reaction in containers (see 40 CFR § 264.17) and tank systems (see 40 CFR § 264.198);	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(5) whether the waste is a mixed waste (see 40 CFR § 270.32(b)(2));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(6) whether the waste contains free liquids;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(7) the waste stream name;	Y	See parent note for PC 2.4.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(8) the unique waste stream identifier;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(9) the waste stream generation location (e.g. building and room number); and	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(10) a detailed description of the waste stream generation process that includes all relevant material inputs or other information that identifies the chemical content and physical form of the waste.	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	The Permittees shall characterize waste streams by using current Department-approved sampling and analysis methods, acceptable knowledge, or a combination of the two. When acceptable knowledge is insufficient to fully characterize a waste stream, the Permittees shall utilize sampling and analysis to complete that characterization.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2018g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	The Permittees shall maintain all waste characterization information in the Facility Operating Record. For records that contain waste characterization information concerning any hazardous or mixed wastes managed under this Permit, which are required to be archived elsewhere at the Facility (e.g., laboratory record books), the Permittees shall maintain a traceable identifier to this documentation to facilitate access by the Permittees and the Department (see 40 CFR § 270.32(b)(2)). The Permittees shall maintain waste characterization documentation in accordance with the record retention requirements in Permit Section 2.12.2.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall perform all sampling and analytical procedures used for waste characterization in accordance with Department-approved laboratory analytical methods, including the most recent version of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (U.S. EPA Publication SW-846) and Tables C-16, C-17, and C-18 in Attachment C (Waste Analysis Plan). The Permittees shall ensure that samples collected and analyzed for waste characterization are representative of the chemical composition of the entire volume of the waste stream.	NA	Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall ensure that procedures used to collect a representative sample of a waste stream preserve its original physical form and composition and ensure prevention of contamination or changes in concentration of the constituents to be analyzed.	NA	Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall implement a quality assurance and quality control (QA/QC) program to ensure that sample collection and analytical procedures used to support waste characterization required under this Permit are technically accurate and statistically valid. This QA/QC program must comply with the requirements in SW-846. The Permittees shall identify and perform the appropriate number of control samples associated with each sample collected (e.g., trip and field blanks, field duplicates, field spikes). The Permittees shall maintain a record in the Facility Operating Record of all QA/QC procedures utilized in the sampling and analysis of a waste stream.	NA	Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.
2.4.2: Sampling and Analysis for Hazardous Wastes	When performing laboratory analysis, the Permittees, or a laboratory under contract to the Permittees, shall analyze the appropriate number of method blanks, laboratory duplicates, and laboratory control samples to assess the quality of the data resulting from laboratory analytical programs.	NA	Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	If the Permittees use an independent contract laboratory to conduct waste analyses, the Permittees shall require the analytical laboratory to conduct such analysis in accordance with the waste analysis conditions set forth in Permit Part 2.4 and Attachment C (Waste Analysis Plan), Section C.3 (Characterization Procedures). Copies of contracts or other documentation identifying the independent laboratory and showing that the analytical laboratory is required to operate in accordance with the waste analysis conditions shall be kept in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	NA	Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees may propose to the Department an analytical method that deviates from Department-approved methods. The Permittees must submit a written request to the Department for review and approval 90 days prior to using the proposed sampling or analytical procedure. This request must include the following information:	NA	There are no alternative methods performed at LANL.
2.4.2: Sampling and Analysis for Hazardous Wastes	(1) a statement of the need and justification for the proposed action;	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(2) a full description of the alternative method (i.e., a standard operating procedure) including all procedural steps and equipment used in the method;	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(3) a description of the types of wastes, or waste matrices, for which the proposed method may be used;	NA	See parent note for PC 2.4.2 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	(4) comparative analytical data obtained from using the proposed method with those obtained from using the Department-approved relevant or corresponding methods in Attachment C (Waste Analysis Plan);	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(5) a demonstration that the proposed analytical procedure is equal to, or superior to, the corresponding methods in Attachment C (Waste Analysis Plan) in terms of its sensitivity, accuracy, and precision (i.e., reproducibility);	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(6) an assessment of any factors which may interfere with or limit the use of the proposed method; and	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(7) a description of the QA/QC procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method.	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall obtain written approval from the Department of the alternative method before substituting it for an approved method under this Permit, except that a change requested to conform with agency guidance or regulations shall be a Class 1 permit modification (see 40 CFR § 270.42 Appendix 1).	NA	See parent note for PC 2.4.2 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.3: Acceptable Knowledge</p>	<p>The Permittees may use acceptable knowledge to characterize waste in lieu of, or to supplement, sampling and analysis. The Permittees shall document all uses of acceptable knowledge, and include in the acceptable knowledge documentation all of the background information assembled and used in the characterization process relevant to the decision to use acceptable knowledge (see 40 CFR § 270.32(b)(2)). The record must document the resolution of any data discrepancies between different sources of acceptable knowledge. Acceptable knowledge documentation must be maintained in an auditable form in the Facility Operating Record. The Permittees shall assign a traceable identifier to this documentation to facilitate both access to this information and its verification by the Permittees and the Department.</p>	<p>Y</p>	<p>Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2018g).</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.5: Treatment-Derived Waste	The Permittees shall characterize treatment-derived wastes generated both on-site and off-site by determining whether the treatment residues meet the applicable treatment standard in accordance with 40 CFR § 268.7(b), which is incorporated herein by reference, unless the Permittees have documented that the purpose of the treatment process is not to attain the applicable treatment standard. The Permittees shall ensure adherence to notification and recordkeeping requirements specified at 40 CFR § 268.7(b)(3)(ii). If the waste remains a hazardous waste, the Permittees shall further characterize it in compliance with the applicable requirements of Permit Section 2.4.1.	Y	Treatment derived waste is handled as low-level mixed waste, as verified while watching treatment process.
2.4.7: Waste Characterization Review	The Permittees shall ensure that the initial characterization of any hazardous waste stream managed under this Permit is reviewed or repeated to verify that the characterization is accurate and up to date (see 40 CFR § 264.13(b)(4)). The Permittees shall document this review in the Facility Operating Record. The Permittees shall perform the following:	Y	WCATs system requires annual verification of waste stream profiles, which includes characterization records (LANL 2018g).
2.4.7: Waste Characterization Review	(1) Annually reevaluate all hazardous waste streams generated to verify the accuracy of initial and subsequent characterization results. The annual reevaluation shall be required no later than one year from the date of initial characterization of the hazardous waste stream or one year from the last annual reevaluation;	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.7: Waste Characterization Review	(2) Recharacterize hazardous wastes whenever there is a change in the waste-generating processes which includes a change in the status of the waste for purposes of Land Disposal Restrictions or when analytical results indicate a change in the waste stream;	Y	See parent note for PC 2.4.7 above.
2.4.7: Waste Characterization Review	(3) Annually verify the waste characterization of one percent of hazardous waste streams characterized solely by acceptable knowledge (see 40 CFR §§ 264.13(b)(4) and 270.32(b)(2)). Such waste characterization verification shall be performed by quantitative chemical analyses appropriate for the waste as specified in Attachment C (Waste Analysis Plan). The one percent of wastes whose characterization is to be verified shall be determined in relation to the total number of unique waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year. The waste streams whose characterization is to be verified shall be chosen without further bias and the selection procedure shall be documented in the Facility Operating Record. Wastes not required to undergo this annual verification and not to be counted toward the total number of wastes managed in the previous year include mixed transuranic wastes, hazardous debris, and hazardous wastes that are hazardous only because they are listed at 40 CFR Part 261, Subpart D; and	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.7: Waste Characterization Review</p>	<p>(4) Recharacterize a hazardous waste stream whenever the Permittees are notified by a receiving off-site facility that the characterization of a hazardous waste they obtained from the Permittees' Facility does not match a pre-approved waste analysis certification or accompanying waste manifest or shipping paper. The Permittees shall notify the Department in writing within three days of their receipt of the notice of the discrepancy from a receiving facility.</p>	<p>Y</p>	<p>No recent RCRA waste exception reports from permitted units at TA-50</p>
<p>2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements</p>	<p>The Permittees shall characterize hazardous wastes managed in containers and tanks to determine the average volatile organic compound (VOC) concentration relative to 500 parts per million by weight (ppmw) at the point of waste origination in compliance with 40 CFR Part 264, Subpart CC. The Permittees shall determine the average VOC concentration either by utilizing acceptable knowledge or by using the procedures specified in 40 CFR § 264.1083(a), which is incorporated herein by reference. The Permittees shall review and update this determination at least once every 12 months following the date of the initial determination in compliance with 40 CFR § 264.1082(c)(1), which is incorporated herein by reference.</p>	<p>NA</p>	<p>No VOC wastes handled at TA-50</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to control air pollutant emissions from a container or tank and thus shall not be required to characterize the waste for its average VOC concentration in the following circumstances:	NA	No VOC wastes handled at TA-50
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(1) if the container or tank stores mixed waste (see 40 CFR § 264.1080(b)(6));	NA	No VOC wastes handled at TA-50
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(2) if the container storing the wastes has a total capacity of less than 0.1 cubic meter (approximately 26 gallons)(see 40 CFR § 264.1080(b)(2)); or	NA	No VOC wastes handled at TA-50
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(3) if a tank has stopped receiving hazardous waste and is undergoing closure (see 40 CFR § 264.1080(b)(3)).	NA	No VOC wastes handled at TA-50
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to determine the average VOC concentration of wastes if control of air pollution emissions from containers is achieved utilizing the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b), which is incorporated herein by reference.	NA	No VOC wastes handled at TA-50

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall ensure that before any hazardous waste is managed at a permitted unit a determination has been made as to whether the waste has to be treated before it can be land disposed (see 40 CFR § 268.7(a)). The Permittees must characterize waste designated to be disposed of at the Waste Isolation Pilot Plant (WIPP) to determine whether it is subject to the land disposal prohibitions, except that such waste is not required to be characterized to determine all applicable underlying hazardous constituents listed in 40 CFR § 268.48.</p>	<p>Y</p>	<p>All wastes processed here are destined for disposal at either WIPP for TRU Waste or a Low-Level Mixed Waste Disposal Facility. All wastes are treated to meet the WIPP Waste Acceptance Criteria.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When using laboratory analysis as part of a hazardous waste characterization pursuant to Attachment C (Waste Analysis Plan), Section C.3.1.2, the Permittees shall require the laboratory to report concentrations of all hazardous constituents listed at 40 CFR § 268.48, Table UTS that the analytical test method used is capable of measuring, as specified at the most recent version of the U.S. EPA's Test Methods for Evaluating Solid Wastes (SW-846). When performing this laboratory analysis the Permittees will not be required to perform sample preparation or determinative procedures other than those performed routinely for the target analytes.</p>	<p>NA</p>	<p>Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When performing or obtaining laboratory analysis to demonstrate that a waste meets its applicable treatment standard concentrations specified in 40 CFR § 268.40, Treatment Standards for Hazardous Wastes, in compliance with 40 CFR §§ 268.7(a) and (b), which are incorporated herein by reference, the Permittees shall ensure that analytical method practical quantification limits are not higher than the applicable treatment standard (see 40 CFR § 270.32(b)).</p>	<p>NA</p>	<p>Wastes characterization at TA-50 permitted units is only done using acceptable knowledge.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall characterize treatment-derived wastes by determining whether the waste is a hazardous or mixed waste in compliance with the requirements in Permit Section 2.4.1 and in compliance with the notification and recordkeeping requirements specified in 40 CFR § 268.7(b)(3)(ii), Treatment Facility Paperwork Requirements Table, which is incorporated herein by reference.</p>	<p>Y</p>	<p>All treatment-derived waste utilized in glovebox treatment is characterized as Low-Level Waste, as verified while watching treatment procedure during discussion with process engineer.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions	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.	Y	All treatment-derived waste utilized in glovebox treatment is characterized as Low-Level Waste, as verified while watching treatment procedure during discussion with process engineer.
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:	Y	All entries to TA-50 are gated and monitored.
2.5: SECURITY	(1) 24-hour surveillance system continuously monitoring and controlling entry into the permitted units at the Facility; or	Y	See parent note for PC 2.5 above.
2.5: SECURITY	(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).	Y	See parent note for PC 2.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	Signage verified during on-site assessment.
2.5.1: Warning Signs	DANGER – UNAUTHORIZED PERSONNEL KEEP OUT (PELIGRO – SE PROHIBE LA ENTRADA A PERSONAS NO AUTORIZADAS)	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	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).	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	The Permittees shall post signs requested by Santa Clara Pueblo (Kha-'Po). The Permittees shall include on the signs the following warning:	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	Wi-i ts'uni pi' – (DO NOT ENTER)	NA	See parent note for PC 2.5.1 above.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall inspect all the permitted units for malfunctions, deterioration, operator errors, and discharges which may cause or may lead to:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	(1) a release of hazardous constituents to the environment; or	NA	See parent note for PC 2.6. above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6: GENERAL INSPECTION REQUIREMENTS	(2) a threat to human health. (see 40 CFR § 264.15(a))	NA	See parent note for PC 2.6. above.
2.6: GENERAL INSPECTION REQUIREMENTS	Inspections shall be conducted of all waste management structures, base materials, containers, monitoring equipment, safety and emergency equipment, security devices, and operating equipment that are important in preventing, detecting, and responding to environmental or human health hazards associated with hazardous wastes (see 40 CFR § 264.15(b)(1)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall implement the inspection program for the permitted units in compliance with the operating schedule, recordkeeping, and response action commitments in Attachment E (Inspection Plan).	Y	See parent note for PC 2.6 above.
2.6.1: Inspection Schedule	The Permittees shall conduct inspections to identify problems in time to correct them before they harm human health or the environment (see 40 CFR § 264.15(a)). The Permittees shall inspect the permitted units and all associated structures and equipment, in compliance with the inspection schedules contained in Attachment E (Inspection Plan).	Y	See parent note for PC 2.6 above.
2.6.1: Inspection Schedule	The Permittees shall inspect areas subject to spills, such as loading and unloading areas, daily when in use (see 40 CFR § 264.15(b)(4)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.2: Repair of Equipment and Structures	The Permittees shall remedy any deterioration or malfunction of equipment or structures discovered during an inspection which may lead to an environmental or human health hazard. The Permittees shall mitigate such deterioration or malfunction within 24 hours of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (see 40 CFR § 264.15(c)).	Y	No active "Action Requests" for TA-50.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	The Permittees shall record the results of inspections on the Hazardous Waste Facility Inspection Record Form in Attachment E (Inspection Plan) for each inspection conducted in accordance with Permit Section 2.6 and Attachment E. At a minimum, the Permittees shall produce a handwritten record of the date and time of the inspection, an identification of the permitted unit and associated structures or equipment, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions taken (see 40 CFR § 264.15(d)). The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and errors are crossed out with a single line, initialed, and dated by the individual making the correction. The Permittees shall maintain the inspection logs and records in a paper format. The Permittees may transfer the inspection logs and records into an electronic format acceptable to the Department. The paper format shall be retained for the period of time specified in Permit Section 2.12.2.	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6.3: Inspection Logs and Records	The Permittees shall record the following observations or actions in the Facility Operating Record:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	(1) the results of any preventive maintenance activities including, but not limited to, maintenance on floors, secondary containment structures, unit drainage structures, and fire protection equipment at a permitted unit;	Y	No current preventive maintenance activities requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(2) any malfunctions and deterioration of such structures or equipment;	Y	No current malfunctions or deteriorations requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(3) any errors affecting waste containment or compliance with this Permit;	Y	No current waste containment issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(4) the locations, dimensions, and repairs of all identified cracks or gaps in floors or base materials;	Y	No current flooring issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(5) any discharges of hazardous waste, hazardous constituents, or fire suppression systems at a permitted unit; and	Y	No records of release or use of fire suppression system.
2.6.3: Inspection Logs and Records	(6) any occurrences that might cause or exacerbate contamination of a permitted unit.	Y	No record of contamination of a permitted unit.
2.6.3: Inspection Logs and Records	The Permittees shall maintain inspection logs in the Facility Operating Record as specified in Permit Section 2.12.2.	Y	Inspection logs maintained onsite, as verified when reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.7: PERSONNEL TRAINING	The Permittees shall ensure that all Facility personnel who are involved in hazardous waste management activities regulated under this Permit successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is incorporated herein by reference, as well as the training requirements in Attachment F (Personnel Training Plan).	Y	Reviewed training from a representative sample of waste handlers at the site.
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, 22, 24, and 38 in Permit Attachment N (Figures). At TA-63, the Permittees shall ensure that containers holding ignitable or reactive waste are located at least 15 meters from the TWF fence line, as shown in Figure 55 in Permit attachment N (Figures) (see 40 CFR §§ 264.176 and 270.32(b)(2)).	NA	TA-50 does not store wastes characterized as Ignitable (D001) or Reactive (D003). There are no incompatible waste streams stored here.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	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:	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(5) a threat to human health or the environment.	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(1) ensure there are no sources of open flames in, on, or around the container or tank;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(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;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(3) maintain adequate clearance around fire hydrants at permitted units;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(4) use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive wastes;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(5) ensure appropriate lightning protection is provided for all storage and treatment units;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(6) perform ongoing inspection, testing, and maintenance of fire protection equipment to determine appropriate test criteria and preventative maintenance activities;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(7) confine smoking and open flames to designated areas that are a minimum of 50 feet from areas where ignitable or reactive wastes are handled;	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.1: Ignitable and Reactive Waste Precautions	(8) stack containers of ignitable and reactive wastes no more than 2 drums high to comply with the National Fire Protection Association's (NFPA) Flammable and Combustible Liquids Code; and	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(9) ensure that each permitted unit's fire suppression system is compatible with the hazardous waste being stored or treated at the permitted unit.	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	The Permittees shall assume that all drums with volume capacities between 55 and 110 gallons that hold mixed transuranic wastes and that are not vented, and standard waste boxes that hold mixed transuranic waste and are not vented, contain hydrogen gas and the associated wastes are subject to the conditions of this Permit Section (2.8.1).	NA	Verified all mixed transuranic (MTRU) drums are vented.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers must be separated from the other materials (or waste) or is protected from them by means of a dike, berm, wall, or other device not to include the container, in order to, in the event of leakage from containers under conditions normally incident to storage, prevent the commingling of the incompatible wastes or materials (see 40 CFR § 264.177(c)).	NA	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored within or on the same secondary containment structure.	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored so that a release or spill of these wastes might commingle in a fire suppression water holding area or tank.	NA	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that all waste and materials are segregated and stored in accordance with the Department of Transportation's (DOT) compatibility groupings or classes contained in 49 CFR § 177.848 (see 40 CFR § 270.32(b)(2)).	NA	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall not store cyanides and cyanide mixtures or solutions with acids if a mixture of the materials could generate hydrogen cyanide. The Permittees shall not store Class 8 (corrosive) liquids above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) wastes except when it is known that the mixture of the wastes could not cause a fire or a dangerous evolution of heat or gas.	NA	No P-listed wastes stored at TA-50.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that hazardous wastes are not placed in an unwashed container (see 40 CFR § 264.177(b)) or tank (see 40 CFR § 264.199(b)) that previously held an incompatible waste or material.	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10: PREPAREDNESS AND PREVENTION	The Permittees shall maintain and operate each permitted unit in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituent to the air, soil, or surface water that could threaten human health or the environment (see 40 CFR § 264.31). In addition to the general preparedness and prevention requirements identified here, the Permittees shall comply with the TA-specific preparedness and prevention requirements and shall maintain the equipment identified in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan)	NA	See parent note for PC 2.8 above.
2.10.1: Required Equipment	At a minimum, the Permittees shall maintain at the Facility and at each permitted unit the internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment listed in the tables in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan) (see 40 CFR § 264.32(b)(2)). The Permittees shall ensure that any changes to the emergency equipment lists adhere to the permit modification requirements at 40 CFR §§ 270.41 through 270.43.	Y	Verified the unit had proper communication devices, alarms, fire control devices, spill kits, and decon equipment.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.1: Required Equipment	The Permittees shall maintain spill kits at each permitted container storage and tank unit as specified in Attachment D (Contingency Plan). These spill kits shall be capable of mitigating small containable spills of acidic, caustic, inflammable, and otherwise hazardous waste present at the unit. For larger spills, the Permittees shall have plugging and diking equipment, siphon pumps, and loaders readily available at the Facility.	Y	Verified that permitted units had adequate spill kits.
2.10.1: Required Equipment	The Permittees shall ensure that there is adequate water pressure and volume available to each permitted unit to provide for fire suppression (see 40 CFR § 264.32(d)).	NA	Did not evaluate design of facility.
2.10.1: Required Equipment	The Permittees shall operate and maintain the area-wide environmental monitoring network as specified in Section D.7.3 of Attachment D (Contingency Plan).	Y	Reviewed records of area-wide environmental monitoring network.
2.10.1: Required Equipment	At permitted units where equipment is necessary to mitigate the effects of a power outage, the Permittees shall maintain batteries, generators, or some other form of backup power supply capable of operating equipment including evacuation alarms, emergency communication equipment, automatic fire suppression systems, and emergency lights. (See 40 CFR §§ 270.14(b)(8)(iv) and 270.32(b)(2))	Y	Verified back-up power equipment was available.
2.10.1: Required Equipment	The Permittees shall ensure that it is possible to provide fuel to backup generators under adverse conditions.	Y	Verified back-up power equipment was available.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>The Permittees shall test the equipment listed in Section E.1.1 of Attachment E (Inspection Plan) in accordance with the schedule identified in Attachment E to ensure its functionality in the event of an emergency. The Permittees shall maintain the equipment specified in Permit Section 2.10.1 to ensure its proper operation in the event of an emergency (see 40 CFR § 264.33). This equipment shall undergo inspection in accordance with Attachment E (Inspection Plan). The Permittees shall document such inspections in the Facility Operating Record in accordance with this Permit Part.</p>	<p>Y</p>	<p>Verified inspection records included site-specific items identified in Attachment E.</p>
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>If testing or inspections identify any missing or nonfunctioning communication equipment, alarm system, fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired or provide substitute equipment. The Permittees shall ensure that employees and contractors working in the area are notified of the presence of substitute equipment and, if necessary, provide them with training in its use (see 40 CFR § 270.32(b)(2)). The Permittees shall document in the Facility Operating Record instances of such notifications and trainings. The Permittees shall ensure that malfunctioning equipment is clearly marked as out of use and that the location of the substitute equipment is clearly posted on or adjacent to the faulty equipment (see 40 CFR §§ 264.31 and 270.32(b)(2)).</p>	<p>Y</p>	<p>Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.3: Access to Communications or Alarm System	Whenever an employee is present at a permitted unit and the unit contains hazardous waste, the Permittees shall ensure that all personnel at the unit have immediate access to an internal alarm or emergency communication device either directly or through visual or voice contact with another employee (see 40 CFR § 264.34(a)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.3: Access to Communications or Alarm System	The Permittees shall ensure that any employee working alone at a permitted unit is capable of summoning external emergency assistance and shall have immediate access to a device, such as a hand-held two-way radio, a cell phone, or a landline telephone (see 40 CFR § 264.34(b)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.4: Spill Response	The Permittees shall ensure that spills of hazardous wastes, including small localized spills that can be managed without the assistance of emergency management personnel, are managed utilizing, at a minimum, the following procedures:	Y	No active spills were identified during time of review, but spill response procedures were reviewed.
2.10.4: Spill Response	(1) isolate the immediate area and deny entry to all unauthorized personnel;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(2) contain the spill (e.g., spreading sorbents, forming temporary dikes);	Y	See note for parent PC 2.10.4 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.4: Spill Response	(3) define the nature and extent of the spilled waste;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(4) package the spilled waste and contaminated materials in containers; and	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(5) decontaminate the area, all clean-up equipment, and personnel.	Y	See note for parent PC 2.10.4 above.
Permit Section 3			
3.1: GENERAL CONDITIONS	(1) The Permittees shall store and otherwise manage containers of hazardous waste in accordance with 40 CFR Part 264, Subpart I, which is incorporated herein by reference, and Attachment A (Technical Area Unit Descriptions).	Y	Verified during on-site review that containers were stored in accordance with site-specific information in Attachment A and Subpart I: Use and Management of Containers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.1: GENERAL CONDITIONS</p>	<p>(2) The Permittees shall only store hazardous waste containers at the permitted units identified as utilizing waste process code S01 and specified in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility). The Permittees are authorized to store only those wastes identified by EPA Hazardous Waste Numbers (waste codes) listed in Attachment B (Part A Application) and identified as utilizing waste process code S01. The Permittees shall not store containers of hazardous waste in excess of the maximum capacities for each permitted container storage unit (CSU) identified in Attachment J, Table J-1. However, for purposes of compliance with secondary containment requirements, the holding of a hazardous waste container within a permitted unit for a period not to exceed 24 hours, for transportation, treatment, characterization, or packaging, shall not be deemed storage.</p>	<p>Y</p>	<p>Verified wastes stored in accordance with permit application and in approved quantities.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.1: GENERAL CONDITIONS	(3) The Permittees shall ensure that the figures in Attachment N (Figures) and in the closure plans in Attachment G accurately reflect the location of all buildings and structures, regardless of whether they manage hazardous waste, at hazardous waste management units. The Permittees may change the location of a building or structure at a hazardous waste management unit only in accordance with a Class 1 permit modification requirements at 40 CFR § 270.42(a). Any change to the location of a building or structure within which hazardous waste is managed shall be a Class 1 modification with prior approval of the Department (see 40 CFR § 270.42(a)(2)). Any change to the location of a building or structure within which hazardous waste has not been managed shall be a Class 1 modification without prior approval (see 40 CFR § 270.42(a)(1)).	Y	Reviewed figures while walking sites.
3.2: CONDITION OF CONTAINERS	The Permittees shall ensure that all containers used to store hazardous wastes subject to this Permit are in good condition (e.g., no severe rusting or apparent structural defects) in accordance with 40 CFR § 264.171, which is incorporated herein by reference. If a container is not in good condition or begins to leak, the Permittees shall transfer the waste from such a container into a container that is in good condition within 24 hours of discovery of the problem, and in accordance with 40 CFR § 264.171.	Y	All containers in permitted units verified as being in good condition.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.3: ACCEPTABLE STORAGE CONTAINERS	The Permittees shall only use containers that comply with 40 CFR Part 264 Subpart I (Use and Management of Containers) for storage of hazardous waste at permitted units. Prior to shipment of hazardous waste, containers must comply with Department of Transportation (DOT) shipping container regulations (see 49 CFR § 173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR § 178 - Specifications for Packaging).	Y	All containers used to store wastes were compatible with 40 CFR Part 264 Subpart I. Containers staged for shipment complied with DOT requirements.
3.3: ACCEPTABLE STORAGE CONTAINERS	Solid, oversize items (e.g., glovebox, glovebox parts, vacuum pumps, tanks, duct work, piping, HEPA filters) contaminated with hazardous wastes that cannot be containerized in the waste containers referenced in the previous paragraph shall be subject to this Permit Part. These items shall be wrapped in plastic with a minimum of two layers of plastic to prevent dispersion of contaminating material.	NA	No waste oversize items stored at facility.
3.4: COMPATIBILITY OF WASTE WITH CONTAINERS	The Permittees shall use containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired (see 40 CFR § 264.172).	Y	All waste containers verified as compatible with material being stored.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5: MANAGEMENT OF CONTAINERS	(1) The Permittees shall ensure that all containers are kept closed during storage except when waste is added to or removed from the container or when a container's contents need to be repackaged (see 40 CFR § 264.173(a)). The Permittees shall not open, handle, or store a container holding hazardous waste in a manner that may rupture the container or cause the container to leak (see 40 CFR § 264.173(b)).	Y	Containers are only opened during treatment.
3.5: MANAGEMENT OF CONTAINERS	(2) The Permittees shall establish and maintain lines of demarcation which identify the boundaries of all permitted CSUs. The line may be identified by paint, tape, or other permanent, visible marking on the floor or base material (see 40 CFR § 270.32(b)(2)). Permanent fences marking the unit boundary, or rooms or buildings whose walls constitute the boundary of the permitted units, satisfy this requirement.	Y	Painted boundaries were reviewed while onsite. These boundaries are part of the weekly inspections.
3.5: MANAGEMENT OF CONTAINERS	(3) The Permittees shall ensure that drums stored in movable buildings (e.g., modular buildings, transportainers) with non-grated floors are stored on wheeled drum dollies, steel pallets, or are otherwise elevated.	NA	No movable buildings used to store wastes.
3.5: MANAGEMENT OF CONTAINERS	(4) The Permittees shall ensure that when waste containers are moved during storage, the location of each hazardous waste and the quantity at each location is documented in accordance with Permit Section 2.12 (see 40 CFR § 264.73(b)(2)).	Y	Reviewers were provided with facility operating record, which they verified during walk through on a representative sample of drums.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(1) The Permittees shall maintain adequate aisle space at all times to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment within the permitted units. Additionally, emergency egress aisles with a minimum aisle space of two feet must be maintained at all personnel doors (see 40 CFR § 264.35).	Y	Aisle spaces were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(2) The Permittees are authorized to stack containers greater than or equal to 30 gallons of hazardous waste to no more than three containers high. Stacked containers of this volume shall be palletized, and each layer shall be bound together (see 40 CFR § 270.32(b)(2)).	Y	Stacked containers were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(3) The Permittees shall ensure that hazardous waste containers stored outdoors are not stored within five feet of the perimeter (i.e., permitted unit boundary) fence, within five feet of any permanent structure, or within five feet of a paved or unpaved roadway.	NA	No outdoor storage at permitted areas at TA-50
3.5.1: Storage Configuration and Minimum Aisle Space	(4) The Permittees shall store hazardous waste gas cylinders in cylinder racks, baskets, or on specially constructed pallets that provide support and restraint.	NA	No permitted storage of gas cylinders.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(5) The Permittees shall ensure that hazardous waste containers that are stored outdoors and are not being actively managed are protected from contact with precipitation using weather protective equipment (e.g., containment shell, secured tarp) or are protected by the design of the equipment (e.g., transportainer, Transuranic Waste Package Transporter II container) (see 40 CFR § 270.32(b)(2)).	NA	No outdoor storage at permitted areas at TA-50
3.6: WASTE CONTAINER LABELING	(1) The Permittees shall ensure that all containers storing hazardous waste have a “Hazardous Waste” label (see 40 CFR § 262.34(a)(3)) that lists the generator’s name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)). All containers holding mixed waste shall be labeled “Radioactive.” Records for all containers will be maintained in accordance with Permit Section 2.12.	Y	Verified a representative sample of containers at permitted storage areas had proper labels.
3.6: WASTE CONTAINER LABELING	(2) The Permittees shall ensure that containers holding free liquids have a “free liquids” label. The free liquids reference may be included on a label identifying other waste characteristics (see 40 CFR § 270.32(b)(2)).	Y	Verified a representative sample of containers at permitted storage areas had proper labels.
3.7: CONTAINMENT SYSTEMS	The Permittees shall store containers of hazardous waste in a manner that prevents contact with any accumulated liquids (see 40 CFR § 264.175(b)(2)).	Y	Verified that no containers are stored on the ground.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(1) The Permittees shall maintain secondary containment systems in all permitted units used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference. The Permittees shall maintain controls to prevent run-on into the permitted unit. These controls shall consist of ground features such as berms and sloping.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.7.1: Containers with Free Liquids</p>	<p>(2) The Permittees shall remove spilled or leaked waste and accumulated precipitation from sumps or secondary containment systems. If the sumps or secondary containment system are the sole means of secondary containment the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in liquid form within 24 hours of detection or immediately if necessary to prevent overflow of the secondary containment system. Otherwise, the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in any form in as timely a manner as is necessary to prevent overflow of the containment system and shall, while the system's capacity is diminished, measure the system daily to demonstrate that the system retains sufficient capacity to contain 10% of the volume of containers or the volume of the largest container holding free liquids, whichever is greater. (see 40 CFR §§ 264.175(b)(4) and (5)). The Permittees shall document this measurement in the Facility Operating Record. Requests for extension of time for any deadline under this subparagraph may be made by e-mail.</p>	<p>Y</p>	<p>No spilled or liquid wastes identified in sumps or secondary containment systems.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(3) The Permittees shall maintain the base of secondary containment systems to ensure they are impervious in order to contain leaks, spills, and/or accumulated precipitation until the collected liquids are detected and removed. The Permittees shall ensure that the secondary containment system have adequate structural strength to withstand the stresses of daily operations (see 40 CFR § 264.175(b)(1)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(4) If a coating or sealant is used as a component of a secondary containment system, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating the Permittees' installation and maintenance procedures were in accordance with the manufacturer's specifications. If the base of the containment unit has expansion or construction joints, the Permittees shall install and maintain chemically resistant water stops, which are embedded in the concrete, or equivalent external systems (e.g. sealant systems) (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(5) If a flexible liner is used as a secondary containment system after July 1, 2014, the Permittees shall maintain documentation in the Facility Operating Record that the flexible liner was installed and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating that the Permittees' installation and maintenance procedures have been conducted in accordance with the manufacturer's specifications (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(6) Unless waste is removed or another form of secondary containment is provided, the Permittees shall repair any damage to a secondary containment system within 15 days of detecting the problem. The Permittees shall perform any concrete or asphalt repair using an appropriate repair method (e.g., ACI standards or manufacturer's recommendations), which will prevent future damage at the location (see 40 CFR §§ 264.15(c), 270.32(b)(2)). The Permittees shall apply coatings or sealants, if applicable, to the repaired area before waste storage activities resume. The Permittees must record any damage or repair to containment systems in the inspection logs required by Permit Section 2.6.3.	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(7) The Permittees shall ensure that the number of 55-gallon drums stored on a secondary containment pallet does not exceed the design capacity of the pallet.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(8) The Permittees shall ensure that all metal secondary containment pallets have a chemically-resistant coating equivalent to urethane. The Permittees shall maintain the chemical-resistant coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	All secondary containment systems were verified as in compliance.
3.7.2: Containers without Free Liquids	(1) For container storage areas that will store only wastes without free liquids (see Attachment J (Hazardous Wastes Management Units), Table J-1 (Active Portion of the Facility)), the Permittees shall ensure that:	Y	Verified as in compliance during on-site review.
3.7.2: Containers without Free Liquids	a. the storage areas are sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation or other liquids (see 40 CFR § 264.175(c)(1)); or	Y	See parent note for PC 3.7.2 above.
3.7.2: Containers without Free Liquids	b. the containers are elevated or otherwise protected from contact with accumulated liquids (see 40 CFR § 264.175(c)(2)).	Y	See parent note for PC 3.7.2 above.
3.7.2: Containers without Free Liquids	(2) The Permittees shall comply with the secondary containment requirements for hazardous wastes that do not contain free liquids and have the following waste codes: F020, F021, F022, F023, F026 and F027 (see 40 CFR § 264.175(d)(1)).	NA	TA-50 does not store waste with these codes.
3.8: INSPECTION SCHEDULES AND PROCEDURES	(1) The Permittees shall inspect the permitted CSUs at least weekly for evidence of leaks or deterioration of the containment system by corrosion, cracking, differential settlement or other factors (see 40 CFR § 264.174).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.8: INSPECTION SCHEDULES AND PROCEDURES	(2) The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (see 40 CFR §§ 264.174 and 270.32(b)(2)).	Y	During review, all containers and labels were stored in a manner that allowed for inspection.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(1) The Permittees shall control air pollutant emissions from each hazardous waste container at a permitted unit in accordance with the applicable regulations in 40 CFR Part 264 Subpart CC. The Permittees shall also manage hazardous wastes subject to emission controls in accordance with Attachment E (Inspection Plan).	NA	Facility only stores mixed waste, is exempt from requirements from 40 CFR Part 264 Subpart CC, see 265.1080(b)(6).
3.9: VOLATILE ORGANIC AIR EMISSIONS	(2) The Permittees shall not be required to control air pollutant emissions from a container in accordance with the exemptions in 40 CFR §§ 264.1080(b)(1) through (8).	Y	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(3) If the Permittees claim an exemption from air pollution emission controls due to a container holding radioactive mixed waste, the Permittees shall clearly label the container in accordance with Permit Section 3.6.	Y	All mixed waste containers are fitted with carbon filters and properly labeled.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(4) A suitable method to control container air pollution emissions is the utilization of the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b). This emission control method is met if the containers adhere to the following requirements:	NA	See parent note from PC 3.9 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.9: VOLATILE ORGANIC AIR EMISSIONS	a. the containers have a capacity of greater than 0.1 cubic meters and less than 0.46 cubic meters (approximately 119 gallons);	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	b. the containers meet U.S. Department of Transportation (DOT) specifications under 49 CFR Part 178;	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	c. the containers are kept closed during storage; and	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	d. the containers are inspected weekly to ensure lids and openings are securely closed and there is no possibility of air emissions (see 40 CFR §§ 264.1086(c)(3) and (4)).	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(5) All containers that are not exempted under 40 CFR 264, Subpart CC, shall be subject to Container Level 1 requirements, except that the Permittees shall identify containers subject to Container Level 2 controls on a list in the Facility Operating Record.	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(6) Containers may be opened for the purpose of adding or removing waste or as otherwise allowed at 40 CFR § 264.1086(c)(3), which is incorporated herein by reference.	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(7) The Permittees shall characterize hazardous wastes subject to emission controls in accordance with Permit Section 2.4 (Waste Analysis) and Attachment C (Waste Analysis Plan).	NA	See parent note from PC 3.9 above.

C.1.3.4 TA-54 Permitted Storage Checklist

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 3			
3.12.1: General Operating Conditions	The Permittees shall ensure that storage of hazardous waste in containers at TA-54 occurs only in the permitted unit at Area L, the nine permitted units at Area G, the two permitted units at TA-54 West, and as identified in Attachment A (Technical Area Unit Descriptions) and Attachment J (Hazardous Waste Management Units).	Y	No wastes were observed stored outside of permitted areas
3.12.1: General Operating Conditions	Area G		
3.12.1: General Operating Conditions	(1) The Permittees shall ensure that at Area G, all containers storing hazardous waste with free liquids are stored on secondary containment pallets, except inside the following structures: Domes 230, and Sheds 144, 145, 146, 177, 1027, 1028, 1029, and 1041.	Y	All containers storing free liquids in Area G were on secondary containment or in containment buildings.
3.12.1: General Operating Conditions	Area L		
3.12.1: General Operating Conditions	(1) The 10,000 gallon holding tank at Area L, Dome 215 shall be inspected monthly and any detected fluids shall be characterized and removed within 3 days. The Permittees shall include a record of all holding tank inspections and evacuations in the Facility's Operating Record, including a complete chemical analysis of the tank contents (see 40 CFR § 270.32(b)(2)).	Y	No fluids have been detected in tank.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.12.1: General Operating Conditions	(2) The Permittees shall ensure that at Area L, all containers storing hazardous waste with free liquids are stored on secondary containment pallets, except when inside the following structures: Sheds 31, 68, 69, 70; concrete pad with canopy TA-54-32; concrete pads TA-54-35, TA-54-36, TA-54-58; and building TA-54-39 (Room 101 and South Containment Pad).	Y	All containers storing free liquids in Area L were on secondary containment or in containment buildings.
3.12.1: General Operating Conditions	TA-54 West		
3.12.1: General Operating Conditions	The Permittees may store mixed TRU wastes in sealed Nuclear Regulatory Commission (NRC) certified Type-B shipping containers at the TA-54 West Outdoor permitted unit without secondary containment and weather protection.	NA	No wastes stored at TA-54 West Permitted Unit.
3.12.1: General Operating Conditions	The Permittees may use the Outdoor Pad excess storage capacity listed in Attachment J, Table J-1, only as specified in Permit Attachment A, Section A.4.3.2 (see 40 CFR § 270.32(b)(2)).	NA	Excess storage capacity was not used at time of review.
3.12.1: General Operating Conditions	The Permittees shall send a notification to the Secretary upon using the excess storage capacity that provides justification for its use. The Permittees shall send the notification to the e-mail notification list as specified in Permit Section 1.13.	NA	Excess storage capacity was not used at time of review.
3.12.2: Preventing Run-on and Run-off			
3.12.2.1: Domes 153 & 283	The Permittees shall repair the 6-inch-high, 8-inch-wide curb at the perimeter of Domes 153 and 283 to prevent run-on/run-off to and from the permitted unit.	Y	Curbing was evaluated and sufficient to prevent run-on and run-off.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.12.2.2: Storage Shed 8	The Permittees shall repair the 6-inch high, 8-inch-wide curb at Storage Shed 8 in as timely a manner as possible to prevent run-on/run-off to and from the permitted unit. The concrete slab on the south side of the shed shall be sloped away from the shed's foundation to prevent run-on. If the concrete slab is damaged, the Permittees shall repair the slab to prevent run-on to the permitted unit.	Y	Curbing was evaluated and sufficient to prevent run-on and run-off.
3.12.2.3: TA-54-33	The Permittees shall repair the 6-inch-high, 8-inch-wide concrete curb at the perimeter of the dome at TA-54-33 to prevent run-on/run-off to and from the permitted unit. The concrete floors of Rooms 100, 100A, 100B, 100C, and 105 shall slope inward to prevent run-off. If the concrete floors are damaged, the Permittees shall repair the floor(s) to prevent run-off from the permitted unit.	Y	Curbing was evaluated and sufficient to prevent run-on and run-off.
3.12.3: Secondary Containment			
3.12.3.1: TA-54-32	The Permittees shall treat the concrete sumps with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation. The Permittees shall maintain the chemical-resistant epoxy and protective coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	Concrete sumps were inspected during on-site walkthrough.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.12.3.2: TA-54-35	The Permittees shall treat the concrete berms and the base of the concrete pad with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation. The Permittees shall maintain the chemical-resistant epoxy and protective coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications	Y	Berms were inspected during on-site walkthrough.
3.12.3.3: TA-54-36	The Permittees shall treat the concrete berms and the base of the concrete pad with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation. The Permittees shall maintain the chemical-resistant epoxy and protective coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	Berms were inspected during on-site walkthrough.
3.12.3.4: TA-54-58	The Permittees shall treat the concrete berms and the base of the concrete pad with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation. The Permittees shall maintain the chemical-resistant epoxy and protective coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	Berms were inspected during on-site walkthrough.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.12.3.5: TA-54-39 and Containment Pad			
3.12.3.5.i: Room 101	The Permittees shall treat the curb and floor of this 878 square foot room with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation. The Permittees shall maintain the chemical-resistant epoxy and protective coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	Curb and floor were inspected during on-site walkthrough
3.12.3.5.ii: Containment Pad	The Permittees shall treat the concrete floor and curb with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation. The Permittees shall maintain the chemical-resistant epoxy and protective coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	Curb and floor were inspected during on-site walkthrough
3.12.3.6: Storage Sheds 144, 145, 146, and 177	The Permittees shall ensure the interior of each shed and sump is treated with chemically-resistant epoxy paint. The Permittees shall maintain the chemically-resistant epoxy paint in accordance with Permit Section 3.7.1 of this Permit Part and the manufacturer's specifications.	Y	Interior of shed and sump were inspected during on-site walkthrough.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
General Permit Conditions: Section 2			
2.2: AUTHORIZED WASTES	The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous wastes the Permittees proposed to manage at the units in the Permit Application, which are those wastes bearing the EPA Hazardous Waste Numbers (i.e., waste codes) listed in Attachment B (Part A Application), unless otherwise prohibited by this Permit.	Y	Waste codes of stored containers were verified as being acceptable wastes according to the Permit Part A Application.
2.2.3: PCB - Contaminated Waste	The Permittees shall not store liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 parts per million (ppm) unless such storage is in compliance with 40 CFR § 268.50(f).	NA	No PCB hazardous wastes stored at TA-54.
2.3.1: Hazardous Waste Storage	The Permittees shall not store hazardous wastes beyond one year from the date that the wastes were first placed into storage at a permitted unit unless the Permittees are able to demonstrate to the Department that one of the following conditions exists:	Y	Wastes stored over a year are identified on the STP. Wastes that are on a shipping hold due to the WIPP incident are not required to be listed on the STP.
2.3.1: Hazardous Waste Storage	(1) storage is solely for the purpose of accumulating such quantities of hazardous waste restricted from land disposal as necessary to facilitate proper recovery, treatment, or disposal (see 40 CFR § 268.50(a)(2));	NA	See parent note for PC 2.3.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.3.1: Hazardous Waste Storage	(2) the waste meets all of the applicable treatment standards under the Land Disposal Restrictions in 40 CFR Part 268, Subpart D, which are incorporated herein by reference; or	NA	See parent note for PC 2.3.1 above.
2.3.1: Hazardous Waste Storage	(3) that a mixed waste is documented on the Site Treatment Plan (STP) database under the Federal Facility Compliance Order (FFCO) and such storage is otherwise in compliance with all requirements of the STP and FFCO. (see 40 CFR §§ 268.50(b) and (e))	NA	See parent note for PC 2.3.1 above.
2.3.2: Prohibition on Dilution	The Permittees shall not dilute a waste that is prohibited from land disposal or the residue from treatment of a prohibited waste as a substitute for treatment as specified at 40 CFR § 268.3, which is incorporated herein by reference. Dilution to avoid an applicable treatment standard includes, but is not limited to, the addition of solid waste to reduce a hazardous constituent's concentration or ineffective treatment that does not destroy, remove, or permanently immobilize hazardous constituents. Aggregating or mixing wastes as part of a legitimate treatment process is not prohibited dilution for purposes of this Permit.	Y	No dilution of waste observed in reviewing characterization documents of non-hazardous wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.3.3: Documentation of Exclusion or Exemption</p>	<p>The Permittees shall place a one-time notice in the Facility Operating Record for any land disposal prohibited wastes that the Permittees determine are excluded from the definition of hazardous or solid waste or determine are exempted from Subtitle C regulation under 40 CFR §§ 261.2 through 261.6 subsequent to the point of generation (see 40 CFR § 268.7(a)(7)). Exemptions required to be documented include, but are not limited to, hazardous waste managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR §§ 264.1(g)(6) and 260.10, which are incorporated herein by reference. The Facility's on-site files shall include in this documentation a description of the process that generated the waste, the justification for its exemption or exclusion, and a description of the final disposition of the waste.</p>	NA	No hazardous waste streams from TA-54 permitted units are excluded through other regulations.
<p>2.4.1: General Waste Characterization Requirements</p>	<p>The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous waste streams that have been fully characterized in accordance with the requirements of 40 CFR § 264.13, which is incorporated herein by reference, the conditions in this Permit Part, and Attachment C (Waste Analysis Plan).</p>	Y	Characterization of wastes checked for a representative sample. See checklist for sites visited to review specific waste streams that characterization was reviewed.
<p>2.4.1: General Waste Characterization Requirements</p>	<p>At a minimum, the Permittees shall obtain and document all of the information that must be known to treat, store, or otherwise manage a hazardous waste stream in accordance with 40 CFR Parts 264 and 268 including, but not limited to:</p>	Y	All waste characteristics for wastes received at TA-54 are included in WCATs system (LANL 2108g)

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(1) all applicable EPA hazardous waste numbers;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(2) waste characterization necessary to determine whether the waste stream is prohibited from land disposal;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(3) waste characterization necessary to prevent the mixing or placing of incompatible wastes in the same container (see 40 CFR §§ 264.17 and 264.177) or tank system (see 40 CFR § 264.199), and to prevent the impairment of containers (see 40 CFR § 264.172), tanks, and secondary containment systems for tanks by incompatible wastes (see 40 CFR § 264.193(c)(1));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(4) waste characterization necessary to prevent accidental or spontaneous ignition or reaction of ignitable or reactive wastes, including, but not limited to, ignition or reaction in containers (see 40 CFR § 264.17) and tank systems (see 40 CFR § 264.198);	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(5) whether the waste is a mixed waste (see 40 CFR § 270.32(b)(2));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(6) whether the waste contains free liquids;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(7) the waste stream name;	Y	See parent note for PC 2.4.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(8) the unique waste stream identifier;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(9) the waste stream generation location (e.g. building and room number); and	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(10) a detailed description of the waste stream generation process that includes all relevant material inputs or other information that identifies the chemical content and physical form of the waste.	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	The Permittees shall characterize waste streams by using current Department-approved sampling and analysis methods, acceptable knowledge, or a combination of the two. When acceptable knowledge is insufficient to fully characterize a waste stream, the Permittees shall utilize sampling and analysis to complete that characterization.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	The Permittees shall maintain all waste characterization information in the Facility Operating Record. For records that contain waste characterization information concerning any hazardous or mixed wastes managed under this Permit, which are required to be archived elsewhere at the Facility (e.g., laboratory record books), the Permittees shall maintain a traceable identifier to this documentation to facilitate access by the Permittees and the Department (see 40 CFR § 270.32(b)(2)). The Permittees shall maintain waste characterization documentation in accordance with the record retention requirements in Permit Section 2.12.2.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall perform all sampling and analytical procedures used for waste characterization in accordance with Department-approved laboratory analytical methods, including the most recent version of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (U.S. EPA Publication SW-846) and Tables C-16, C-17, and C-18 in Attachment C (Waste Analysis Plan). The Permittees shall ensure that samples collected and analyzed for waste characterization are representative of the chemical composition of the entire volume of the waste stream.	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall ensure that procedures used to collect a representative sample of a waste stream preserve its original physical form and composition and ensure prevention of contamination or changes in concentration of the constituents to be analyzed.	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall implement a quality assurance and quality control (QA/QC) program to ensure that sample collection and analytical procedures used to support waste characterization required under this Permit are technically accurate and statistically valid. This QA/QC program must comply with the requirements in SW-846. The Permittees shall identify and perform the appropriate number of control samples associated with each sample collected (e.g., trip and field blanks, field duplicates, field spikes). The Permittees shall maintain a record in the Facility Operating Record of all QA/QC procedures utilized in the sampling and analysis of a waste stream.	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	When performing laboratory analysis, the Permittees, or a laboratory under contract to the Permittees, shall analyze the appropriate number of method blanks, laboratory duplicates, and laboratory control samples to assess the quality of the data resulting from laboratory analytical programs.	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	If the Permittees use an independent contract laboratory to conduct waste analyses, the Permittees shall require the analytical laboratory to conduct such analysis in accordance with the waste analysis conditions set forth in Permit Part 2.4 and Attachment C (Waste Analysis Plan), Section C.3 (Characterization Procedures). Copies of contracts or other documentation identifying the independent laboratory and showing that the analytical laboratory is required to operate in accordance with the waste analysis conditions shall be kept in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees may propose to the Department an analytical method that deviates from Department-approved methods. The Permittees must submit a written request to the Department for review and approval 90 days prior to using the proposed sampling or analytical procedure. This request must include the following information:	NA	There are no alternative methods performed at LANL.
2.4.2: Sampling and Analysis for Hazardous Wastes	(1) a statement of the need and justification for the proposed action;	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(2) a full description of the alternative method (i.e., a standard operating procedure) including all procedural steps and equipment used in the method;	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(3) a description of the types of wastes, or waste matrices, for which the proposed method may be used;	NA	See parent note for PC 2.4.2 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	(4) comparative analytical data obtained from using the proposed method with those obtained from using the Department-approved relevant or corresponding methods in Attachment C (Waste Analysis Plan);	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(5) a demonstration that the proposed analytical procedure is equal to, or superior to, the corresponding methods in Attachment C (Waste Analysis Plan) in terms of its sensitivity, accuracy, and precision (i.e., reproducibility);	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(6) an assessment of any factors which may interfere with or limit the use of the proposed method; and	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(7) a description of the QA/QC procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method.	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall obtain written approval from the Department of the alternative method before substituting it for an approved method under this Permit, except that a change requested to conform with agency guidance or regulations shall be a Class 1 permit modification (see 40 CFR § 270.42 Appendix 1).	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.3: Acceptable Knowledge	The Permittees may use acceptable knowledge to characterize waste in lieu of, or to supplement, sampling and analysis. The Permittees shall document all uses of acceptable knowledge, and include in the acceptable knowledge documentation all of the background information assembled and used in the characterization process relevant to the decision to use acceptable knowledge (see 40 CFR § 270.32(b)(2)). The record must document the resolution of any data discrepancies between different sources of acceptable knowledge. Acceptable knowledge documentation must be maintained in an auditable form in the Facility Operating Record. The Permittees shall assign a traceable identifier to this documentation to facilitate both access to this information and its verification by the Permittees and the Department.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).
2.4.7: Waste Characterization Review	The Permittees shall ensure that the initial characterization of any hazardous waste stream managed under this Permit is reviewed or repeated to verify that the characterization is accurate and up to date (see 40 CFR § 264.13(b)(4)). The Permittees shall document this review in the Facility Operating Record. The Permittees shall perform the following:	Y	WCATs system requires annual verification of waste stream profiles, which includes characterization records (LANL 2108g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.7: Waste Characterization Review	(1) Annually reevaluate all hazardous waste streams generated to verify the accuracy of initial and subsequent characterization results. The annual reevaluation shall be required no later than one year from the date of initial characterization of the hazardous waste stream or one year from the last annual reevaluation;	Y	See parent note for PC 2.4.7 above.
2.4.7: Waste Characterization Review	(2) Recharacterize hazardous wastes whenever there is a change in the waste-generating processes which includes a change in the status of the waste for purposes of Land Disposal Restrictions or when analytical results indicate a change in the waste stream;	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.7: Waste Characterization Review</p>	<p>(3) Annually verify the waste characterization of one percent of hazardous waste streams characterized solely by acceptable knowledge (see 40 CFR §§ 264.13(b)(4) and 270.32(b)(2)). Such waste characterization verification shall be performed by quantitative chemical analyses appropriate for the waste as specified in Attachment C (Waste Analysis Plan). The one percent of wastes whose characterization is to be verified shall be determined in relation to the total number of unique waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year. The waste streams whose characterization is to be verified shall be chosen without further bias and the selection procedure shall be documented in the Facility Operating Record. Wastes not required to undergo this annual verification and not to be counted toward the total number of wastes managed in the previous year include mixed transuranic wastes, hazardous debris, and hazardous wastes that are hazardous only because they are listed at 40 CFR Part 261, Subpart D; and</p>	<p>Y</p>	<p>See parent note for PC 2.4.7 above.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.4.7: Waste Characterization Review</p>	<p>(4) Recharacterize a hazardous waste stream whenever the Permittees are notified by a receiving off-site facility that the characterization of a hazardous waste they obtained from the Permittees' Facility does not match a pre-approved waste analysis certification or accompanying waste manifest or shipping paper. The Permittees shall notify the Department in writing within three days of their receipt of the notice of the discrepancy from a receiving facility.</p>	<p align="center">N</p>	<p>Observation 11: Permitted disposal facility receiving waste from TA-54 Area L provided three (3) waste discrepancies for which LANL did not notify NMED within three days in 2017.</p>
<p align="center">2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements</p>	<p>The Permittees shall characterize hazardous wastes managed in containers and tanks to determine the average volatile organic compound (VOC) concentration relative to 500 parts per million by weight (ppmw) at the point of waste origination in compliance with 40 CFR Part 264, Subpart CC. The Permittees shall determine the average VOC concentration either by utilizing acceptable knowledge or by using the procedures specified in 40 CFR § 264.1083(a), which is incorporated herein by reference. The Permittees shall review and update this determination at least once every 12 months following the date of the initial determination in compliance with 40 CFR § 264.1082(c)(1), which is incorporated herein by reference.</p>	<p align="center">NA</p>	<p>No wastes requiring emission controls observed at TA-54, except for mixed wastes.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to control air pollutant emissions from a container or tank and thus shall not be required to characterize the waste for its average VOC concentration in the following circumstances:	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(1) if the container or tank stores mixed waste (see 40 CFR § 264.1080(b)(6));	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(2) if the container storing the wastes has a total capacity of less than 0.1 cubic meter (approximately 26 gallons)(see 40 CFR § 264.1080(b)(2)); or	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(3) if a tank has stopped receiving hazardous waste and is undergoing closure (see 40 CFR § 264.1080(b)(3)).	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to determine the average VOC concentration of wastes if control of air pollution emissions from containers is achieved utilizing the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b), which is incorporated herein by reference.	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall ensure that before any hazardous waste is managed at a permitted unit a determination has been made as to whether the waste has to be treated before it can be land disposed (see 40 CFR § 268.7(a)). The Permittees must characterize waste designated to be disposed of at the Waste Isolation Pilot Plant (WIPP) to determine whether it is subject to the land disposal prohibitions, except that such waste is not required to be characterized to determine all applicable underlying hazardous constituents listed in 40 CFR § 268.48.</p>	<p align="center">Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>
<p align="center">2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When using laboratory analysis as part of a hazardous waste characterization pursuant to Attachment C (Waste Analysis Plan), Section C.3.1.2, the Permittees shall require the laboratory to report concentrations of all hazardous constituents listed at 40 CFR § 268.48, Table UTS that the analytical test method used is capable of measuring, as specified at the most recent version of the U.S. EPA's Test Methods for Evaluating Solid Wastes (SW-846). When performing this laboratory analysis the Permittees will not be required to perform sample preparation or determinative procedures other than those performed routinely for the target analytes.</p>	<p align="center">Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When performing or obtaining laboratory analysis to demonstrate that a waste meets its applicable treatment standard concentrations specified in 40 CFR § 268.40, Treatment Standards for Hazardous Wastes, in compliance with 40 CFR §§ 268.7(a) and (b), which are incorporated herein by reference, the Permittees shall ensure that analytical method practical quantification limits are not higher than the applicable treatment standard (see 40 CFR § 270.32(b)).</p>	<p>Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall characterize treatment-derived wastes by determining whether the waste is a hazardous or mixed waste in compliance with the requirements in Permit Section 2.4.1 and in compliance with the notification and recordkeeping requirements specified in 40 CFR § 268.7(b)(3)(ii), Treatment Facility Paperwork Requirements Table, which is incorporated herein by reference.</p>	<p>NA</p>	<p>No treatment at TA-54, so no treatment derived waste.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions	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.	NA	No treatment at TA-54, so no treatment derived waste.
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:	Y	All entries to TA-54 are gated and monitored.
2.5: SECURITY	(1) 24-hour surveillance system continuously monitoring and controlling entry into the permitted units at the Facility; or	Y	See parent note for PC 2.5 above.
2.5: SECURITY	(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).	Y	See parent note for PC 2.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	Signage verified during on-site assessment.
2.5.1: Warning Signs	DANGER – UNAUTHORIZED PERSONNEL KEEP OUT (PELIGRO – SE PROHIBE LA ENTRADA A PERSONAS NO AUTORIZADAS)	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	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).	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	The Permittees shall post signs requested by Santa Clara Pueblo (Kha-'Po). The Permittees shall include on the signs the following warning:	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	Wi-i ts'uni pi' – (DO NOT ENTER)	NA	See parent note for PC 2.5.1 above.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall inspect all the permitted units for malfunctions, deterioration, operator errors, and discharges which may cause or may lead to:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	(1) a release of hazardous constituents to the environment; or	NA	See parent note for PC 2.6. above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6: GENERAL INSPECTION REQUIREMENTS	(2) a threat to human health. (see 40 CFR § 264.15(a))	NA	See parent note for PC 2.6. above.
2.6: GENERAL INSPECTION REQUIREMENTS	Inspections shall be conducted of all waste management structures, base materials, containers, monitoring equipment, safety and emergency equipment, security devices, and operating equipment that are important in preventing, detecting, and responding to environmental or human health hazards associated with hazardous wastes (see 40 CFR § 264.15(b)(1)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall implement the inspection program for the permitted units in compliance with the operating schedule, recordkeeping, and response action commitments in Attachment E (Inspection Plan).	Y	See parent note for PC 2.6 above.
2.6.1: Inspection Schedule	The Permittees shall conduct inspections to identify problems in time to correct them before they harm human health or the environment (see 40 CFR § 264.15(a)). The Permittees shall inspect the permitted units and all associated structures and equipment, in compliance with the inspection schedules contained in Attachment E (Inspection Plan).	Y	See parent note for PC 2.6 above.
2.6.1: Inspection Schedule	The Permittees shall inspect areas subject to spills, such as loading and unloading areas, daily when in use (see 40 CFR § 264.15(b)(4)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.2: Repair of Equipment and Structures	The Permittees shall remedy any deterioration or malfunction of equipment or structures discovered during an inspection which may lead to an environmental or human health hazard. The Permittees shall mitigate such deterioration or malfunction within 24 hours of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (see 40 CFR § 264.15(c)).	Y	No active "Action Requests" for TA-54

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	The Permittees shall record the results of inspections on the Hazardous Waste Facility Inspection Record Form in Attachment E (Inspection Plan) for each inspection conducted in accordance with Permit Section 2.6 and Attachment E. At a minimum, the Permittees shall produce a handwritten record of the date and time of the inspection, an identification of the permitted unit and associated structures or equipment, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions taken (see 40 CFR § 264.15(d)). The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and errors are crossed out with a single line, initialed, and dated by the individual making the correction. The Permittees shall maintain the inspection logs and records in a paper format. The Permittees may transfer the inspection logs and records into an electronic format acceptable to the Department. The paper format shall be retained for the period of time specified in Permit Section 2.12.2.	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6.3: Inspection Logs and Records	The Permittees shall record the following observations or actions in the Facility Operating Record:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	(1) the results of any preventive maintenance activities including, but not limited to, maintenance on floors, secondary containment structures, unit drainage structures, and fire protection equipment at a permitted unit;	Y	No current preventive maintenance activities requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(2) any malfunctions and deterioration of such structures or equipment;	Y	No current malfunctions or deteriorations requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(3) any errors affecting waste containment or compliance with this Permit;	Y	No current waste containment issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(4) the locations, dimensions, and repairs of all identified cracks or gaps in floors or base materials;	Y	No current flooring issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(5) any discharges of hazardous waste, hazardous constituents, or fire suppression systems at a permitted unit; and	Y	No records of release or use of fire suppression system.
2.6.3: Inspection Logs and Records	(6) any occurrences that might cause or exacerbate contamination of a permitted unit.	Y	No record of contamination of a permitted unit.
2.6.3: Inspection Logs and Records	The Permittees shall maintain inspection logs in the Facility Operating Record as specified in Permit Section 2.12.2.	Y	Inspection logs maintained onsite, as verified when reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.7: PERSONNEL TRAINING	The Permittees shall ensure that all Facility personnel who are involved in hazardous waste management activities regulated under this Permit successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is incorporated herein by reference, as well as the training requirements in Attachment F (Personnel Training Plan).	Y	Reviewed training from a representative sample of waste handlers at the site.
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, 22, 24, and 38 in Permit Attachment N (Figures). At TA-63, the Permittees shall ensure that containers holding ignitable or reactive waste are located at least 15 meters from the TWF fence line, as shown in Figure 55 in Permit attachment N (Figures) (see 40 CFR §§ 264.176 and 270.32(b)(2)).	Y	Verified during on-site review that ignitable, reactive, and incompatible wastes are: -separated from sources of ignition -segregated by dike, berm, wall, or other device from incompatible wastes -15 meters from facility boundary -stored in containers that have been decontaminated or have not previously held incompatible materials
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	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:	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(5) a threat to human health or the environment.	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(1) ensure there are no sources of open flames in, on, or around the container or tank;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(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;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(3) maintain adequate clearance around fire hydrants at permitted units;	Y	Verified there were no impediments from hydrant access.
2.8.1: Ignitable and Reactive Waste Precautions	(4) use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive wastes;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(5) ensure appropriate lightning protection is provided for all storage and treatment units;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(6) perform ongoing inspection, testing, and maintenance of fire protection equipment to determine appropriate test criteria and preventative maintenance activities;	Y	Verified inspection reports evaluated fire protection equipment.
2.8.1: Ignitable and Reactive Waste Precautions	(7) confine smoking and open flames to designated areas that are a minimum of 50 feet from areas where ignitable or reactive wastes are handled;	Y	Verified no smoking was allowed in permitted units.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.1: Ignitable and Reactive Waste Precautions	(8) stack containers of ignitable and reactive wastes no more than 2 drums high to comply with the National Fire Protection Association's (NFPA) Flammable and Combustible Liquids Code; and	Y	Verified ignitable and reactive wastes were stored no more than 2 drums high.
2.8.1: Ignitable and Reactive Waste Precautions	(9) ensure that each permitted unit's fire suppression system is compatible with the hazardous waste being stored or treated at the permitted unit.	Y	Verified fire suppression systems were adequate for wastes stored.
2.8.1: Ignitable and Reactive Waste Precautions	The Permittees shall assume that all drums with volume capacities between 55 and 110 gallons that hold mixed transuranic wastes and that are not vented, and standard waste boxes that hold mixed transuranic waste and are not vented, contain hydrogen gas and the associated wastes are subject to the conditions of this Permit Section (2.8.1).	NA	Verified all mixed transuranic (MTRU) drums are vented.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers must be separated from the other materials (or waste) or is protected from them by means of a dike, berm, wall, or other device not to include the container, in order to, in the event of leakage from containers under conditions normally incident to storage, prevent the commingling of the incompatible wastes or materials (see 40 CFR § 264.177(c)).	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored within or on the same secondary containment structure.	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored so that a release or spill of these wastes might commingle in a fire suppression water holding area or tank.	Y	All wastes containers and containment systems were evaluated to ensure no incompatible wastes would commingle in fire suppression water holding area or tank.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that all waste and materials are segregated and stored in accordance with the Department of Transportation's (DOT) compatibility groupings or classes contained in 49 CFR § 177.848 (see 40 CFR § 270.32(b)(2)).	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall not store cyanides and cyanide mixtures or solutions with acids if a mixture of the materials could generate hydrogen cyanide. The Permittees shall not store Class 8 (corrosive) liquids above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) wastes except when it is known that the mixture of the wastes could not cause a fire or a dangerous evolution of heat or gas.	Y	Verified that cyanides are segregated from acids.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that hazardous wastes are not placed in an unwashed container (see 40 CFR § 264.177(b)) or tank (see 40 CFR § 264.199(b)) that previously held an incompatible waste or material.	Y	All containers are either new or washed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10: PREPAREDNESS AND PREVENTION	The Permittees shall maintain and operate each permitted unit in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituent to the air, soil, or surface water that could threaten human health or the environment (see 40 CFR § 264.31). In addition to the general preparedness and prevention requirements identified here, the Permittees shall comply with the TA-specific preparedness and prevention requirements and shall maintain the equipment identified in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan)	Y	All permit required controls were verified as operational and in good condition during on-site walkthrough.
2.10.1: Required Equipment	At a minimum, the Permittees shall maintain at the Facility and at each permitted unit the internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment listed in the tables in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan) (see 40 CFR § 264.32(b)(2)). The Permittees shall ensure that any changes to the emergency equipment lists adhere to the permit modification requirements at 40 CFR §§ 270.41 through 270.43.	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.1: Required Equipment	The Permittees shall maintain spill kits at each permitted container storage and tank unit as specified in Attachment D (Contingency Plan). These spill kits shall be capable of mitigating small containable spills of acidic, caustic, inflammable, and otherwise hazardous waste present at the unit. For larger spills, the Permittees shall have plugging and diking equipment, siphon pumps, and loaders readily available at the Facility.	Y	Verified adequate spill kits were maintained onsite.
2.10.1: Required Equipment	The Permittees shall ensure that there is adequate water pressure and volume available to each permitted unit to provide for fire suppression (see 40 CFR § 264.32(d)).	NA	Did not evaluate design of facility.
2.10.1: Required Equipment	The Permittees shall operate and maintain the area-wide environmental monitoring network as specified in Section D.7.3 of Attachment D (Contingency Plan).	Y	Reviewed records of area-wide environmental monitoring network.
2.10.1: Required Equipment	At permitted units where equipment is necessary to mitigate the effects of a power outage, the Permittees shall maintain batteries, generators, or some other form of backup power supply capable of operating equipment including evacuation alarms, emergency communication equipment, automatic fire suppression systems, and emergency lights. (See 40 CFR §§ 270.14(b)(8)(iv) and 270.32(b)(2))	Y	Verified back-up power equipment was available.
2.10.1: Required Equipment	The Permittees shall ensure that it is possible to provide fuel to backup generators under adverse conditions.	Y	Verified back-up power equipment was available.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>The Permittees shall test the equipment listed in Section E.1.1 of Attachment E (Inspection Plan) in accordance with the schedule identified in Attachment E to ensure its functionality in the event of an emergency. The Permittees shall maintain the equipment specified in Permit Section 2.10.1 to ensure its proper operation in the event of an emergency (see 40 CFR § 264.33). This equipment shall undergo inspection in accordance with Attachment E (Inspection Plan). The Permittees shall document such inspections in the Facility Operating Record in accordance with this Permit Part.</p>	<p>Y</p>	<p>TA-54 Dome Holding Tanks are inspected weekly. This is the only current active inspection.</p>
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>If testing or inspections identify any missing or nonfunctioning communication equipment, alarm system, fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired or provide substitute equipment. The Permittees shall ensure that employees and contractors working in the area are notified of the presence of substitute equipment and, if necessary, provide them with training in its use (see 40 CFR § 270.32(b)(2)). The Permittees shall document in the Facility Operating Record instances of such notifications and trainings. The Permittees shall ensure that malfunctioning equipment is clearly marked as out of use and that the location of the substitute equipment is clearly posted on or adjacent to the faulty equipment (see 40 CFR §§ 264.31 and 270.32(b)(2)).</p>	<p>Y</p>	<p>Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.3: Access to Communications or Alarm System	Whenever an employee is present at a permitted unit and the unit contains hazardous waste, the Permittees shall ensure that all personnel at the unit have immediate access to an internal alarm or emergency communication device either directly or through visual or voice contact with another employee (see 40 CFR § 264.34(a)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.3: Access to Communications or Alarm System	The Permittees shall ensure that any employee working alone at a permitted unit is capable of summoning external emergency assistance and shall have immediate access to a device, such as a hand-held two-way radio, a cell phone, or a landline telephone (see 40 CFR § 264.34(b)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.4: Spill Response	The Permittees shall ensure that spills of hazardous wastes, including small localized spills that can be managed without the assistance of emergency management personnel, are managed utilizing, at a minimum, the following procedures:	Y	No active spills were identified during time of review, but spill response procedures were reviewed.
2.10.4: Spill Response	(1) isolate the immediate area and deny entry to all unauthorized personnel;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(2) contain the spill (e.g., spreading sorbents, forming temporary dikes);	Y	See note for parent PC 2.10.4 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.4: Spill Response	(3) define the nature and extent of the spilled waste;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(4) package the spilled waste and contaminated materials in containers; and	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(5) decontaminate the area, all clean-up equipment, and personnel.	Y	See note for parent PC 2.10.4 above.
Permit Section 3			
3.1: GENERAL CONDITIONS	(1) The Permittees shall store and otherwise manage containers of hazardous waste in accordance with 40 CFR Part 264, Subpart I, which is incorporated herein by reference, and Attachment A (Technical Area Unit Descriptions).	Y	Verified during on-site review that containers were stored in accordance with site-specific information in Attachment A and Subpart I: Use and Management of Containers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.1: GENERAL CONDITIONS</p>	<p>(2) The Permittees shall only store hazardous waste containers at the permitted units identified as utilizing waste process code S01 and specified in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility). The Permittees are authorized to store only those wastes identified by EPA Hazardous Waste Numbers (waste codes) listed in Attachment B (Part A Application) and identified as utilizing waste process code S01. The Permittees shall not store containers of hazardous waste in excess of the maximum capacities for each permitted container storage unit (CSU) identified in Attachment J, Table J-1. However, for purposes of compliance with secondary containment requirements, the holding of a hazardous waste container within a permitted unit for a period not to exceed 24 hours, for transportation, treatment, characterization, or packaging, shall not be deemed storage.</p>	<p>Y</p>	<p>Verified wastes stored in accordance with permit application and in approved quantities.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.1: GENERAL CONDITIONS	(3) The Permittees shall ensure that the figures in Attachment N (Figures) and in the closure plans in Attachment G accurately reflect the location of all buildings and structures, regardless of whether they manage hazardous waste, at hazardous waste management units. The Permittees may change the location of a building or structure at a hazardous waste management unit only in accordance with a Class 1 permit modification requirements at 40 CFR § 270.42(a). Any change to the location of a building or structure within which hazardous waste is managed shall be a Class 1 modification with prior approval of the Department (see 40 CFR § 270.42(a)(2)). Any change to the location of a building or structure within which hazardous waste has not been managed shall be a Class 1 modification without prior approval (see 40 CFR § 270.42(a)(1)).	Y	Reviewed figures while walking sites.
3.2: CONDITION OF CONTAINERS	The Permittees shall ensure that all containers used to store hazardous wastes subject to this Permit are in good condition (e.g., no severe rusting or apparent structural defects) in accordance with 40 CFR § 264.171, which is incorporated herein by reference. If a container is not in good condition or begins to leak, the Permittees shall transfer the waste from such a container into a container that is in good condition within 24 hours of discovery of the problem, and in accordance with 40 CFR § 264.171.	Y	All containers in permitted units verified as being in good condition.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.3: ACCEPTABLE STORAGE CONTAINERS	The Permittees shall only use containers that comply with 40 CFR Part 264 Subpart I (Use and Management of Containers) for storage of hazardous waste at permitted units. Prior to shipment of hazardous waste, containers must comply with Department of Transportation (DOT) shipping container regulations (see 49 CFR § 173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR § 178 - Specifications for Packaging).	Y	All containers used to store wastes were compatible with 40 CFR Part 264 Subpart I. Containers staged for shipment complied with DOT requirements.
3.3: ACCEPTABLE STORAGE CONTAINERS	Solid, oversize items (e.g., glovebox, glovebox parts, vacuum pumps, tanks, duct work, piping, HEPA filters) contaminated with hazardous wastes that cannot be containerized in the waste containers referenced in the previous paragraph shall be subject to this Permit Part. These items shall be wrapped in plastic with a minimum of two layers of plastic to prevent dispersion of contaminating material.	NA	No waste oversize items stored at facility.
3.4: COMPATIBILITY OF WASTE WITH CONTAINERS	The Permittees shall use containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired (see 40 CFR § 264.172).	Y	All waste containers verified as compatible with material being stored.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5: MANAGEMENT OF CONTAINERS	(1) The Permittees shall ensure that all containers are kept closed during storage except when waste is added to or removed from the container or when a container's contents need to be repackaged (see 40 CFR § 264.173(a)). The Permittees shall not open, handle, or store a container holding hazardous waste in a manner that may rupture the container or cause the container to leak (see 40 CFR § 264.173(b)).	NA	Containers stored at site are always kept closed.
3.5: MANAGEMENT OF CONTAINERS	(2) The Permittees shall establish and maintain lines of demarcation which identify the boundaries of all permitted CSUs. The line may be identified by paint, tape, or other permanent, visible marking on the floor or base material (see 40 CFR § 270.32(b)(2)). Permanent fences marking the unit boundary, or rooms or buildings whose walls constitute the boundary of the permitted units, satisfy this requirement.	Y	Painted boundaries were reviewed while onsite. These boundaries are part of the weekly inspections.
3.5: MANAGEMENT OF CONTAINERS	(3) The Permittees shall ensure that drums stored in movable buildings (e.g., modular buildings, transportainers) with non-grated floors are stored on wheeled drum dollies, steel pallets, or are otherwise elevated.	NA	No movable buildings used to store wastes.
3.5: MANAGEMENT OF CONTAINERS	(4) The Permittees shall ensure that when waste containers are moved during storage, the location of each hazardous waste and the quantity at each location is documented in accordance with Permit Section 2.12 (see 40 CFR § 264.73(b)(2)).	Y	Reviewers were provided with facility operating record, which they verified during walk through on a representative sample of drums.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(1) The Permittees shall maintain adequate aisle space at all times to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment within the permitted units. Additionally, emergency egress aisles with a minimum aisle space of two feet must be maintained at all personnel doors (see 40 CFR § 264.35).	Y	Aisle spaces were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(2) The Permittees are authorized to stack containers greater than or equal to 30 gallons of hazardous waste to no more than three containers high. Stacked containers of this volume shall be palletized, and each layer shall be bound together (see 40 CFR § 270.32(b)(2)).	Y	Stacked containers were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(3) The Permittees shall ensure that hazardous waste containers stored outdoors are not stored within five feet of the perimeter (i.e., permitted unit boundary) fence, within five feet of any permanent structure, or within five feet of a paved or unpaved roadway.	Y	Outdoor storage verified as being greater than 5 feet of perimeter fence.
3.5.1: Storage Configuration and Minimum Aisle Space	(4) The Permittees shall store hazardous waste gas cylinders in cylinder racks, baskets, or on specially constructed pallets that provide support and restraint.	NA	No permitted storage of HW gas cylinders.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(5) The Permittees shall ensure that hazardous waste containers that are stored outdoors and are not being actively managed are protected from contact with precipitation using weather protective equipment (e.g., containment shell, secured tarp) or are protected by the design of the equipment (e.g., transportainer, Transuranic Waste Package Transporter II container) (see 40 CFR § 270.32(b)(2)).	Y	Outdoor storage areas verified as protected from weather.
3.6: WASTE CONTAINER LABELING	(1) The Permittees shall ensure that all containers storing hazardous waste have a "Hazardous Waste" label (see 40 CFR § 262.34(a)(3)) that lists the generator's name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)). All containers holding mixed waste shall be labeled "Radioactive." Records for all containers will be maintained in accordance with Permit Section 2.12.	N	1) TA-54 Shed 8: Container W838069 was stored with two conflicting content labels. 2. Containers LA00000067634 and LA00000066425 was labeled as Hazardous Waste and Non-RCRA Waste.
3.6: WASTE CONTAINER LABELING	(2) The Permittees shall ensure that containers holding free liquids have a "free liquids" label. The free liquids reference may be included on a label identifying other waste characteristics (see 40 CFR § 270.32(b)(2)).	N	The following 7 containers were missing a "free liquids" label: W842005, W842409, W841816, W841013, W841815, W841998, and W841530.
3.7: CONTAINMENT SYSTEMS	The Permittees shall store containers of hazardous waste in a manner that prevents contact with any accumulated liquids (see 40 CFR § 264.175(b)(2)).	Y	Verified that no containers are stored on the ground.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(1) The Permittees shall maintain secondary containment systems in all permitted units used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference. The Permittees shall maintain controls to prevent run-on into the permitted unit. These controls shall consist of ground features such as berms and sloping.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.7.1: Containers with Free Liquids</p>	<p>(2) The Permittees shall remove spilled or leaked waste and accumulated precipitation from sumps or secondary containment systems. If the sumps or secondary containment system are the sole means of secondary containment the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in liquid form within 24 hours of detection or immediately if necessary to prevent overflow of the secondary containment system. Otherwise, the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in any form in as timely a manner as is necessary to prevent overflow of the containment system and shall, while the system's capacity is diminished, measure the system daily to demonstrate that the system retains sufficient capacity to contain 10% of the volume of containers or the volume of the largest container holding free liquids, whichever is greater. (see 40 CFR §§ 264.175(b)(4) and (5)). The Permittees shall document this measurement in the Facility Operating Record. Requests for extension of time for any deadline under this subparagraph may be made by e-mail.</p>	<p>Y</p>	<p>No spilled or liquid wastes identified in sumps or secondary containment systems.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(3) The Permittees shall maintain the base of secondary containment systems to ensure they are impervious in order to contain leaks, spills, and/or accumulated precipitation until the collected liquids are detected and removed. The Permittees shall ensure that the secondary containment system have adequate structural strength to withstand the stresses of daily operations (see 40 CFR § 264.175(b)(1)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(4) If a coating or sealant is used as a component of a secondary containment system, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating the Permittees' installation and maintenance procedures were in accordance with the manufacturer's specifications. If the base of the containment unit has expansion or construction joints, the Permittees shall install and maintain chemically resistant water stops, which are embedded in the concrete, or equivalent external systems (e.g. sealant systems) (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(5) If a flexible liner is used as a secondary containment system after July 1, 2014, the Permittees shall maintain documentation in the Facility Operating Record that the flexible liner was installed and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating that the Permittees' installation and maintenance procedures have been conducted in accordance with the manufacturer's specifications (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(6) Unless waste is removed or another form of secondary containment is provided, the Permittees shall repair any damage to a secondary containment system within 15 days of detecting the problem. The Permittees shall perform any concrete or asphalt repair using an appropriate repair method (e.g., ACI standards or manufacturer's recommendations), which will prevent future damage at the location (see 40 CFR §§ 264.15(c), 270.32(b)(2)). The Permittees shall apply coatings or sealants, if applicable, to the repaired area before waste storage activities resume. The Permittees must record any damage or repair to containment systems in the inspection logs required by Permit Section 2.6.3.	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(7) The Permittees shall ensure that the number of 55-gallon drums stored on a secondary containment pallet does not exceed the design capacity of the pallet.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(8) The Permittees shall ensure that all metal secondary containment pallets have a chemically-resistant coating equivalent to urethane. The Permittees shall maintain the chemical-resistant coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	All secondary containment systems were verified as in compliance.
3.7.2: Containers without Free Liquids	(1) For container storage areas that will store only wastes without free liquids (see Attachment J (Hazardous Wastes Management Units), Table J-1 (Active Portion of the Facility)), the Permittees shall ensure that:	Y	See subsequent two items below.
3.7.2: Containers without Free Liquids	a. the storage areas are sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation or other liquids (see 40 CFR § 264.175(c)(1)); or	Y	Site designed and verified to eliminate run-on and run-off of precipitation.
3.7.2: Containers without Free Liquids	b. the containers are elevated or otherwise protected from contact with accumulated liquids (see 40 CFR § 264.175(c)(2)).	Y	All containers verified as not being stored on the ground.
3.7.2: Containers without Free Liquids	(2) The Permittees shall comply with the secondary containment requirements for hazardous wastes that do not contain free liquids and have the following waste codes: F020, F021, F022, F023, F026 and F027 (see 40 CFR § 264.175(d)(1)).	Y	Verified these wastes were in secondary containment.
3.8: INSPECTION SCHEDULES AND PROCEDURES	(1) The Permittees shall inspect the permitted CSUs at least weekly for evidence of leaks or deterioration of the containment system by corrosion, cracking, differential settlement or other factors (see 40 CFR § 264.174).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.8: INSPECTION SCHEDULES AND PROCEDURES	(2) The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (see 40 CFR §§ 264.174 and 270.32(b)(2)).	Y	During review, all containers and labels were stored in a manner that allowed for inspection.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(1) The Permittees shall control air pollutant emissions from each hazardous waste container at a permitted unit in accordance with the applicable regulations in 40 CFR Part 264 Subpart CC. The Permittees shall also manage hazardous wastes subject to emission controls in accordance with Attachment E (Inspection Plan).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(2) The Permittees shall not be required to control air pollutant emissions from a container in accordance with the exemptions in 40 CFR §§ 264.1080(b)(1) through (8).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(3) If the Permittees claim an exemption from air pollution emission controls due to a container holding radioactive mixed waste, the Permittees shall clearly label the container in accordance with Permit Section 3.6.	Y	All mixed waste containers are fitted with carbon filters and properly labeled.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(4) A suitable method to control container air pollution emissions is the utilization of the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b). This emission control method is met if the containers adhere to the following requirements:	Y	Containers were evaluated to determine if emission systems were required.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.9: VOLATILE ORGANIC AIR EMISSIONS	a. the containers have a capacity of greater than 0.1 cubic meters and less than 0.46 cubic meters (approximately 119 gallons);	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	b. the containers meet U.S. Department of Transportation (DOT) specifications under 49 CFR Part 178;	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	c. the containers are kept closed during storage; and	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	d. the containers are inspected weekly to ensure lids and openings are securely closed and there is no possibility of air emissions (see 40 CFR §§ 264.1086(c)(3) and (4)).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(5) All containers that are not exempted under 40 CFR 264, Subpart CC, shall be subject to Container Level 1 requirements, except that the Permittees shall identify containers subject to Container Level 2 controls on a list in the Facility Operating Record.	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(6) Containers may be opened for the purpose of adding or removing waste or as otherwise allowed at 40 CFR § 264.1086(c)(3), which is incorporated herein by reference.	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(7) The Permittees shall characterize hazardous wastes subject to emission controls in accordance with Permit Section 2.4 (Waste Analysis) and Attachment C (Waste Analysis Plan).	Y	Containers were evaluated to determine if emission systems were required.

C.1.3.5 TA-54 Permitted Storage Checklist

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 3			
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 B13, B45, B40, B05, G12, K13, the vault located at TA-55-4, TA-55-0355 Pad 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).	Y	Verified during on-site walkthrough that storage of hazardous or mixed waste only occurred in permitted units.
3.7.2: Containers without Free Liquids	(3) The Permittees shall ensure that the permitted units identified in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility), as managing “non-liquid wastes only” only manage non-liquid wastes.	Y	Sites that are not permitted to store liquid wastes inventories were verified during on-site walkthrough. The following units can only store non-liquid wastes: TA-55-4, B05; TA-55-4, B45; TA-55-4 B13, TA-55-4 G12.
Permit Section 4: TA-55 STORAGE IN TANKS AND TREATMENT BY STABILIZATION			
4.1: GENERAL CONDITIONS	(1) The Permittees shall store mixed waste in tanks in accordance with the requirements of 40 CFR Part 264, Subpart J, which is incorporated herein by reference and this Permit Part. The Permittees shall treat mixed waste by stabilization in accordance with the requirements of 40 CFR Part 264, Subpart X, which is incorporated herein by reference and this Permit Part.	Y	Reviewed mixed waste storage tanks during on-site walkthrough. Mixed waste currently only stored in evaporator glovebox tank.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
4.1: GENERAL CONDITIONS	(2) The Permittees shall, in accordance with this Permit Part, maintain and operate the mixed waste storage tank unit, the stabilization unit, all ancillary equipment as defined in 40 CFR § 260.10, and the associated secondary containment system at TA-55 as described at Attachment A (Technical Area Unit Descriptions).	Y	Reviewed inspection logs and discussed maintenance activities with points of contact (POCs) during on-site walkthrough.
4.1: GENERAL CONDITIONS	(3) The Permittees shall store mixed waste only in the tank systems associated with the permitted unit identified with process code S02 in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility). The Permittees shall treat mixed waste by stabilization only in the permitted unit identified with process code T04 in Attachment J, Table J-1. The Permittees shall not store or treat mixed waste in quantities that exceed the operating capacities identified in Table J-1.	Y	Verified storage of mixed waste during on-site walkthrough. Mixed waste stabilization tank has not been used in approximately 2 years.
4.1: GENERAL CONDITIONS	(4) The Permittees shall store in the tank unit and treat in the stabilization unit only those wastes with the EPA Hazardous Waste Numbers listed in association with the applicable storage tank unit and stabilization unit in Attachment B (Part A Application).	Y	Verified storage of mixed waste during on-site walkthrough. Mixed waste stabilization tank has not been used in approximately 2 years.
4.1: GENERAL CONDITIONS	(5) The Permittees shall ensure that mixed wastes or treatment reagents are not placed in the storage tank or stabilization units if they could cause the units, their ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail (see 40 CFR § 264.194(a)).	Y	Verified storage of mixed waste during on-site walkthrough. Mixed waste stabilization tank has not been used in approximately 2 years.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
4.2: EXISTING TANK SYSTEM INTEGRITY	The Permittees shall maintain in the Facility Operating Record the written integrity assessments of the existing tank unit system provided with the Permittees' Permit Application.	Y	Verified inspections include tank integrity testing.
4.3: REPLACEMENT TANK SYSTEM AND STABILIZATION UNIT COMPONENTS	(1) The Permittees shall ensure either that storage tank or stabilization system repairs are performed in accordance with 40 CFR §§ 264.196(e)(2) through (4), or that the system be closed in accordance with the conditions of this Permit and 40 CFR § 264.197, which is incorporated herein by reference.	NA	No active repairs required in review of inspection records.
4.3: REPLACEMENT TANK SYSTEM AND STABILIZATION UNIT COMPONENTS	(2) During the replacement of tank unit systems and stabilization unit ancillary equipment the Permittees shall ensure that proper handling procedures are adhered to in order to prevent damage to the units, their components, or any ancillary equipment (see 40 CFR § 264.192(b)). Replacement equipment shall be made of the same or similar materials as those described in Attachment A (Technical Area Unit Descriptions).	NA	No active replacement of tank unit systems observed.
4.3: REPLACEMENT TANK SYSTEM AND STABILIZATION UNIT COMPONENTS	(3) The Permittees shall ensure that prior to replacing a portion of the tank or stabilization unit systems, a registered engineer trained and experienced in the proper installation of tank systems or components inspects the system in accordance with the requirements of 40 CFR § 264.192(b). A record of this inspection shall be maintained in the Facility Operating Record.	NA	No active replacement of tank unit systems observed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
4.3: REPLACEMENT TANK SYSTEM AND STABILIZATION UNIT COMPONENTS	(4) If the Permittees repair the storage tank unit or the stabilization unit systems, the Permittees shall certify that the system is capable of handling mixed wastes without release for the intended life of the system in accordance with the requirements of 40 CFR § 264.196(f), which is incorporated herein by reference. This certification must be submitted to the Department within seven days after returning the tank system to use.	NA	No active repair of tank unit systems observed.
4.3: REPLACEMENT TANK SYSTEM AND STABILIZATION UNIT COMPONENTS	(5) Replacement tanks, their ancillary equipment, and stabilization unit ancillary equipment shall be tested for tightness prior to being placed into use (see 40 CFR § 264.192(d)). If a replacement tank, tank ancillary equipment or the stabilization unit ancillary equipment is found not to be tight, all repairs necessary to remedy the leak(s) in the system shall be performed prior to the system being placed into use.	NA	No active replacement of tank unit systems observed.
4.3: REPLACEMENT TANK SYSTEM AND STABILIZATION UNIT COMPONENTS	(6) The Permittees shall obtain and keep in the Facility Operating Record the written statements required at 40 CFR § 264.192, which is incorporated herein by reference.	Y	Reviewed as Attachment H of <i>Resource Conservation and Recovery Act (RCRA), Technical Area 55 (TA-55) Part B Permit Application Submittal- Los Alamos National Laboratory (LANL), EPA ID No. NM 890010515.</i>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT</p>	<p>(1) The Permittees shall ensure that the tank and stabilization units have an associated secondary containment system that conforms to the requirements specified at 40 CFR § 264.193, which is incorporated herein by reference. The Permittees shall consider the walls and floor of Room 401 as the secondary containment system for the storage tank and the stabilization units.</p>	<p>Y</p>	<p>Quote from TA-55 Part B Permit Application: <i>The storage tank system is located at TA-55-4 inside Room 401. This room has a floor and walls that completely surround the tank system (i.e., tanks, ancillary equipment, and piping) and serve as secondary containment, therefore, the secondary containment meets the requirements of 20.4.1 NMAC §264.193(e)(1) for an external liner system.</i></p>
<p>4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT</p>	<p>(2) The Permittees shall use appropriate controls and practices to prevent spills and overflows from the storage tank unit, the stabilization unit, or their associated containment system in accordance with 40 CFR § 264.194(b), which is incorporated herein by reference.</p>	<p>NA</p>	<p>No records of observed releases from permitted stabilization unit.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT</p>	<p>(3) The Permittees shall ensure that spilled, leaked, or otherwise accumulated liquids are removed from the secondary containment system, including but not limited to the sumps, within 24 hours of detection of the spill, leak, or accumulation. The Permittees may seek an extension of time if the Permittees can demonstrate that removal of the released waste or accumulated liquids cannot be accomplished within 24 hours (see 40 CFR § 264.193(c)(4)). Such a determination must be made within 24 hours of detection of the spill, leak of the released waste. The Permittees shall notify the Department of any accumulated liquids within the secondary containment system within five days of detection of such liquids (see 40 CFR § 270.32(b)(2)).</p>	<p>NA</p>	<p>No records of observed releases from permitted stabilization unit.</p>
<p>4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT</p>	<p>(4) The Permittees shall ensure that the secondary containment system comprised in part by floor, wall, or joint sealants, is installed and maintained in accordance with the sealant manufacturer's recommendations, and shall maintain documentation of this fact in the Facility Operating Record. This documentation shall include a copy of the manufacturer's recommendations and a certification from a registered engineer stating the Permittees' installation and maintenance procedures were performed in accordance with the recommendations.</p>	<p>Y</p>	<p>Verified that joints are inspected as part of regular inspections.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT	(5) Secondary containment systems utilizing sealants existing at the time of this Permit's issuance but not having associated sealant manufacturer's recommendations or an associated certification statement shall be re-sealed within 90 days of the effective date of this Permit (see 40 CFR § 270.32(b)(2)).	NA	No use of joint sealants not identified in FOR.
4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT	(6) The Permittees shall ensure that all tank and stabilization unit ancillary equipment have secondary containment in accordance with 40 CFR § 264.193(f), which is incorporated herein by reference. Above ground waste piping, including welded flanges, joints, and connections, shall be inspected for leaks each operating day (i.e., each day that waste is present in a tank or stabilization unit).	Y	Tanks holding waste are inspected daily, as verified in Inspection Record Form review. Room acts as secondary containment.
4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT	(7) The Permittees shall ensure that a storage tank unit, stabilization unit, secondary containment system, or a portion of these units or systems, from which there has been a leak or spill, or which is unfit for use, is removed from service immediately and otherwise complies with the requirements of 40 CFR § 264.196, which is incorporated herein by reference.	NA	No recent required replacement of any permitted unit or containment.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT	(8) The Permittees shall ensure that any release of mixed waste from a storage tank or stabilization unit to the environment (e.g., soil, surface water, groundwater, atmosphere) is reported to the Department by e-mail or facsimile within 24 hours of its detection (see 40 CFR § 264.196(d)). Within 30 days of detection of a release to the environment, the Permittees shall submit a written report to the Department containing the information at 40 CFR § 264.196(d)(3), which is incorporated herein by reference.	NA	No recent releases from TA-55 permitted unit.
4.4: TANK SYSTEMS AND STABILIZATION UNIT CONTAINMENT	(9) The Permittees shall give notice by e-mail to persons on the e-mail notification list of the written report under 40 CFR § 264.196(d)(3) in accordance with Permit Section 1.13.	NA	No recent releases from TA-55 permitted unit.
4.5: IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES	The Permittees shall ensure that the mixed waste storage tank and stabilization units do not manage ignitable or reactive waste.	Y	No ignitable or reactive waste observed stored in tanks during review.
4.5: IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES	The Permittees shall ensure that incompatible wastes, or wastes and other materials that are incompatible, are not placed in the same tank system or stabilization unit (see 40 CFR § 264.199).	Y	No incompatible wastes stored in tanks during review.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
General Permit Conditions: Section 2			
2.2: AUTHORIZED WASTES	The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous wastes the Permittees proposed to manage at the units in the Permit Application, which are those wastes bearing the EPA Hazardous Waste Numbers (i.e., waste codes) listed in Attachment B (Part A Application), unless otherwise prohibited by this Permit.	Y	Waste codes of stored containers were verified as being acceptable wastes according to the Permit Part A Application.
2.2.3: PCB - Contaminated Waste	The Permittees shall not store liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 parts per million (ppm) unless such storage is in compliance with 40 CFR § 268.50(f).	NA	No PCB hazardous wastes stored at TA-55.
2.3.1: Hazardous Waste Storage	The Permittees shall not store hazardous wastes beyond one year from the date that the wastes were first placed into storage at a permitted unit unless the Permittees are able to demonstrate to the Department that one of the following conditions exists:	Y	Wastes stored over a year are identified on the STP. Wastes that are on a shipping hold due to the WIPP incident are not required to be listed on the STP.
2.3.1: Hazardous Waste Storage	(1) storage is solely for the purpose of accumulating such quantities of hazardous waste restricted from land disposal as necessary to facilitate proper recovery, treatment, or disposal (see 40 CFR § 268.50(a)(2));	NA	See parent note for PC 2.3.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.3.1: Hazardous Waste Storage	(2) the waste meets all of the applicable treatment standards under the Land Disposal Restrictions in 40 CFR Part 268, Subpart D, which are incorporated herein by reference; or	NA	See parent note for PC 2.3.1 above.
2.3.1: Hazardous Waste Storage	(3) that a mixed waste is documented on the Site Treatment Plan (STP) database under the Federal Facility Compliance Order (FFCO) and such storage is otherwise in compliance with all requirements of the STP and FFCO. (see 40 CFR §§ 268.50(b) and (e))	NA	See parent note for PC 2.3.1 above.
2.3.2: Prohibition on Dilution	The Permittees shall not dilute a waste that is prohibited from land disposal or the residue from treatment of a prohibited waste as a substitute for treatment as specified at 40 CFR § 268.3, which is incorporated herein by reference. Dilution to avoid an applicable treatment standard includes, but is not limited to, the addition of solid waste to reduce a hazardous constituent's concentration or ineffective treatment that does not destroy, remove, or permanently immobilize hazardous constituents. Aggregating or mixing wastes as part of a legitimate treatment process is not prohibited dilution for purposes of this Permit.	Y	No dilution of waste observed in reviewing characterization documents of non-hazardous wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.3.3: Documentation of Exclusion or Exemption</p>	<p>The Permittees shall place a one-time notice in the Facility Operating Record for any land disposal prohibited wastes that the Permittees determine are excluded from the definition of hazardous or solid waste or determine are exempted from Subtitle C regulation under 40 CFR §§ 261.2 through 261.6 subsequent to the point of generation (see 40 CFR § 268.7(a)(7)). Exemptions required to be documented include, but are not limited to, hazardous waste managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR §§ 264.1(g)(6) and 260.10, which are incorporated herein by reference. The Facility's on-site files shall include in this documentation a description of the process that generated the waste, the justification for its exemption or exclusion, and a description of the final disposition of the waste.</p>	NA	<p>No hazardous waste streams from TA-55 permitted units are excluded through other regulations.</p>
<p>2.4.1: General Waste Characterization Requirements</p>	<p>The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous waste streams that have been fully characterized in accordance with the requirements of 40 CFR § 264.13, which is incorporated herein by reference, the conditions in this Permit Part, and Attachment C (Waste Analysis Plan).</p>	Y	<p>Characterization of wastes checked for a representative sample. See checklist for sites visited to review specific waste streams that characterization was reviewed.</p>
<p>2.4.1: General Waste Characterization Requirements</p>	<p>At a minimum, the Permittees shall obtain and document all of the information that must be known to treat, store, or otherwise manage a hazardous waste stream in accordance with 40 CFR Parts 264 and 268 including, but not limited to:</p>	Y	<p>All waste characteristics for wastes received at TA-55 are included in WCATs system (LANL 2108g)</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(1) all applicable EPA hazardous waste numbers;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(2) waste characterization necessary to determine whether the waste stream is prohibited from land disposal;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(3) waste characterization necessary to prevent the mixing or placing of incompatible wastes in the same container (see 40 CFR §§ 264.17 and 264.177) or tank system (see 40 CFR § 264.199), and to prevent the impairment of containers (see 40 CFR § 264.172), tanks, and secondary containment systems for tanks by incompatible wastes (see 40 CFR § 264.193(c)(1));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(4) waste characterization necessary to prevent accidental or spontaneous ignition or reaction of ignitable or reactive wastes, including, but not limited to, ignition or reaction in containers (see 40 CFR § 264.17) and tank systems (see 40 CFR § 264.198);	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(5) whether the waste is a mixed waste (see 40 CFR § 270.32(b)(2));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(6) whether the waste contains free liquids;	Y	See parent note for PC 2.4.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(7) the waste stream name;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(8) the unique waste stream identifier;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(9) the waste stream generation location (e.g. building and room number); and	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(10) a detailed description of the waste stream generation process that includes all relevant material inputs or other information that identifies the chemical content and physical form of the waste.	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	The Permittees shall characterize waste streams by using current Department-approved sampling and analysis methods, acceptable knowledge, or a combination of the two. When acceptable knowledge is insufficient to fully characterize a waste stream, the Permittees shall utilize sampling and analysis to complete that characterization.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	The Permittees shall maintain all waste characterization information in the Facility Operating Record. For records that contain waste characterization information concerning any hazardous or mixed wastes managed under this Permit, which are required to be archived elsewhere at the Facility (e.g., laboratory record books), the Permittees shall maintain a traceable identifier to this documentation to facilitate access by the Permittees and the Department (see 40 CFR § 270.32(b)(2)). The Permittees shall maintain waste characterization documentation in accordance with the record retention requirements in Permit Section 2.12.2.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall perform all sampling and analytical procedures used for waste characterization in accordance with Department-approved laboratory analytical methods, including the most recent version of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (U.S. EPA Publication SW-846) and Tables C-16, C-17, and C-18 in Attachment C (Waste Analysis Plan). The Permittees shall ensure that samples collected and analyzed for waste characterization are representative of the chemical composition of the entire volume of the waste stream.	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall ensure that procedures used to collect a representative sample of a waste stream preserve its original physical form and composition and ensure prevention of contamination or changes in concentration of the constituents to be analyzed.	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall implement a quality assurance and quality control (QA/QC) program to ensure that sample collection and analytical procedures used to support waste characterization required under this Permit are technically accurate and statistically valid. This QA/QC program must comply with the requirements in SW-846. The Permittees shall identify and perform the appropriate number of control samples associated with each sample collected (e.g., trip and field blanks, field duplicates, field spikes). The Permittees shall maintain a record in the Facility Operating Record of all QA/QC procedures utilized in the sampling and analysis of a waste stream.	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	When performing laboratory analysis, the Permittees, or a laboratory under contract to the Permittees, shall analyze the appropriate number of method blanks, laboratory duplicates, and laboratory control samples to assess the quality of the data resulting from laboratory analytical programs.	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	If the Permittees use an independent contract laboratory to conduct waste analyses, the Permittees shall require the analytical laboratory to conduct such analysis in accordance with the waste analysis conditions set forth in Permit Part 2.4 and Attachment C (Waste Analysis Plan), Section C.3 (Characterization Procedures). Copies of contracts or other documentation identifying the independent laboratory and showing that the analytical laboratory is required to operate in accordance with the waste analysis conditions shall be kept in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	Y	All analytical sampling data is done through department approved labs and methods.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees may propose to the Department an analytical method that deviates from Department-approved methods. The Permittees must submit a written request to the Department for review and approval 90 days prior to using the proposed sampling or analytical procedure. This request must include the following information:	NA	There are no alternative methods performed at LANL.
2.4.2: Sampling and Analysis for Hazardous Wastes	(1) a statement of the need and justification for the proposed action;	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(2) a full description of the alternative method (i.e., a standard operating procedure) including all procedural steps and equipment used in the method;	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(3) a description of the types of wastes, or waste matrices, for which the proposed method may be used;	NA	See parent note for PC 2.4.2 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	(4) comparative analytical data obtained from using the proposed method with those obtained from using the Department-approved relevant or corresponding methods in Attachment C (Waste Analysis Plan);	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(5) a demonstration that the proposed analytical procedure is equal to, or superior to, the corresponding methods in Attachment C (Waste Analysis Plan) in terms of its sensitivity, accuracy, and precision (i.e., reproducibility);	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(6) an assessment of any factors which may interfere with or limit the use of the proposed method; and	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	(7) a description of the QA/QC procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method.	NA	See parent note for PC 2.4.2 above.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall obtain written approval from the Department of the alternative method before substituting it for an approved method under this Permit, except that a change requested to conform with agency guidance or regulations shall be a Class 1 permit modification (see 40 CFR § 270.42 Appendix 1).	Y	All analytical sampling data is done through department approved labs and methods.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.3: Acceptable Knowledge</p>	<p>The Permittees may use acceptable knowledge to characterize waste in lieu of, or to supplement, sampling and analysis. The Permittees shall document all uses of acceptable knowledge, and include in the acceptable knowledge documentation all of the background information assembled and used in the characterization process relevant to the decision to use acceptable knowledge (see 40 CFR § 270.32(b)(2)). The record must document the resolution of any data discrepancies between different sources of acceptable knowledge. Acceptable knowledge documentation must be maintained in an auditable form in the Facility Operating Record. The Permittees shall assign a traceable identifier to this documentation to facilitate both access to this information and its verification by the Permittees and the Department.</p>	<p>Y</p>	<p>Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.5: Treatment-Derived Waste	The Permittees shall characterize treatment-derived wastes generated both on-site and off-site by determining whether the treatment residues meet the applicable treatment standard in accordance with 40 CFR § 268.7(b), which is incorporated herein by reference, unless the Permittees have documented that the purpose of the treatment process is not to attain the applicable treatment standard. The Permittees shall ensure adherence to notification and recordkeeping requirements specified at 40 CFR § 268.7(b)(3)(ii). If the waste remains a hazardous waste, the Permittees shall further characterize it in compliance with the applicable requirements of Permit Section 2.4.1.	Y	Treatment derived waste is handled as low-level mixed waste, as verified in discussions with POC during on-site walkthrough.
2.4.7: Waste Characterization Review	The Permittees shall ensure that the initial characterization of any hazardous waste stream managed under this Permit is reviewed or repeated to verify that the characterization is accurate and up to date (see 40 CFR § 264.13(b)(4)). The Permittees shall document this review in the Facility Operating Record. The Permittees shall perform the following:	Y	WCATs system requires annual verification of waste stream profiles, which includes characterization records (LANL 2108g).
2.4.7: Waste Characterization Review	(1) Annually reevaluate all hazardous waste streams generated to verify the accuracy of initial and subsequent characterization results. The annual reevaluation shall be required no later than one year from the date of initial characterization of the hazardous waste stream or one year from the last annual reevaluation;	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.7: Waste Characterization Review	(2) Recharacterize hazardous wastes whenever there is a change in the waste-generating processes which includes a change in the status of the waste for purposes of Land Disposal Restrictions or when analytical results indicate a change in the waste stream;	Y	See parent note for PC 2.4.7 above.
2.4.7: Waste Characterization Review	(3) Annually verify the waste characterization of one percent of hazardous waste streams characterized solely by acceptable knowledge (see 40 CFR §§ 264.13(b)(4) and 270.32(b)(2)). Such waste characterization verification shall be performed by quantitative chemical analyses appropriate for the waste as specified in Attachment C (Waste Analysis Plan). The one percent of wastes whose characterization is to be verified shall be determined in relation to the total number of unique waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year. The waste streams whose characterization is to be verified shall be chosen without further bias and the selection procedure shall be documented in the Facility Operating Record. Wastes not required to undergo this annual verification and not to be counted toward the total number of wastes managed in the previous year include mixed transuranic wastes, hazardous debris, and hazardous wastes that are hazardous only because they are listed at 40 CFR Part 261, Subpart D; and	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.7: Waste Characterization Review	(4) Recharacterize a hazardous waste stream whenever the Permittees are notified by a receiving off-site facility that the characterization of a hazardous waste they obtained from the Permittees' Facility does not match a pre-approved waste analysis certification or accompanying waste manifest or shipping paper. The Permittees shall notify the Department in writing within three days of their receipt of the notice of the discrepancy from a receiving facility.	Y	No waste manifest discrepancies identified from shipments originating at TA-55.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall characterize hazardous wastes managed in containers and tanks to determine the average volatile organic compound (VOC) concentration relative to 500 parts per million by weight (ppmw) at the point of waste origination in compliance with 40 CFR Part 264, Subpart CC. The Permittees shall determine the average VOC concentration either by utilizing acceptable knowledge or by using the procedures specified in 40 CFR § 264.1083(a), which is incorporated herein by reference. The Permittees shall review and update this determination at least once every 12 months following the date of the initial determination in compliance with 40 CFR § 264.1082(c)(1), which is incorporated herein by reference.	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to control air pollutant emissions from a container or tank and thus shall not be required to characterize the waste for its average VOC concentration in the following circumstances:	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(1) if the container or tank stores mixed waste (see 40 CFR § 264.1080(b)(6));	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(2) if the container storing the wastes has a total capacity of less than 0.1 cubic meter (approximately 26 gallons)(see 40 CFR § 264.1080(b)(2)); or	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(3) if a tank has stopped receiving hazardous waste and is undergoing closure (see 40 CFR § 264.1080(b)(3)).	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to determine the average VOC concentration of wastes if control of air pollution emissions from containers is achieved utilizing the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b), which is incorporated herein by reference.	NA	No wastes requiring emission controls observed at TA-54, except for mixed wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall ensure that before any hazardous waste is managed at a permitted unit a determination has been made as to whether the waste has to be treated before it can be land disposed (see 40 CFR § 268.7(a)). The Permittees must characterize waste designated to be disposed of at the Waste Isolation Pilot Plant (WIPP) to determine whether it is subject to the land disposal prohibitions, except that such waste is not required to be characterized to determine all applicable underlying hazardous constituents listed in 40 CFR § 268.48.</p>	<p>Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When using laboratory analysis as part of a hazardous waste characterization pursuant to Attachment C (Waste Analysis Plan), Section C.3.1.2, the Permittees shall require the laboratory to report concentrations of all hazardous constituents listed at 40 CFR § 268.48, Table UTS that the analytical test method used is capable of measuring, as specified at the most recent version of the U.S. EPA's Test Methods for Evaluating Solid Wastes (SW-846). When performing this laboratory analysis the Permittees will not be required to perform sample preparation or determinative procedures other than those performed routinely for the target analytes.</p>	<p>Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When performing or obtaining laboratory analysis to demonstrate that a waste meets its applicable treatment standard concentrations specified in 40 CFR § 268.40, Treatment Standards for Hazardous Wastes, in compliance with 40 CFR §§ 268.7(a) and (b), which are incorporated herein by reference, the Permittees shall ensure that analytical method practical quantification limits are not higher than the applicable treatment standard (see 40 CFR § 270.32(b)).</p>	<p>Y</p>	<p>All analytical sampling data is done through department approved labs and methods.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall characterize treatment-derived wastes by determining whether the waste is a hazardous or mixed waste in compliance with the requirements in Permit Section 2.4.1 and in compliance with the notification and recordkeeping requirements specified in 40 CFR § 268.7(b)(3)(ii), Treatment Facility Paperwork Requirements Table, which is incorporated herein by reference.</p>	<p>Y</p>	<p>All treatment-derived waste utilized in glovebox treatment is characterized as Low-Level Waste, as verified in interview with on-site POCs during walkthrough of treatment process.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions	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.	Y	All treatment-derived waste utilized in glovebox treatment is characterized as Low-Level Waste, as verified in interview with on-site POCs during walkthrough of treatment process.
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:	Y	All entries to TA-55 are gated and monitored.
2.5: SECURITY	(1) 24-hour surveillance system continuously monitoring and controlling entry into the permitted units at the Facility; or	Y	See parent note for PC 2.5 above.
2.5: SECURITY	(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).	Y	See parent note for PC 2.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	Signage verified during on-site assessment.
2.5.1: Warning Signs	DANGER – UNAUTHORIZED PERSONNEL KEEP OUT (PELIGRO – SE PROHIBE LA ENTRADA A PERSONAS NO AUTORIZADAS)	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	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).	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	The Permittees shall post signs requested by Santa Clara Pueblo (Kha-'Po). The Permittees shall include on the signs the following warning:	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	Wi-i ts'uni pi' – (DO NOT ENTER)	NA	See parent note for PC 2.5.1 above.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall inspect all the permitted units for malfunctions, deterioration, operator errors, and discharges which may cause or may lead to:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	(1) a release of hazardous constituents to the environment; or	NA	See parent note for PC 2.6. above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6: GENERAL INSPECTION REQUIREMENTS	(2) a threat to human health. (see 40 CFR § 264.15(a))	NA	See parent note for PC 2.6. above.
2.6: GENERAL INSPECTION REQUIREMENTS	Inspections shall be conducted of all waste management structures, base materials, containers, monitoring equipment, safety and emergency equipment, security devices, and operating equipment that are important in preventing, detecting, and responding to environmental or human health hazards associated with hazardous wastes (see 40 CFR § 264.15(b)(1)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall implement the inspection program for the permitted units in compliance with the operating schedule, recordkeeping, and response action commitments in Attachment E (Inspection Plan).	Y	See parent note for PC 2.6 above.
2.6.1: Inspection Schedule	The Permittees shall conduct inspections to identify problems in time to correct them before they harm human health or the environment (see 40 CFR § 264.15(a)). The Permittees shall inspect the permitted units and all associated structures and equipment, in compliance with the inspection schedules contained in Attachment E (Inspection Plan).	Y	See parent note for PC 2.6 above.
2.6.1: Inspection Schedule	The Permittees shall inspect areas subject to spills, such as loading and unloading areas, daily when in use (see 40 CFR § 264.15(b)(4)).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.6.2: Repair of Equipment and Structures</p>	<p>The Permittees shall remedy any deterioration or malfunction of equipment or structures discovered during an inspection which may lead to an environmental or human health hazard. The Permittees shall mitigate such deterioration or malfunction within 24 hours of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (see 40 CFR § 264.15(c)).</p>	<p>Y</p>	<p>No active "Action Requests" for TA-55</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	The Permittees shall record the results of inspections on the Hazardous Waste Facility Inspection Record Form in Attachment E (Inspection Plan) for each inspection conducted in accordance with Permit Section 2.6 and Attachment E. At a minimum, the Permittees shall produce a handwritten record of the date and time of the inspection, an identification of the permitted unit and associated structures or equipment, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions taken (see 40 CFR § 264.15(d)). The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and errors are crossed out with a single line, initialed, and dated by the individual making the correction. The Permittees shall maintain the inspection logs and records in a paper format. The Permittees may transfer the inspection logs and records into an electronic format acceptable to the Department. The paper format shall be retained for the period of time specified in Permit Section 2.12.2.	Y	See parent note for PC 2.6 above.
2.6.3: Inspection Logs and Records	The Permittees shall record the following observations or actions in the Facility Operating Record:	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	(1) the results of any preventive maintenance activities including, but not limited to, maintenance on floors, secondary containment structures, unit drainage structures, and fire protection equipment at a permitted unit;	Y	No current preventive maintenance activities requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(2) any malfunctions and deterioration of such structures or equipment;	Y	No current malfunctions or deteriorations requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(3) any errors affecting waste containment or compliance with this Permit;	Y	No current waste containment issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(4) the locations, dimensions, and repairs of all identified cracks or gaps in floors or base materials;	Y	No current flooring issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(5) any discharges of hazardous waste, hazardous constituents, or fire suppression systems at a permitted unit; and	Y	No records of release or use of fire suppression system.
2.6.3: Inspection Logs and Records	(6) any occurrences that might cause or exacerbate contamination of a permitted unit.	Y	No record of contamination of a permitted unit.
2.6.3: Inspection Logs and Records	The Permittees shall maintain inspection logs in the Facility Operating Record as specified in Permit Section 2.12.2.	Y	Inspection logs maintained onsite, as verified when reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.7: PERSONNEL TRAINING	The Permittees shall ensure that all Facility personnel who are involved in hazardous waste management activities regulated under this Permit successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is incorporated herein by reference, as well as the training requirements in Attachment F (Personnel Training Plan).	Y	Reviewed training from a representative sample of waste handlers at the site.
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, 22, 24, and 38 in Permit Attachment N (Figures). At TA-63, the Permittees shall ensure that containers holding ignitable or reactive waste are located at least 15 meters from the TWF fence line, as shown in Figure 55 in Permit attachment N (Figures) (see 40 CFR §§ 264.176 and 270.32(b)(2)).	Y	Verified during on-site review that ignitable, reactive, and incompatible wastes are: -separated from sources of ignition -segregated by dike, berm, wall, or other device from incompatible wastes -15 meters from facility boundary -stored in containers that have been decontaminated or have not previously held incompatible materials
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	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:	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and	Y	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(5) a threat to human health or the environment.	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(1) ensure there are no sources of open flames in, on, or around the container or tank;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(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;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(3) maintain adequate clearance around fire hydrants at permitted units;	Y	Verified there were no impediments from hydrant access.
2.8.1: Ignitable and Reactive Waste Precautions	(4) use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive wastes;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(5) ensure appropriate lightning protection is provided for all storage and treatment units;	Y	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(6) perform ongoing inspection, testing, and maintenance of fire protection equipment to determine appropriate test criteria and preventative maintenance activities;	Y	Verified inspection reports evaluated fire protection equipment.
2.8.1: Ignitable and Reactive Waste Precautions	(7) confine smoking and open flames to designated areas that are a minimum of 50 feet from areas where ignitable or reactive wastes are handled;	Y	Verified no smoking was allowed in permitted units.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.1: Ignitable and Reactive Waste Precautions	(8) stack containers of ignitable and reactive wastes no more than 2 drums high to comply with the National Fire Protection Association's (NFPA) Flammable and Combustible Liquids Code; and	Y	Verified ignitable and reactive wastes were stored no more than 2 drums high.
2.8.1: Ignitable and Reactive Waste Precautions	(9) ensure that each permitted unit's fire suppression system is compatible with the hazardous waste being stored or treated at the permitted unit.	Y	Verified fire suppression systems were adequate for wastes stored.
2.8.1: Ignitable and Reactive Waste Precautions	The Permittees shall assume that all drums with volume capacities between 55 and 110 gallons that hold mixed transuranic wastes and that are not vented, and standard waste boxes that hold mixed transuranic waste and are not vented, contain hydrogen gas and the associated wastes are subject to the conditions of this Permit Section (2.8.1).	NA	Verified all mixed transuranic (MTRU) drums are vented.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers must be separated from the other materials (or waste) or is protected from them by means of a dike, berm, wall, or other device not to include the container, in order to, in the event of leakage from containers under conditions normally incident to storage, prevent the commingling of the incompatible wastes or materials (see 40 CFR § 264.177(c)).	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored within or on the same secondary containment structure.	Y	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored so that a release or spill of these wastes might commingle in a fire suppression water holding area or tank.	Y	All wastes containers and containment systems were evaluated to ensure no incompatible wastes would commingle in fire suppression water holding area or tank.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that all waste and materials are segregated and stored in accordance with the Department of Transportation's (DOT) compatibility groupings or classes contained in 49 CFR § 177.848 (see 40 CFR § 270.32(b)(2)).	Y	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall not store cyanides and cyanide mixtures or solutions with acids if a mixture of the materials could generate hydrogen cyanide. The Permittees shall not store Class 8 (corrosive) liquids above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) wastes except when it is known that the mixture of the wastes could not cause a fire or a dangerous evolution of heat or gas.	Y	Verified that cyanides are segregated from acids.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that hazardous wastes are not placed in an unwashed container (see 40 CFR § 264.177(b)) or tank (see 40 CFR § 264.199(b)) that previously held an incompatible waste or material.	Y	All containers are either new or washed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.10: PREPAREDNESS AND PREVENTION</p>	<p>The Permittees shall maintain and operate each permitted unit in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituent to the air, soil, or surface water that could threaten human health or the environment (see 40 CFR § 264.31). In addition to the general preparedness and prevention requirements identified here, the Permittees shall comply with the TA-specific preparedness and prevention requirements and shall maintain the equipment identified in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan)</p>	<p align="center">Y</p>	<p>All permit required controls were verified as operational and in good condition during on-site walkthrough.</p>
<p>2.10.1: Required Equipment</p>	<p>At a minimum, the Permittees shall maintain at the Facility and at each permitted unit the internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment listed in the tables in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan) (see 40 CFR § 264.32(b)(2)). The Permittees shall ensure that any changes to the emergency equipment lists adhere to the permit modification requirements at 40 CFR §§ 270.41 through 270.43.</p>	<p align="center">Y</p>	<p>Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.1: Required Equipment	The Permittees shall maintain spill kits at each permitted container storage and tank unit as specified in Attachment D (Contingency Plan). These spill kits shall be capable of mitigating small containable spills of acidic, caustic, inflammable, and otherwise hazardous waste present at the unit. For larger spills, the Permittees shall have plugging and diking equipment, siphon pumps, and loaders readily available at the Facility.	Y	Verified adequate spill kits were maintained onsite.
2.10.1: Required Equipment	The Permittees shall ensure that there is adequate water pressure and volume available to each permitted unit to provide for fire suppression (see 40 CFR § 264.32(d)).	NA	Did not evaluate design of facility.
2.10.1: Required Equipment	The Permittees shall operate and maintain the area-wide environmental monitoring network as specified in Section D.7.3 of Attachment D (Contingency Plan).	Y	Reviewed records of area-wide environmental monitoring network.
2.10.1: Required Equipment	At permitted units where equipment is necessary to mitigate the effects of a power outage, the Permittees shall maintain batteries, generators, or some other form of backup power supply capable of operating equipment including evacuation alarms, emergency communication equipment, automatic fire suppression systems, and emergency lights. (See 40 CFR §§ 270.14(b)(8)(iv) and 270.32(b)(2))	Y	Verified back-up power equipment was available.
2.10.1: Required Equipment	The Permittees shall ensure that it is possible to provide fuel to backup generators under adverse conditions.	Y	Verified back-up power equipment was available.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.2: Testing and Maintenance of Equipment	The Permittees shall test the equipment listed in Section E.1.1 of Attachment E (Inspection Plan) in accordance with the schedule identified in Attachment E to ensure its functionality in the event of an emergency. The Permittees shall maintain the equipment specified in Permit Section 2.10.1 to ensure its proper operation in the event of an emergency (see 40 CFR § 264.33). This equipment shall undergo inspection in accordance with Attachment E (Inspection Plan). The Permittees shall document such inspections in the Facility Operating Record in accordance with this Permit Part.	Y	Vault, storage tank systems, and stabilization unit inspection reports were reviewed during on-site walkthrough.
2.10.2: Testing and Maintenance of Equipment	If testing or inspections identify any missing or nonfunctioning communication equipment, alarm system, fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired or provide substitute equipment. The Permittees shall ensure that employees and contractors working in the area are notified of the presence of substitute equipment and, if necessary, provide them with training in its use (see 40 CFR § 270.32(b)(2)). The Permittees shall document in the Facility Operating Record instances of such notifications and trainings. The Permittees shall ensure that malfunctioning equipment is clearly marked as out of use and that the location of the substitute equipment is clearly posted on or adjacent to the faulty equipment (see 40 CFR §§ 264.31 and 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.3: Access to Communications or Alarm System	Whenever an employee is present at a permitted unit and the unit contains hazardous waste, the Permittees shall ensure that all personnel at the unit have immediate access to an internal alarm or emergency communication device either directly or through visual or voice contact with another employee (see 40 CFR § 264.34(a)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.3: Access to Communications or Alarm System	The Permittees shall ensure that any employee working alone at a permitted unit is capable of summoning external emergency assistance and shall have immediate access to a device, such as a hand-held two-way radio, a cell phone, or a landline telephone (see 40 CFR § 264.34(b)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.4: Spill Response	The Permittees shall ensure that spills of hazardous wastes, including small localized spills that can be managed without the assistance of emergency management personnel, are managed utilizing, at a minimum, the following procedures:	Y	No active spills were identified during time of review, but spill response procedures were reviewed.
2.10.4: Spill Response	(1) isolate the immediate area and deny entry to all unauthorized personnel;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(2) contain the spill (e.g., spreading sorbents, forming temporary dikes);	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(3) define the nature and extent of the spilled waste;	Y	See note for parent PC 2.10.4 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.4: Spill Response	(4) package the spilled waste and contaminated materials in containers; and	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(5) decontaminate the area, all clean-up equipment, and personnel.	Y	See note for parent PC 2.10.4 above.
Permit Section 3			
3.1: GENERAL CONDITIONS	(1) The Permittees shall store and otherwise manage containers of hazardous waste in accordance with 40 CFR Part 264, Subpart I, which is incorporated herein by reference, and Attachment A (Technical Area Unit Descriptions).	Y	Verified during on-site review that containers were stored in accordance with site-specific information in Attachment A and Subpart I: Use and Management of Containers.
3.1: GENERAL CONDITIONS	(2) The Permittees shall only store hazardous waste containers at the permitted units identified as utilizing waste process code S01 and specified in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility). The Permittees are authorized to store only those wastes identified by EPA Hazardous Waste Numbers (waste codes) listed in Attachment B (Part A Application) and identified as utilizing waste process code S01. The Permittees shall not store containers of hazardous waste in excess of the maximum capacities for each permitted container storage unit (CSU) identified in Attachment J, Table J-1. However, for purposes of compliance with secondary containment requirements, the holding of a hazardous waste container within a permitted unit for a period not to exceed 24 hours, for transportation, treatment, characterization, or packaging, shall not be deemed storage.	Y	Verified wastes stored in accordance with permit application and in approved quantities.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.1: GENERAL CONDITIONS	(3) The Permittees shall ensure that the figures in Attachment N (Figures) and in the closure plans in Attachment G accurately reflect the location of all buildings and structures, regardless of whether they manage hazardous waste, at hazardous waste management units. The Permittees may change the location of a building or structure at a hazardous waste management unit only in accordance with a Class 1 permit modification requirements at 40 CFR § 270.42(a). Any change to the location of a building or structure within which hazardous waste is managed shall be a Class 1 modification with prior approval of the Department (see 40 CFR § 270.42(a)(2)). Any change to the location of a building or structure within which hazardous waste has not been managed shall be a Class 1 modification without prior approval (see 40 CFR § 270.42(a)(1)).	Y	Reviewed figures while walking sites.
3.2: CONDITION OF CONTAINERS	The Permittees shall ensure that all containers used to store hazardous wastes subject to this Permit are in good condition (e.g., no severe rusting or apparent structural defects) in accordance with 40 CFR § 264.171, which is incorporated herein by reference. If a container is not in good condition or begins to leak, the Permittees shall transfer the waste from such a container into a container that is in good condition within 24 hours of discovery of the problem, and in accordance with 40 CFR § 264.171.	Y	All containers in permitted units verified as being in good condition.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.3: ACCEPTABLE STORAGE CONTAINERS	The Permittees shall only use containers that comply with 40 CFR Part 264 Subpart I (Use and Management of Containers) for storage of hazardous waste at permitted units. Prior to shipment of hazardous waste, containers must comply with Department of Transportation (DOT) shipping container regulations (see 49 CFR § 173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR § 178 - Specifications for Packaging).	Y	All containers used to store wastes were compatible with 40 CFR Part 264 Subpart I. Containers staged for shipment complied with DOT requirements.
3.3: ACCEPTABLE STORAGE CONTAINERS	Solid, oversize items (e.g., glovebox, glovebox parts, vacuum pumps, tanks, duct work, piping, HEPA filters) contaminated with hazardous wastes that cannot be containerized in the waste containers referenced in the previous paragraph shall be subject to this Permit Part. These items shall be wrapped in plastic with a minimum of two layers of plastic to prevent dispersion of contaminating material.	NA	No waste oversize items stored at facility.
3.4: COMPATIBILITY OF WASTE WITH CONTAINERS	The Permittees shall use containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired (see 40 CFR § 264.172).	Y	All waste containers verified as compatible with material being stored.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5: MANAGEMENT OF CONTAINERS	(1) The Permittees shall ensure that all containers are kept closed during storage except when waste is added to or removed from the container or when a container's contents need to be repackaged (see 40 CFR § 264.173(a)). The Permittees shall not open, handle, or store a container holding hazardous waste in a manner that may rupture the container or cause the container to leak (see 40 CFR § 264.173(b)).	NA	Containers stored at site are always kept closed.
3.5: MANAGEMENT OF CONTAINERS	(2) The Permittees shall establish and maintain lines of demarcation which identify the boundaries of all permitted CSUs. The line may be identified by paint, tape, or other permanent, visible marking on the floor or base material (see 40 CFR § 270.32(b)(2)). Permanent fences marking the unit boundary, or rooms or buildings whose walls constitute the boundary of the permitted units, satisfy this requirement.	Y	Painted boundaries were reviewed while onsite. These boundaries are part of the weekly inspections.
3.5: MANAGEMENT OF CONTAINERS	(3) The Permittees shall ensure that drums stored in movable buildings (e.g., modular buildings, transporters) with non-grated floors are stored on wheeled drum dollies, steel pallets, or are otherwise elevated.	NA	No movable buildings used to store wastes.
3.5: MANAGEMENT OF CONTAINERS	(4) The Permittees shall ensure that when waste containers are moved during storage, the location of each hazardous waste and the quantity at each location is documented in accordance with Permit Section 2.12 (see 40 CFR § 264.73(b)(2)).	Y	Reviewers were provided with facility operating record, which they verified during walk through on a representative sample of drums.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(1) The Permittees shall maintain adequate aisle space at all times to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment within the permitted units. Additionally, emergency egress aisles with a minimum aisle space of two feet must be maintained at all personnel doors (see 40 CFR § 264.35).	Y	Aisle spaces were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(2) The Permittees are authorized to stack containers greater than or equal to 30 gallons of hazardous waste to no more than three containers high. Stacked containers of this volume shall be palletized, and each layer shall be bound together (see 40 CFR § 270.32(b)(2)).	Y	Stacked containers were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(3) The Permittees shall ensure that hazardous waste containers stored outdoors are not stored within five feet of the perimeter (i.e., permitted unit boundary) fence, within five feet of any permanent structure, or within five feet of a paved or unpaved roadway.	Y	Outdoor storage verified as being greater than 5 feet of perimeter fence.
3.5.1: Storage Configuration and Minimum Aisle Space	(4) The Permittees shall store hazardous waste gas cylinders in cylinder racks, baskets, or on specially constructed pallets that provide support and restraint.	NA	No permitted storage of HW gas cylinders.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(5) The Permittees shall ensure that hazardous waste containers that are stored outdoors and are not being actively managed are protected from contact with precipitation using weather protective equipment (e.g., containment shell, secured tarp) or are protected by the design of the equipment (e.g., transportainer, Transuranic Waste Package Transporter II container) (see 40 CFR § 270.32(b)(2)).	Y	Outdoor storage areas verified as protected from weather.
3.6: WASTE CONTAINER LABELING	(1) The Permittees shall ensure that all containers storing hazardous waste have a “Hazardous Waste” label (see 40 CFR § 262.34(a)(3)) that lists the generator’s name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)). All containers holding mixed waste shall be labeled “Radioactive.” Records for all containers will be maintained in accordance with Permit Section 2.12.	Y	All wastes stored at TA-55 were verified as having proper labels.
3.6: WASTE CONTAINER LABELING	(2) The Permittees shall ensure that containers holding free liquids have a “free liquids” label. The free liquids reference may be included on a label identifying other waste characteristics (see 40 CFR § 270.32(b)(2)).	Y	All wastes containing free liquids properly labeled.
3.7: CONTAINMENT SYSTEMS	The Permittees shall store containers of hazardous waste in a manner that prevents contact with any accumulated liquids (see 40 CFR § 264.175(b)(2)).	Y	Verified that no containers are stored on the ground during on-site walkthrough.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(1) The Permittees shall maintain secondary containment systems in all permitted units used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference. The Permittees shall maintain controls to prevent run-on into the permitted unit. These controls shall consist of ground features such as berms and sloping.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.7.1: Containers with Free Liquids</p>	<p>(2) The Permittees shall remove spilled or leaked waste and accumulated precipitation from sumps or secondary containment systems. If the sumps or secondary containment system are the sole means of secondary containment the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in liquid form within 24 hours of detection or immediately if necessary to prevent overflow of the secondary containment system. Otherwise, the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in any form in as timely a manner as is necessary to prevent overflow of the containment system and shall, while the system’s capacity is diminished, measure the system daily to demonstrate that the system retains sufficient capacity to contain 10% of the volume of containers or the volume of the largest container holding free liquids, whichever is greater. (see 40 CFR §§ 264.175(b)(4) and (5)). The Permittees shall document this measurement in the Facility Operating Record. Requests for extension of time for any deadline under this subparagraph may be made by e-mail.</p>	<p>Y</p>	<p>No spilled or liquid wastes identified in sumps or secondary containment systems.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(3) The Permittees shall maintain the base of secondary containment systems to ensure they are impervious in order to contain leaks, spills, and/or accumulated precipitation until the collected liquids are detected and removed. The Permittees shall ensure that the secondary containment system have adequate structural strength to withstand the stresses of daily operations (see 40 CFR § 264.175(b)(1)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(4) If a coating or sealant is used as a component of a secondary containment system, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating the Permittees' installation and maintenance procedures were in accordance with the manufacturer's specifications. If the base of the containment unit has expansion or construction joints, the Permittees shall install and maintain chemically resistant water stops, which are embedded in the concrete, or equivalent external systems (e.g. sealant systems) (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(5) If a flexible liner is used as a secondary containment system after July 1, 2014, the Permittees shall maintain documentation in the Facility Operating Record that the flexible liner was installed and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating that the Permittees' installation and maintenance procedures have been conducted in accordance with the manufacturer's specifications (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(6) Unless waste is removed or another form of secondary containment is provided, the Permittees shall repair any damage to a secondary containment system within 15 days of detecting the problem. The Permittees shall perform any concrete or asphalt repair using an appropriate repair method (e.g., ACI standards or manufacturer's recommendations), which will prevent future damage at the location (see 40 CFR §§ 264.15(c), 270.32(b)(2)). The Permittees shall apply coatings or sealants, if applicable, to the repaired area before waste storage activities resume. The Permittees must record any damage or repair to containment systems in the inspection logs required by Permit Section 2.6.3.	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(7) The Permittees shall ensure that the number of 55-gallon drums stored on a secondary containment pallet does not exceed the design capacity of the pallet.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(8) The Permittees shall ensure that all metal secondary containment pallets have a chemically-resistant coating equivalent to urethane. The Permittees shall maintain the chemical-resistant coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	All secondary containment systems were verified as in compliance.
3.7.2: Containers without Free Liquids	(1) For container storage areas that will store only wastes without free liquids (see Attachment J (Hazardous Wastes Management Units), Table J-1 (Active Portion of the Facility)), the Permittees shall ensure that:	Y	See subsequent two items below.
3.7.2: Containers without Free Liquids	a. the storage areas are sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation or other liquids (see 40 CFR § 264.175(c)(1)); or	Y	Site designed and verified to eliminate run-on and run-off of precipitation.
3.7.2: Containers without Free Liquids	b. the containers are elevated or otherwise protected from contact with accumulated liquids (see 40 CFR § 264.175(c)(2)).	Y	All containers verified as not being stored on the ground.
3.7.2: Containers without Free Liquids	(2) The Permittees shall comply with the secondary containment requirements for hazardous wastes that do not contain free liquids and have the following waste codes: F020, F021, F022, F023, F026 and F027 (see 40 CFR § 264.175(d)(1)).	Y	Verified these wastes were in secondary containment.
3.8: INSPECTION SCHEDULES AND PROCEDURES	(1) The Permittees shall inspect the permitted CSUs at least weekly for evidence of leaks or deterioration of the containment system by corrosion, cracking, differential settlement or other factors (see 40 CFR § 264.174).	Y	Inspection records were reviewed. All records for FY18 were reviewed and a representative sample for FY17 were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.8: INSPECTION SCHEDULES AND PROCEDURES	(2) The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (see 40 CFR §§ 264.174 and 270.32(b)(2)).	Y	During review, all containers and labels were stored in a manner that allowed for inspection.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(1) The Permittees shall control air pollutant emissions from each hazardous waste container at a permitted unit in accordance with the applicable regulations in 40 CFR Part 264 Subpart CC. The Permittees shall also manage hazardous wastes subject to emission controls in accordance with Attachment E (Inspection Plan).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(2) The Permittees shall not be required to control air pollutant emissions from a container in accordance with the exemptions in 40 CFR §§ 264.1080(b)(1) through (8).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(3) If the Permittees claim an exemption from air pollution emission controls due to a container holding radioactive mixed waste, the Permittees shall clearly label the container in accordance with Permit Section 3.6.	Y	All mixed waste containers are fitted with carbon filters and properly labeled.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(4) A suitable method to control container air pollution emissions is the utilization of the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b). This emission control method is met if the containers adhere to the following requirements:	Y	Containers were evaluated to determine if emission systems were required.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.9: VOLATILE ORGANIC AIR EMISSIONS	a. the containers have a capacity of greater than 0.1 cubic meters and less than 0.46 cubic meters (approximately 119 gallons);	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	b. the containers meet U.S. Department of Transportation (DOT) specifications under 49 CFR Part 178;	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	c. the containers are kept closed during storage; and	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	d. the containers are inspected weekly to ensure lids and openings are securely closed and there is no possibility of air emissions (see 40 CFR §§ 264.1086(c)(3) and (4)).	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(5) All containers that are not exempted under 40 CFR 264, Subpart CC, shall be subject to Container Level 1 requirements, except that the Permittees shall identify containers subject to Container Level 2 controls on a list in the Facility Operating Record.	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(6) Containers may be opened for the purpose of adding or removing waste or as otherwise allowed at 40 CFR § 264.1086(c)(3), which is incorporated herein by reference.	Y	Containers were evaluated to determine if emission systems were required.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(7) The Permittees shall characterize hazardous wastes subject to emission controls in accordance with Permit Section 2.4 (Waste Analysis) and Attachment C (Waste Analysis Plan).	Y	Containers were evaluated to determine if emission systems were required.

C.1.3.6 TA-63 Permitted Storage Checklist

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
Permit Section 3			
3.14.1: General Operating Conditions	The Permittees shall ensure that storage and characterization of hazardous waste in containers at the Transuranic Waste Facility (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 includes 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.	Y	There was no drum storage outside of permitted areas TA-63
3.14.1: General Operating Conditions	(1) The Permittees shall store all hazardous waste containers known or suspected of holding free liquids on secondary containment pallets. If containers with free liquid are stored in the characterization trailers without secondary containment pallets for longer than 24 hours, the Permittees shall follow the reporting conditions of Permit Section 1.9.14, Other Noncompliance.	NA	No wastes holding free liquids were stored at TA-63 during review.
3.14.1: General Operating Conditions	(2) The Permittees shall not store containers with ignitable or reactive waste (E.P.A. Hazardous Waste Numbers D001 or D003) within 15 meters of the permitted unit's security barrier system shown in Figure 55 (see 40 CFR §264.176 and §270.32(b)(2)).	NA	No ignitable wastes stored at TA-63 during review.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.1: General Operating Conditions	(3) The Permittees shall only accept TRU and mixed TRU waste containers at the TWF if they are closed and equipped with filter vents approved for containers destined for the Waste Isolation Pilot Plant. The Permittees shall not open waste containers during storage or characterization at the TWF, although the Permittees may replace filter vents on TRU and mixed TRU waste containers if necessary (see 40 CFR §270.32(b)(2)).	Y	All containers had proper filter device.
3.14.1: General Operating Conditions	(4) The Permittees shall not accept the following waste for storage at the TWF:	Y	See subsequent 3 items for compliance.
3.14.1: General Operating Conditions	a. Remote-handled TRU waste	Y	No remote-handled TRU waste stored at TA-63.
3.14.1: General Operating Conditions	b. Waste containers that are known or suspected to contain greater than 1% free liquid, as defined in 40 CFR § 260.10	Y	No containers with free liquids stored at TA-63.
3.14.1: General Operating Conditions	c. Mixed waste generated prior to December 31, 2015 (see 40 CFR §270.32(b)(2))	Y	No wastes generated prior to December 31, 2015 stored here. Currently applying to have this restriction removed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.2: Retention Basin	The Permittees shall inspect the retention basin as required by Permit Section 2.6, General Inspection Requirements, and in accordance with Permit Attachment E, Inspection Plan, for evidence of contamination and deterioration during each inspection. The Permittees shall record inspection results and any remediation in the Operating Record. Any decontamination of the retention basin will be subject to the provisions of Permit Attachment D, Contingency Plan.	Y	Inspection procedures for basin verified in interview with site personnel.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.14.2: Retention Basin</p>	<p>(1) The Permittees shall control run-on and run-off as specified in Permit Attachment A, Section A.6.9., Control of Run-on/Run-off. Run-off collected in the retention basin shall be evaluated before discharge. If the run-off is known to be or potentially contaminated with hazardous waste constituents from a spill, leak, or other release, it shall be sampled. If sampling and analysis are required due to known or suspected contamination, the Permittees shall collect a water sample within 24 hours of discovery of the known or suspected contamination. The analytical testing shall include all appropriate methods based on the composition of waste stored at the unit. If the run-off present in the retention basin is determined to be hazardous waste, the Permittees shall implement Attachment D, Contingency Plan, and manage the waste spill as required by Permit Section D.4. The Permittees shall use the analytical results, together with information from the Operating Record, to characterize the water in accordance with Permit Attachment C, Waste Analysis Plan. The Permittees shall record the type and quantity of waste water present in the retention basin, the date of the incident, and the date of removal of the waste water in the Operating Record. If the Permittees determine that the storm water is not hazardous waste, but that it is contaminated with hazardous waste constituents, the Permittees shall ensure the storm water meets the applicable clean-up requirements in Permit Section 11.4.3, Surface Water Clean-up Levels, prior to discharge. If the Permittees determine that the storm water is not contaminated with hazardous waste constituents, the Permittees shall manage the storm water in accordance with The Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity for the facility.</p>	<p>Y</p>	<p>Procedure for pumping retained run-off in holding basin verified in interview with on-site personnel.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.2: Retention Basin	(2) Within 24 hours of a fire event, the Permittees shall collect a sample of fire suppression water collected in the retention basin and analyze it for any hazardous waste constituents managed at the facility. If the fire suppression water present in the retention basin is determined to be hazardous waste, the Permittees shall manage the waste water as required by Attachment D, Contingency Plan. The Permittees shall use the analytical results, together with information from the Operating Record, to characterize the water in accordance with Permit	NA	There has been no fire events at this facility.
3.14.2: Retention Basin	Attachment C, Waste Analysis Plan. The Permittees shall record the type and quantity of waste water present in the retention basin, the date of the incident, and the date of removal of the waste water in the Operating Record. If the Permittees determine that the fire suppression water is not a hazardous waste, the Permittees shall ensure the water meets the applicable clean-up requirements in Permit Section 11.4.3, Surface Water Clean-up Levels, prior to discharge.	NA	Only non-hazardous storm-water runoff has been in retention basin.
3.14.3: Subsurface Vapor Monitoring	The Permittees shall monitor subsurface vapors to evaluate for releases from Material Disposal Area (MDA) C. If soil vapors are determined to present a potential risk to site workers, then the Permittees shall initiate corrective action as necessary to protect human health.	Y	There has been no soil vapors that would present a potential risk to site workers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.14.3: Subsurface Vapor Monitoring</p>	<p>The subsurface vapor monitoring network is described in Permit Attachment A, Section A-6-10, and Figure 56 in Attachment N (Figures). Vapor monitoring well construction must be completed and at least one vapor sample collected from each well sampling port prior to the start of operations at the TWF. Vapor samples must then be collected quarterly during the first year of operation. After the first year of sampling, the Permittees may propose an alternate sampling frequency for subsequent years, in a permit modification request, based on the evaluation of data from the pre-operational and quarterly samples, as well as relevant vapor monitoring data collected from nearby vapor-monitoring locations. All vapor samples shall be analyzed for volatile organic compounds (VOCs), and samples shall be collected in appropriate sample canisters and submitted for analysis of VOCs using EPA Method TO-15. The Permittees must submit a vapor monitoring work plan to the Department for approval no less than 90 days after the effective date of this Permit. The Permittees are required to submit a letter report no later than 60 days following each sample collection event detailing the sampling procedure, analytical results, and any deviations from the Department approved work plan.</p>	<p>Y</p>	<p>There has been no soil vapors that would present a potential risk to site workers.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.3: Subsurface Vapor Monitoring	The Department utilized the methodology described below to determine appropriate soil gas screening levels (SGSLs) for all vapor-phase hazardous constituents detected in the subsurface at MDA C. Required detection and action levels for analytical data are consistent with the lowest SGSLs.	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	The SGSL levels for constituents detected at MDA C are provided as action levels in Tables 3.14.3.1, 3.14.3.2 and 3.14.3.3 at the end of this Section (3.14.3). The SGSL values were calculated using a generalized equation derived from Equation 19 in the EPA's "User's Guide to Evaluating Subsurface Vapor Intrusion Into Buildings" (February 22, 2004, United States Environmental Protection Agency, Washington, DC), and the methodology outlined in "Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)" (October 2011, Department of Toxic Substances Control, California Environmental Protection Agency). The equation is as follows: SGSL=IARL/ α Where: SGSL = Soil gas screening level IARL = Risk-based screening level for industrial workers indoor air α = Attenuation factor (ratio of indoor air concentration to soil gas concentration)	Y	There has been no soil vapors that would present a potential risk to site workers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.3: Subsurface Vapor Monitoring	If sample results, reported in accordance with Permit Section 11.10.3, indicate that volatile organic constituents are present at concentrations above soil gas screening levels at any port in any of the vapor detection network wells, the Permittees must:	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	(1) Notify NMED in writing within 24 hours of detection;	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	(2) Resample the wells as soon as is practicable within ten business days to confirm results. Confirmatory samples must be processed on a rush basis at the analytical laboratory;	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	(3) If the confirmatory analytical sample results verify the accuracy of the initial sample results, the Permittees must notify NMED in writing within 24 hours of confirmation in order to discuss whether subsurface mitigation measures are required to protect human health.	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	The Respondents shall notify the Department in writing within fifteen days after review of the analytical data if the data indicate any of the following:	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	(1) Detection of a contaminant in a vapor monitoring well if that contaminant has not previously been detected in the well.	Y	There has been no soil vapors that would present a potential risk to site workers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.3: Subsurface Vapor Monitoring	(2) Detection of a contaminant in a vapor monitoring well at a concentration that exceeds one-half the soil gas screening level, if that contaminant has not previously exceeded one-half such screening level in the well.	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	(3) Detection of a contaminant in a vapor monitoring well at a concentration that exceeds one-half the soil gas screening level and that has increased for the third consecutive sampling of that well.	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	The written notification shall be submitted to the Department in a letter report that includes, at a minimum, in table format, the date or dates of the sampling event, the well designation, the location of the well, a list of the analytical data that triggered the reporting requirement, any known issues with sample quality, and the specific category for which the data is reported under this Section (3.14.3). The Permittees may submit a proposal for further sampling or investigation or, alternately, the Department may require further investigation. Any further sampling or investigation would be performed in accordance with the corrective action required under 2005 Order on Consent or Permit Part 11.	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	Current Soil Gas Screening Levels for Selected VOCs at sampling ports located 5 feet below ground surface (as amended) (see permit for table)	Y	There has been no soil vapors that would present a potential risk to site workers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.14.3: Subsurface Vapor Monitoring	Current Soil Gas Screening Levels for Selected VOCs at sampling ports located 25 feet below ground surface (as amended) (see permit for table)	Y	There has been no soil vapors that would present a potential risk to site workers.
3.14.3: Subsurface Vapor Monitoring	Current Soil Gas Screening Levels for Selected VOCs at sampling ports located 60 feet below ground surface (as amended) (see permit for table)	Y	There has been no soil vapors that would present a potential risk to site workers.
General Permit Conditions: Section 2			
2.2: AUTHORIZED WASTES	The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous wastes the Permittees proposed to manage at the units in the Permit Application, which are those wastes bearing the EPA Hazardous Waste Numbers (i.e., waste codes) listed in Attachment B (Part A Application), unless otherwise prohibited by this Permit.	Y	Verified waste codes of representative sample of wastes stored at permitted areas.
2.2.3: PCB - Contaminated Waste	The Permittees shall not store liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 parts per million (ppm) unless such storage is in compliance with 40 CFR § 268.50(f).	Y	No permitted storage of PCBs.
2.3.1: Hazardous Waste Storage	The Permittees shall not store hazardous wastes beyond one year from the date that the wastes were first placed into storage at a permitted unit unless the Permittees are able to demonstrate to the Department that one of the following conditions exists:	Y	Wastes stored over a year are identified on the STP. Wastes that are on a shipping hold due to the WIPP incident are not required to be listed on the STP.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.3.1: Hazardous Waste Storage	(1) storage is solely for the purpose of accumulating such quantities of hazardous waste restricted from land disposal as necessary to facilitate proper recovery, treatment, or disposal (see 40 CFR § 268.50(a)(2));	NA	See note for 2.3.1 above.
2.3.1: Hazardous Waste Storage	(2) the waste meets all of the applicable treatment standards under the Land Disposal Restrictions in 40 CFR Part 268, Subpart D, which are incorporated herein by reference; or	NA	See note for 2.3.1 above.
2.3.1: Hazardous Waste Storage	(3) that a mixed waste is documented on the Site Treatment Plan (STP) database under the Federal Facility Compliance Order (FFCO) and such storage is otherwise in compliance with all requirements of the STP and FFCO. (see 40 CFR §§ 268.50(b) and (e))	NA	See note for 2.3.1 above.
2.3.2: Prohibition on Dilution	The Permittees shall not dilute a waste that is prohibited from land disposal or the residue from treatment of a prohibited waste as a substitute for treatment as specified at 40 CFR § 268.3, which is incorporated herein by reference. Dilution to avoid an applicable treatment standard includes, but is not limited to, the addition of solid waste to reduce a hazardous constituent's concentration or ineffective treatment that does not destroy, remove, or permanently immobilize hazardous constituents. Aggregating or mixing wastes as part of a legitimate treatment process is not prohibited dilution for purposes of this Permit.	Y	No dilution of waste observed in reviewing characterization documents of non-hazardous wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.3.3: Documentation of Exclusion or Exemption</p>	<p>The Permittees shall place a one-time notice in the Facility Operating Record for any land disposal prohibited wastes that the Permittees determine are excluded from the definition of hazardous or solid waste or determine are exempted from Subtitle C regulation under 40 CFR §§ 261.2 through 261.6 subsequent to the point of generation (see 40 CFR § 268.7(a)(7)). Exemptions required to be documented include, but are not limited to, hazardous waste managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR §§ 264.1(g)(6) and 260.10, which are incorporated herein by reference. The Facility's on-site files shall include in this documentation a description of the process that generated the waste, the justification for its exemption or exclusion, and a description of the final disposition of the waste.</p>	NA	No hazardous waste streams from TA-54 permitted units are excluded through other regulations.
<p>2.4.1: General Waste Characterization Requirements</p>	<p>The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous waste streams that have been fully characterized in accordance with the requirements of 40 CFR § 264.13, which is incorporated herein by reference, the conditions in this Permit Part, and Attachment C (Waste Analysis Plan).</p>	Y	Characterization of wastes checked for a representative sample. See checklist "Site Visit Record.xls" for sites visited to review specific waste streams that characterization was reviewed.
<p>2.4.1: General Waste Characterization Requirements</p>	<p>At a minimum, the Permittees shall obtain and document all of the information that must be known to treat, store, or otherwise manage a hazardous waste stream in accordance with 40 CFR Parts 264 and 268 including, but not limited to:</p>	Y	See parent note for PC 2.4.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(1) all applicable EPA hazardous waste numbers;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(2) waste characterization necessary to determine whether the waste stream is prohibited from land disposal;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(3) waste characterization necessary to prevent the mixing or placing of incompatible wastes in the same container (see 40 CFR §§ 264.17 and 264.177) or tank system (see 40 CFR § 264.199), and to prevent the impairment of containers (see 40 CFR § 264.172), tanks, and secondary containment systems for tanks by incompatible wastes (see 40 CFR § 264.193(c)(1));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(4) waste characterization necessary to prevent accidental or spontaneous ignition or reaction of ignitable or reactive wastes, including, but not limited to, ignition or reaction in containers (see 40 CFR § 264.17) and tank systems (see 40 CFR § 264.198);	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(5) whether the waste is a mixed waste (see 40 CFR § 270.32(b)(2));	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(6) whether the waste contains free liquids;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(7) the waste stream name;	Y	See parent note for PC 2.4.1 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	(8) the unique waste stream identifier;	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(9) the waste stream generation location (e.g. building and room number); and	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	(10) a detailed description of the waste stream generation process that includes all relevant material inputs or other information that identifies the chemical content and physical form of the waste.	Y	See parent note for PC 2.4.1 above.
2.4.1: General Waste Characterization Requirements	The Permittees shall characterize waste streams by using current Department-approved sampling and analysis methods, acceptable knowledge, or a combination of the two. When acceptable knowledge is insufficient to fully characterize a waste stream, the Permittees shall utilize sampling and analysis to complete that characterization.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.1: General Waste Characterization Requirements	The Permittees shall maintain all waste characterization information in the Facility Operating Record. For records that contain waste characterization information concerning any hazardous or mixed wastes managed under this Permit, which are required to be archived elsewhere at the Facility (e.g., laboratory record books), the Permittees shall maintain a traceable identifier to this documentation to facilitate access by the Permittees and the Department (see 40 CFR § 270.32(b)(2)). The Permittees shall maintain waste characterization documentation in accordance with the record retention requirements in Permit Section 2.12.2.	Y	Waste characterization records are maintained in WCATs and a representative sample were reviewed (LANL 2108g).
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall perform all sampling and analytical procedures used for waste characterization in accordance with Department-approved laboratory analytical methods, including the most recent version of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (U.S. EPA Publication SW-846) and Tables C-16, C-17, and C-18 in Attachment C (Waste Analysis Plan). The Permittees shall ensure that samples collected and analyzed for waste characterization are representative of the chemical composition of the entire volume of the waste stream.	NA	Wastes characterization at TA-63 permitted units is only done using acceptable knowledge.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall ensure that procedures used to collect a representative sample of a waste stream preserve its original physical form and composition and ensure prevention of contamination or changes in concentration of the constituents to be analyzed.	Y	Waste characterization methods were reviewed for a representative sample of wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall implement a quality assurance and quality control (QA/QC) program to ensure that sample collection and analytical procedures used to support waste characterization required under this Permit are technically accurate and statistically valid. This QA/QC program must comply with the requirements in SW-846. The Permittees shall identify and perform the appropriate number of control samples associated with each sample collected (e.g., trip and field blanks, field duplicates, field spikes). The Permittees shall maintain a record in the Facility Operating Record of all QA/QC procedures utilized in the sampling and analysis of a waste stream.	Y	QA/QC procedures regarding waste characterization at permitted units were reviewed with waste management coordinators.
2.4.2: Sampling and Analysis for Hazardous Wastes	When performing laboratory analysis, the Permittees, or a laboratory under contract to the Permittees, shall analyze the appropriate number of method blanks, laboratory duplicates, and laboratory control samples to assess the quality of the data resulting from laboratory analytical programs.	NA	Wastes characterization at TA-63 permitted units is only done using acceptable knowledge.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	If the Permittees use an independent contract laboratory to conduct waste analyses, the Permittees shall require the analytical laboratory to conduct such analysis in accordance with the waste analysis conditions set forth in Permit Part 2.4 and Attachment C (Waste Analysis Plan), Section C.3 (Characterization Procedures). Copies of contracts or other documentation identifying the independent laboratory and showing that the analytical laboratory is required to operate in accordance with the waste analysis conditions shall be kept in the Facility Operating Record (see 40 CFR § 270.32(b)(2)).	NA	Wastes characterization at TA-63 permitted units is only done using acceptable knowledge.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees may propose to the Department an analytical method that deviates from Department-approved methods. The Permittees must submit a written request to the Department for review and approval 90 days prior to using the proposed sampling or analytical procedure. This request must include the following information:	NA	There are no alternative methods performed at LANL.
2.4.2: Sampling and Analysis for Hazardous Wastes	(1) a statement of the need and justification for the proposed action;	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(2) a full description of the alternative method (i.e., a standard operating procedure) including all procedural steps and equipment used in the method;	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(3) a description of the types of wastes, or waste matrices, for which the proposed method may be used;	NA	See parent note for PC 2.4.2.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.2: Sampling and Analysis for Hazardous Wastes	(4) comparative analytical data obtained from using the proposed method with those obtained from using the Department-approved relevant or corresponding methods in Attachment C (Waste Analysis Plan);	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(5) a demonstration that the proposed analytical procedure is equal to, or superior to, the corresponding methods in Attachment C (Waste Analysis Plan) in terms of its sensitivity, accuracy, and precision (i.e., reproducibility);	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(6) an assessment of any factors which may interfere with or limit the use of the proposed method; and	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	(7) a description of the QA/QC procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method.	NA	See parent note for PC 2.4.2.
2.4.2: Sampling and Analysis for Hazardous Wastes	The Permittees shall obtain written approval from the Department of the alternative method before substituting it for an approved method under this Permit, except that a change requested to conform with agency guidance or regulations shall be a Class 1 permit modification (see 40 CFR § 270.42 Appendix 1).	NA	Wastes characterization at TA-63 permitted units is only done using acceptable knowledge.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.3: Acceptable Knowledge	The Permittees may use acceptable knowledge to characterize waste in lieu of, or to supplement, sampling and analysis. The Permittees shall document all uses of acceptable knowledge, and include in the acceptable knowledge documentation all of the background information assembled and used in the characterization process relevant to the decision to use acceptable knowledge (see 40 CFR § 270.32(b)(2)). The record must document the resolution of any data discrepancies between different sources of acceptable knowledge. Acceptable knowledge documentation must be maintained in an auditable form in the Facility Operating Record. The Permittees shall assign a traceable identifier to this documentation to facilitate both access to this information and its verification by the Permittees and the Department.	Y	Acceptable knowledge documents were reviewed for a representative sample of hazardous wastes and these documents are retained on the WCATs system (LANL 2108g).
2.4.7: Waste Characterization Review	The Permittees shall ensure that the initial characterization of any hazardous waste stream managed under this Permit is reviewed or repeated to verify that the characterization is accurate and up to date (see 40 CFR § 264.13(b)(4)). The Permittees shall document this review in the Facility Operating Record. The Permittees shall perform the following:	Y	WCATs system requires annual verification of waste stream profiles, which includes characterization records (LANL 2108g).

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.7: Waste Characterization Review	(1) Annually reevaluate all hazardous waste streams generated to verify the accuracy of initial and subsequent characterization results. The annual reevaluation shall be required no later than one year from the date of initial characterization of the hazardous waste stream or one year from the last annual reevaluation;	Y	See parent note for PC 2.4.7 above.
2.4.7: Waste Characterization Review	(2) Recharacterize hazardous wastes whenever there is a change in the waste-generating processes which includes a change in the status of the waste for purposes of Land Disposal Restrictions or when analytical results indicate a change in the waste stream;	Y	See parent note for PC 2.4.7 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.7: Waste Characterization Review</p>	<p>(3) Annually verify the waste characterization of one percent of hazardous waste streams characterized solely by acceptable knowledge (see 40 CFR §§ 264.13(b)(4) and 270.32(b)(2)). Such waste characterization verification shall be performed by quantitative chemical analyses appropriate for the waste as specified in Attachment C (Waste Analysis Plan). The one percent of wastes whose characterization is to be verified shall be determined in relation to the total number of unique waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year. The waste streams whose characterization is to be verified shall be chosen without further bias and the selection procedure shall be documented in the Facility Operating Record. Wastes not required to undergo this annual verification and not to be counted toward the total number of wastes managed in the previous year include mixed transuranic wastes, hazardous debris, and hazardous wastes that are hazardous only because they are listed at 40 CFR Part 261, Subpart D; and</p>	<p>Y</p>	<p>See parent note for PC 2.4.7 above.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.7: Waste Characterization Review</p>	<p>(4) Recharacterize a hazardous waste stream whenever the Permittees are notified by a receiving off-site facility that the characterization of a hazardous waste they obtained from the Permittees' Facility does not match a pre-approved waste analysis certification or accompanying waste manifest or shipping paper. The Permittees shall notify the Department in writing within three days of their receipt of the notice of the discrepancy from a receiving facility.</p>	<p>NA</p>	<p>No recent RCRA waste exception reports from permitted units at TA-63</p>
<p>2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements</p>	<p>The Permittees shall characterize hazardous wastes managed in containers and tanks to determine the average volatile organic compound (VOC) concentration relative to 500 parts per million by weight (ppmw) at the point of waste origination in compliance with 40 CFR Part 264, Subpart CC. The Permittees shall determine the average VOC concentration either by utilizing acceptable knowledge or by using the procedures specified in 40 CFR § 264.1083(a), which is incorporated herein by reference. The Permittees shall review and update this determination at least once every 12 months following the date of the initial determination in compliance with 40 CFR § 264.1082(c)(1), which is incorporated herein by reference.</p>	<p>NA</p>	<p>No wastes requiring emission controls observed at TA-63, except for mixed wastes.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to control air pollutant emissions from a container or tank and thus shall not be required to characterize the waste for its average VOC concentration in the following circumstances:	NA	No wastes requiring emission controls observed at TA-63, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(1) if the container or tank stores mixed waste (see 40 CFR § 264.1080(b)(6));	NA	No wastes requiring emission controls observed at TA-63, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(2) if the container storing the wastes has a total capacity of less than 0.1 cubic meter (approximately 26 gallons)(see 40 CFR § 264.1080(b)(2)); or	NA	No wastes requiring emission controls observed at TA-63, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	(3) if a tank has stopped receiving hazardous waste and is undergoing closure (see 40 CFR § 264.1080(b)(3)).	NA	No wastes requiring emission controls observed at TA-63, except for mixed wastes.
2.4.8: Waste Characterization for Compliance with RCRA Air Emission Requirements	The Permittees shall not be required to determine the average VOC concentration of wastes if control of air pollution emissions from containers is achieved utilizing the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b), which is incorporated herein by reference.	NA	No wastes requiring emission controls observed at TA-63, except for mixed wastes.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p align="center">2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall ensure that before any hazardous waste is managed at a permitted unit a determination has been made as to whether the waste has to be treated before it can be land disposed (see 40 CFR § 268.7(a)). The Permittees must characterize waste designated to be disposed of at the Waste Isolation Pilot Plant (WIPP) to determine whether it is subject to the land disposal prohibitions, except that such waste is not required to be characterized to determine all applicable underlying hazardous constituents listed in 40 CFR § 268.48.</p>	<p align="center">Y</p>	<p>Verified through manifest review that all wastes that are prohibited from land disposal are sent for treatment.</p>
<p align="center">2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When using laboratory analysis as part of a hazardous waste characterization pursuant to Attachment C (Waste Analysis Plan), Section C.3.1.2, the Permittees shall require the laboratory to report concentrations of all hazardous constituents listed at 40 CFR § 268.48, Table UTS that the analytical test method used is capable of measuring, as specified at the most recent version of the U.S. EPA's Test Methods for Evaluating Solid Wastes (SW-846). When performing this laboratory analysis the Permittees will not be required to perform sample preparation or determinative procedures other than those performed routinely for the target analytes.</p>	<p align="center">NA</p>	<p>Wastes characterization at TA-63 permitted units is only done using acceptable knowledge.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>When performing or obtaining laboratory analysis to demonstrate that a waste meets its applicable treatment standard concentrations specified in 40 CFR § 268.40, Treatment Standards for Hazardous Wastes, in compliance with 40 CFR §§ 268.7(a) and (b), which are incorporated herein by reference, the Permittees shall ensure that analytical method practical quantification limits are not higher than the applicable treatment standard (see 40 CFR § 270.32(b)).</p>	<p>NA</p>	<p>Wastes characterization at TA-63 permitted units is only done using acceptable knowledge.</p>
<p>2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions</p>	<p>The Permittees shall characterize treatment-derived wastes by determining whether the waste is a hazardous or mixed waste in compliance with the requirements in Permit Section 2.4.1 and in compliance with the notification and recordkeeping requirements specified in 40 CFR § 268.7(b)(3)(ii), Treatment Facility Paperwork Requirements Table, which is incorporated herein by reference.</p>	<p>NA</p>	<p>No treatment at TA-63, so no treatment derived waste.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.4.9: Waste Characterization for Compliance with Land Disposal Restrictions	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.	NA	No treatment at TA-63, so no treatment derived waste.
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:	Y	All entries to TA-63 are gated and monitored.
2.5: SECURITY	(1) 24-hour surveillance system continuously monitoring and controlling entry into the permitted units at the Facility; or	Y	See parent note for PC 2.5 above.
2.5: SECURITY	(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).	Y	See parent note for PC 2.5 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	Y	Signage verified during on-site assessment.
2.5.1: Warning Signs	DANGER – UNAUTHORIZED PERSONNEL KEEP OUT (PELIGRO – SE PROHIBE LA ENTRADA A PERSONAS NO AUTORIZADAS)	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	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).	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	The Permittees shall post signs requested by Santa Clara Pueblo (Kha-'Po). The Permittees shall include on the signs the following warning:	NA	See parent note for PC 2.5.1 above.
2.5.1: Warning Signs	Wi-i ts'uni pi' – (DO NOT ENTER)	NA	See parent note for PC 2.5.1 above.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall inspect all the permitted units for malfunctions, deterioration, operator errors, and discharges which may cause or may lead to:	Y	Inspection records since the site opened were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	(1) a release of hazardous constituents to the environment; or	NA	See parent note for PC 2.6 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6: GENERAL INSPECTION REQUIREMENTS	(2) a threat to human health. (see 40 CFR § 264.15(a))	NA	See parent note for PC 2.6 above.
2.6: GENERAL INSPECTION REQUIREMENTS	Inspections shall be conducted of all waste management structures, base materials, containers, monitoring equipment, safety and emergency equipment, security devices, and operating equipment that are important in preventing, detecting, and responding to environmental or human health hazards associated with hazardous wastes (see 40 CFR § 264.15(b)(1)).	Y	Inspection records since the site opened were reviewed.
2.6: GENERAL INSPECTION REQUIREMENTS	The Permittees shall implement the inspection program for the permitted units in compliance with the operating schedule, recordkeeping, and response action commitments in Attachment E (Inspection Plan).	Y	Inspection records since the site opened were reviewed.
2.6.1: Inspection Schedule	The Permittees shall conduct inspections to identify problems in time to correct them before they harm human health or the environment (see 40 CFR § 264.15(a)). The Permittees shall inspect the permitted units and all associated structures and equipment, in compliance with the inspection schedules contained in Attachment E (Inspection Plan).	Y	Inspection records since the site opened were reviewed.
2.6.1: Inspection Schedule	The Permittees shall inspect areas subject to spills, such as loading and unloading areas, daily when in use (see 40 CFR § 264.15(b)(4)).	Y	Inspection records since the site opened were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.2: Repair of Equipment and Structures	The Permittees shall remedy any deterioration or malfunction of equipment or structures discovered during an inspection which may lead to an environmental or human health hazard. The Permittees shall mitigate such deterioration or malfunction within 24 hours of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (see 40 CFR § 264.15(c)).	Y	No active "Action Requests" at TA-63.
2.6.3: Inspection Logs and Records	The Permittees shall record the results of inspections on the Hazardous Waste Facility Inspection Record Form in Attachment E (Inspection Plan) for each inspection conducted in accordance with Permit Section 2.6 and Attachment E. At a minimum, the Permittees shall produce a handwritten record of the date and time of the inspection, an identification of the permitted unit and associated structures or equipment, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions taken (see 40 CFR § 264.15(d)). The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and errors are crossed out with a single line, initialed, and dated by the individual making the correction. The Permittees shall maintain the inspection logs and records in a paper format. The Permittees may transfer the inspection logs and records into an electronic format acceptable to the Department. The paper format shall be retained for the period of time specified in Permit Section 2.12.2.	Y	Inspection records since the site opened were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.6.3: Inspection Logs and Records	The Permittees shall record the following observations or actions in the Facility Operating Record:	Y	Evaluated for compliance based on review of items 1-6 below.
2.6.3: Inspection Logs and Records	(1) the results of any preventive maintenance activities including, but not limited to, maintenance on floors, secondary containment structures, unit drainage structures, and fire protection equipment at a permitted unit;	Y	No current preventive maintenance activities requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(2) any malfunctions and deterioration of such structures or equipment;	Y	No current malfunctions or deteriorations requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(3) any errors affecting waste containment or compliance with this Permit;	Y	No current waste containment issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(4) the locations, dimensions, and repairs of all identified cracks or gaps in floors or base materials;	Y	No current flooring issues requiring immediate attention identified in inspection record review or on-site review.
2.6.3: Inspection Logs and Records	(5) any discharges of hazardous waste, hazardous constituents, or fire suppression systems at a permitted unit; and	Y	No records of release or use of fire suppression system.
2.6.3: Inspection Logs and Records	(6) any occurrences that might cause or exacerbate contamination of a permitted unit.	Y	No record of contamination of a permitted unit.
2.6.3: Inspection Logs and Records	The Permittees shall maintain inspection logs in the Facility Operating Record as specified in Permit Section 2.12.2.	Y	Inspection logs maintained onsite, as verified when reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.7: PERSONNEL TRAINING	The Permittees shall ensure that all Facility personnel who are involved in hazardous waste management activities regulated under this Permit successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is incorporated herein by reference, as well as the training requirements in Attachment F (Personnel Training Plan).	Y	Reviewed training from a representative sample of waste handlers at the site.
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, 22, 24, and 38 in Permit Attachment N (Figures). At TA-63, the Permittees shall ensure that containers holding ignitable or reactive waste are located at least 15 meters from the TWF fence line, as shown in Figure 55 in Permit attachment N (Figures) (see 40 CFR §§ 264.176 and 270.32(b)(2)).	NA	TA-63 does not store wastes characterized as Ignitable (D001) or Reactive (D003). There are no incompatible waste streams stored here.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	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:	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and	NA	See parent note for PC 2.8 above.
2.8: SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	(5) a threat to human health or the environment.	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
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:	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(1) ensure there are no sources of open flames in, on, or around the container or tank;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(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;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(3) maintain adequate clearance around fire hydrants at permitted units;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(4) use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive wastes;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(5) ensure appropriate lightning protection is provided for all storage and treatment units;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(6) perform ongoing inspection, testing, and maintenance of fire protection equipment to determine appropriate test criteria and preventative maintenance activities;	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(7) confine smoking and open flames to designated areas that are a minimum of 50 feet from areas where ignitable or reactive wastes are handled;	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.1: Ignitable and Reactive Waste Precautions	(8) stack containers of ignitable and reactive wastes no more than 2 drums high to comply with the National Fire Protection Association's (NFPA) Flammable and Combustible Liquids Code; and	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	(9) ensure that each permitted unit's fire suppression system is compatible with the hazardous waste being stored or treated at the permitted unit.	NA	See parent note for PC 2.8 above.
2.8.1: Ignitable and Reactive Waste Precautions	The Permittees shall assume that all drums with volume capacities between 55 and 110 gallons that hold mixed transuranic wastes and that are not vented, and standard waste boxes that hold mixed transuranic waste and are not vented, contain hydrogen gas and the associated wastes are subject to the conditions of this Permit Section (2.8.1).	NA	Verified all mixed transuranic (MTRU) drums are vented.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers must be separated from the other materials (or waste) or is protected from them by means of a dike, berm, wall, or other device not to include the container, in order to, in the event of leakage from containers under conditions normally incident to storage, prevent the commingling of the incompatible wastes or materials (see 40 CFR § 264.177(c)).	NA	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored within or on the same secondary containment structure.	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that incompatible wastes or materials are not stored so that a release or spill of these wastes might commingle in a fire suppression water holding area or tank.	NA	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that all waste and materials are segregated and stored in accordance with the Department of Transportation's (DOT) compatibility groupings or classes contained in 49 CFR § 177.848 (see 40 CFR § 270.32(b)(2)).	NA	See parent note for PC 2.8 above.
2.8.2: Incompatible Waste Precautions	The Permittees shall not store cyanides and cyanide mixtures or solutions with acids if a mixture of the materials could generate hydrogen cyanide. The Permittees shall not store Class 8 (corrosive) liquids above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) wastes except when it is known that the mixture of the wastes could not cause a fire or a dangerous evolution of heat or gas.	NA	No P-listed wastes stored at TA-63.
2.8.2: Incompatible Waste Precautions	The Permittees shall ensure that hazardous wastes are not placed in an unwashed container (see 40 CFR § 264.177(b)) or tank (see 40 CFR § 264.199(b)) that previously held an incompatible waste or material.	NA	See parent note for PC 2.8 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10: PREPAREDNESS AND PREVENTION	The Permittees shall maintain and operate each permitted unit in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituent to the air, soil, or surface water that could threaten human health or the environment (see 40 CFR § 264.31). In addition to the general preparedness and prevention requirements identified here, the Permittees shall comply with the TA-specific preparedness and prevention requirements and shall maintain the equipment identified in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan)	NA	See parent note for PC 2.8 above.
2.10.1: Required Equipment	At a minimum, the Permittees shall maintain at the Facility and at each permitted unit the internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment listed in the tables in Attachment A (Technical Area Unit Descriptions) and Attachment D (Contingency Plan) (see 40 CFR § 264.32(b)(2)). The Permittees shall ensure that any changes to the emergency equipment lists adhere to the permit modification requirements at 40 CFR §§ 270.41 through 270.43.	Y	Verified the unit had proper communication devices, alarms, fire control devices, spill kits, and decon equipment.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.1: Required Equipment	The Permittees shall maintain spill kits at each permitted container storage and tank unit as specified in Attachment D (Contingency Plan). These spill kits shall be capable of mitigating small containable spills of acidic, caustic, inflammable, and otherwise hazardous waste present at the unit. For larger spills, the Permittees shall have plugging and diking equipment, siphon pumps, and loaders readily available at the Facility.	Y	Verified that permitted units had adequate spill kits.
2.10.1: Required Equipment	The Permittees shall ensure that there is adequate water pressure and volume available to each permitted unit to provide for fire suppression (see 40 CFR § 264.32(d)).	NA	Did not evaluate design of facility.
2.10.1: Required Equipment	The Permittees shall operate and maintain the area-wide environmental monitoring network as specified in Section D.7.3 of Attachment D (Contingency Plan).	Y	Reviewed records of area-wide environmental monitoring network.
2.10.1: Required Equipment	At permitted units where equipment is necessary to mitigate the effects of a power outage, the Permittees shall maintain batteries, generators, or some other form of backup power supply capable of operating equipment including evacuation alarms, emergency communication equipment, automatic fire suppression systems, and emergency lights. (See 40 CFR §§ 270.14(b)(8)(iv) and 270.32(b)(2))	Y	Verified back-up power equipment was available.
2.10.1: Required Equipment	The Permittees shall ensure that it is possible to provide fuel to backup generators under adverse conditions.	Y	Verified back-up power equipment was available.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>The Permittees shall test the equipment listed in Section E.1.1 of Attachment E (Inspection Plan) in accordance with the schedule identified in Attachment E to ensure its functionality in the event of an emergency. The Permittees shall maintain the equipment specified in Permit Section 2.10.1 to ensure its proper operation in the event of an emergency (see 40 CFR § 264.33). This equipment shall undergo inspection in accordance with Attachment E (Inspection Plan). The Permittees shall document such inspections in the Facility Operating Record in accordance with this Permit Part.</p>	<p>Y</p>	<p>Verified inspection records included site-specific items identified in Attachment E.</p>
<p>2.10.2: Testing and Maintenance of Equipment</p>	<p>If testing or inspections identify any missing or nonfunctioning communication equipment, alarm system, fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired or provide substitute equipment. The Permittees shall ensure that employees and contractors working in the area are notified of the presence of substitute equipment and, if necessary, provide them with training in its use (see 40 CFR § 270.32(b)(2)). The Permittees shall document in the Facility Operating Record instances of such notifications and trainings. The Permittees shall ensure that malfunctioning equipment is clearly marked as out of use and that the location of the substitute equipment is clearly posted on or adjacent to the faulty equipment (see 40 CFR §§ 264.31 and 270.32(b)(2)).</p>	<p>Y</p>	<p>Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.3: Access to Communications or Alarm System	Whenever an employee is present at a permitted unit and the unit contains hazardous waste, the Permittees shall ensure that all personnel at the unit have immediate access to an internal alarm or emergency communication device either directly or through visual or voice contact with another employee (see 40 CFR § 264.34(a)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.3: Access to Communications or Alarm System	The Permittees shall ensure that any employee working alone at a permitted unit is capable of summoning external emergency assistance and shall have immediate access to a device, such as a hand-held two-way radio, a cell phone, or a landline telephone (see 40 CFR § 264.34(b)). The Permittees shall ensure that communication devices are easily accessible without personnel having to enter another building (see 40 CFR § 270.32(b)(2)).	Y	Verified alarms and communication systems are tested in inspection records, and if malfunctioning, alternative forms of communication are identified.
2.10.4: Spill Response	The Permittees shall ensure that spills of hazardous wastes, including small localized spills that can be managed without the assistance of emergency management personnel, are managed utilizing, at a minimum, the following procedures:	Y	No active spills were identified during time of review, but spill response procedures were reviewed.
2.10.4: Spill Response	(1) isolate the immediate area and deny entry to all unauthorized personnel;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(2) contain the spill (e.g., spreading sorbents, forming temporary dikes);	Y	See note for parent PC 2.10.4 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
2.10.4: Spill Response	(3) define the nature and extent of the spilled waste;	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(4) package the spilled waste and contaminated materials in containers; and	Y	See note for parent PC 2.10.4 above.
2.10.4: Spill Response	(5) decontaminate the area, all clean-up equipment, and personnel.	Y	See note for parent PC 2.10.4 above.
Permit Section 3			
3.1: GENERAL CONDITIONS	(1) The Permittees shall store and otherwise manage containers of hazardous waste in accordance with 40 CFR Part 264, Subpart I, which is incorporated herein by reference, and Attachment A (Technical Area Unit Descriptions).	Y	Verified during on-site review that containers were stored in accordance with site-specific information in Attachment A and Subpart I: Use and Management of Containers.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.1: GENERAL CONDITIONS</p>	<p>(2) The Permittees shall only store hazardous waste containers at the permitted units identified as utilizing waste process code S01 and specified in Attachment J (Hazardous Waste Management Units), Table J-1 (Active Portion of the Facility). The Permittees are authorized to store only those wastes identified by EPA Hazardous Waste Numbers (waste codes) listed in Attachment B (Part A Application) and identified as utilizing waste process code S01. The Permittees shall not store containers of hazardous waste in excess of the maximum capacities for each permitted container storage unit (CSU) identified in Attachment J, Table J-1. However, for purposes of compliance with secondary containment requirements, the holding of a hazardous waste container within a permitted unit for a period not to exceed 24 hours, for transportation, treatment, characterization, or packaging, shall not be deemed storage.</p>	<p>Y</p>	<p>Verified wastes stored in accordance with permit application and in approved quantities.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.1: GENERAL CONDITIONS	(3) The Permittees shall ensure that the figures in Attachment N (Figures) and in the closure plans in Attachment G accurately reflect the location of all buildings and structures, regardless of whether they manage hazardous waste, at hazardous waste management units. The Permittees may change the location of a building or structure at a hazardous waste management unit only in accordance with a Class 1 permit modification requirements at 40 CFR § 270.42(a). Any change to the location of a building or structure within which hazardous waste is managed shall be a Class 1 modification with prior approval of the Department (see 40 CFR § 270.42(a)(2)). Any change to the location of a building or structure within which hazardous waste has not been managed shall be a Class 1 modification without prior approval (see 40 CFR § 270.42(a)(1)).	Y	Reviewed figures while walking sites.
3.2: CONDITION OF CONTAINERS	The Permittees shall ensure that all containers used to store hazardous wastes subject to this Permit are in good condition (e.g., no severe rusting or apparent structural defects) in accordance with 40 CFR § 264.171, which is incorporated herein by reference. If a container is not in good condition or begins to leak, the Permittees shall transfer the waste from such a container into a container that is in good condition within 24 hours of discovery of the problem, and in accordance with 40 CFR § 264.171.	Y	All containers in permitted units verified as being in good condition.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.3: ACCEPTABLE STORAGE CONTAINERS	The Permittees shall only use containers that comply with 40 CFR Part 264 Subpart I (Use and Management of Containers) for storage of hazardous waste at permitted units. Prior to shipment of hazardous waste, containers must comply with Department of Transportation (DOT) shipping container regulations (see 49 CFR § 173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR § 178 - Specifications for Packaging).	Y	All containers used to store wastes were compatible with 40 CFR Part 264 Subpart I. Containers staged for shipment complied with DOT requirements.
3.3: ACCEPTABLE STORAGE CONTAINERS	Solid, oversize items (e.g., glovebox, glovebox parts, vacuum pumps, tanks, duct work, piping, HEPA filters) contaminated with hazardous wastes that cannot be containerized in the waste containers referenced in the previous paragraph shall be subject to this Permit Part. These items shall be wrapped in plastic with a minimum of two layers of plastic to prevent dispersion of contaminating material.	NA	No waste oversize items stored at facility.
3.4: COMPATIBILITY OF WASTE WITH CONTAINERS	The Permittees shall use containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired (see 40 CFR § 264.172).	Y	All waste containers verified as compatible with material being stored.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5: MANAGEMENT OF CONTAINERS	(1) The Permittees shall ensure that all containers are kept closed during storage except when waste is added to or removed from the container or when a container's contents need to be repackaged (see 40 CFR § 264.173(a)). The Permittees shall not open, handle, or store a container holding hazardous waste in a manner that may rupture the container or cause the container to leak (see 40 CFR § 264.173(b)).	Y	Containers are only opened during treatment.
3.5: MANAGEMENT OF CONTAINERS	(2) The Permittees shall establish and maintain lines of demarcation which identify the boundaries of all permitted CSUs. The line may be identified by paint, tape, or other permanent, visible marking on the floor or base material (see 40 CFR § 270.32(b)(2)). Permanent fences marking the unit boundary, or rooms or buildings whose walls constitute the boundary of the permitted units, satisfy this requirement.	Y	Painted boundaries were reviewed while onsite. These boundaries are part of the weekly inspections.
3.5: MANAGEMENT OF CONTAINERS	(3) The Permittees shall ensure that drums stored in movable buildings (e.g., modular buildings, transportainers) with non-grated floors are stored on wheeled drum dollies, steel pallets, or are otherwise elevated.	NA	No movable buildings used to store wastes.
3.5: MANAGEMENT OF CONTAINERS	(4) The Permittees shall ensure that when waste containers are moved during storage, the location of each hazardous waste and the quantity at each location is documented in accordance with Permit Section 2.12 (see 40 CFR § 264.73(b)(2)).	Y	Reviewers were provided with facility operating record, which they verified during walk through on a representative sample of drums.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(1) The Permittees shall maintain adequate aisle space at all times to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment within the permitted units. Additionally, emergency egress aisles with a minimum aisle space of two feet must be maintained at all personnel doors (see 40 CFR § 264.35).	Y	Aisle spaces were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(2) The Permittees are authorized to stack containers greater than or equal to 30 gallons of hazardous waste to no more than three containers high. Stacked containers of this volume shall be palletized, and each layer shall be bound together (see 40 CFR § 270.32(b)(2)).	Y	Stacked containers were reviewed during site walk through.
3.5.1: Storage Configuration and Minimum Aisle Space	(3) The Permittees shall ensure that hazardous waste containers stored outdoors are not stored within five feet of the perimeter (i.e., permitted unit boundary) fence, within five feet of any permanent structure, or within five feet of a paved or unpaved roadway.	NA	No outdoor storage at permitted areas at TA-50
3.5.1: Storage Configuration and Minimum Aisle Space	(4) The Permittees shall store hazardous waste gas cylinders in cylinder racks, baskets, or on specially constructed pallets that provide support and restraint.	NA	No permitted storage of gas cylinders.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.5.1: Storage Configuration and Minimum Aisle Space	(5) The Permittees shall ensure that hazardous waste containers that are stored outdoors and are not being actively managed are protected from contact with precipitation using weather protective equipment (e.g., containment shell, secured tarp) or are protected by the design of the equipment (e.g., transportainer, Transuranic Waste Package Transporter II container) (see 40 CFR § 270.32(b)(2)).	NA	No outdoor storage at permitted areas at TA-50
3.6: WASTE CONTAINER LABELING	(1) The Permittees shall ensure that all containers storing hazardous waste have a “Hazardous Waste” label (see 40 CFR § 262.34(a)(3)) that lists the generator’s name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)). All containers holding mixed waste shall be labeled “Radioactive.” Records for all containers will be maintained in accordance with Permit Section 2.12.	Y	Verified a representative sample of containers at permitted storage areas had proper labels.
3.6: WASTE CONTAINER LABELING	(2) The Permittees shall ensure that containers holding free liquids have a “free liquids” label. The free liquids reference may be included on a label identifying other waste characteristics (see 40 CFR § 270.32(b)(2)).	Y	Verified a representative sample of containers at permitted storage areas had proper labels.
3.7: CONTAINMENT SYSTEMS	The Permittees shall store containers of hazardous waste in a manner that prevents contact with any accumulated liquids (see 40 CFR § 264.175(b)(2)).	Y	Verified that no containers are stored on the ground.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(1) The Permittees shall maintain secondary containment systems in all permitted units used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference. The Permittees shall maintain controls to prevent run-on into the permitted unit. These controls shall consist of ground features such as berms and sloping.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
<p>3.7.1: Containers with Free Liquids</p>	<p>(2) The Permittees shall remove spilled or leaked waste and accumulated precipitation from sumps or secondary containment systems. If the sumps or secondary containment system are the sole means of secondary containment the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in liquid form within 24 hours of detection or immediately if necessary to prevent overflow of the secondary containment system. Otherwise, the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in any form in as timely a manner as is necessary to prevent overflow of the containment system and shall, while the system’s capacity is diminished, measure the system daily to demonstrate that the system retains sufficient capacity to contain 10% of the volume of containers or the volume of the largest container holding free liquids, whichever is greater. (see 40 CFR §§ 264.175(b)(4) and (5)). The Permittees shall document this measurement in the Facility Operating Record. Requests for extension of time for any deadline under this subparagraph may be made by e-mail.</p>	<p>Y</p>	<p>No spilled or liquid wastes identified in sumps or secondary containment systems.</p>

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(3) The Permittees shall maintain the base of secondary containment systems to ensure they are impervious in order to contain leaks, spills, and/or accumulated precipitation until the collected liquids are detected and removed. The Permittees shall ensure that the secondary containment system have adequate structural strength to withstand the stresses of daily operations (see 40 CFR § 264.175(b)(1)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(4) If a coating or sealant is used as a component of a secondary containment system, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating the Permittees' installation and maintenance procedures were in accordance with the manufacturer's specifications. If the base of the containment unit has expansion or construction joints, the Permittees shall install and maintain chemically resistant water stops, which are embedded in the concrete, or equivalent external systems (e.g. sealant systems) (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(5) If a flexible liner is used as a secondary containment system after July 1, 2014, the Permittees shall maintain documentation in the Facility Operating Record that the flexible liner was installed and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating that the Permittees' installation and maintenance procedures have been conducted in accordance with the manufacturer's specifications (see 40 CFR § 270.32(b)(2)).	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(6) Unless waste is removed or another form of secondary containment is provided, the Permittees shall repair any damage to a secondary containment system within 15 days of detecting the problem. The Permittees shall perform any concrete or asphalt repair using an appropriate repair method (e.g., ACI standards or manufacturer's recommendations), which will prevent future damage at the location (see 40 CFR §§ 264.15(c), 270.32(b)(2)). The Permittees shall apply coatings or sealants, if applicable, to the repaired area before waste storage activities resume. The Permittees must record any damage or repair to containment systems in the inspection logs required by Permit Section 2.6.3.	Y	All secondary containment systems were verified as in compliance.
3.7.1: Containers with Free Liquids	(7) The Permittees shall ensure that the number of 55-gallon drums stored on a secondary containment pallet does not exceed the design capacity of the pallet.	Y	All secondary containment systems were verified as in compliance.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.7.1: Containers with Free Liquids	(8) The Permittees shall ensure that all metal secondary containment pallets have a chemically-resistant coating equivalent to urethane. The Permittees shall maintain the chemical-resistant coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.	Y	All secondary containment systems were verified as in compliance.
3.7.2: Containers without Free Liquids	(1) For container storage areas that will store only wastes without free liquids (see Attachment J (Hazardous Wastes Management Units), Table J-1 (Active Portion of the Facility)), the Permittees shall ensure that:	Y	Verified as in compliance during on-site review.
3.7.2: Containers without Free Liquids	a. the storage areas are sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation or other liquids (see 40 CFR § 264.175(c)(1)); or	Y	See parent note for PC 3.7.2 above.
3.7.2: Containers without Free Liquids	b. the containers are elevated or otherwise protected from contact with accumulated liquids (see 40 CFR § 264.175(c)(2)).	Y	See parent note for PC 3.7.2 above.
3.7.2: Containers without Free Liquids	(2) The Permittees shall comply with the secondary containment requirements for hazardous wastes that do not contain free liquids and have the following waste codes: F020, F021, F022, F023, F026 and F027 (see 40 CFR § 264.175(d)(1)).	NA	TA-63 does not store wastes with these codes.
3.8: INSPECTION SCHEDULES AND PROCEDURES	(1) The Permittees shall inspect the permitted CSUs at least weekly for evidence of leaks or deterioration of the containment system by corrosion, cracking, differential settlement or other factors (see 40 CFR § 264.174).	Y	Inspection records since the site opened were reviewed.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.8: INSPECTION SCHEDULES AND PROCEDURES	(2) The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (see 40 CFR §§ 264.174 and 270.32(b)(2)).	Y	During review, all containers and labels were stored in a manner that allowed for inspection.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(1) The Permittees shall control air pollutant emissions from each hazardous waste container at a permitted unit in accordance with the applicable regulations in 40 CFR Part 264 Subpart CC. The Permittees shall also manage hazardous wastes subject to emission controls in accordance with Attachment E (Inspection Plan).	NA	Facility only stores mixed waste, is exempt from requirements from 40 CFR Part 264 Subpart CC, see 265.1080(b)(6).
3.9: VOLATILE ORGANIC AIR EMISSIONS	(2) The Permittees shall not be required to control air pollutant emissions from a container in accordance with the exemptions in 40 CFR §§ 264.1080(b)(1) through (8).	Y	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(3) If the Permittees claim an exemption from air pollution emission controls due to a container holding radioactive mixed waste, the Permittees shall clearly label the container in accordance with Permit Section 3.6.	Y	All mixed waste containers are fitted with carbon filters and properly labeled.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(4) A suitable method to control container air pollution emissions is the utilization of the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b). This emission control method is met if the containers adhere to the following requirements:	NA	See parent note from PC 3.9 above.

Permit Condition Section	Language	Compliance (Y/N/NA)	Compliance Notes
3.9: VOLATILE ORGANIC AIR EMISSIONS	a. the containers have a capacity of greater than 0.1 cubic meters and less than 0.46 cubic meters (approximately 119 gallons);	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	b. the containers meet U.S. Department of Transportation (DOT) specifications under 49 CFR Part 178;	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	c. the containers are kept closed during storage; and	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	d. the containers are inspected weekly to ensure lids and openings are securely closed and there is no possibility of air emissions (see 40 CFR §§ 264.1086(c)(3) and (4)).	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(5) All containers that are not exempted under 40 CFR 264, Subpart CC, shall be subject to Container Level 1 requirements, except that the Permittees shall identify containers subject to Container Level 2 controls on a list in the Facility Operating Record.	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(6) Containers may be opened for the purpose of adding or removing waste or as otherwise allowed at 40 CFR § 264.1086(c)(3), which is incorporated herein by reference.	NA	See parent note from PC 3.9 above.
3.9: VOLATILE ORGANIC AIR EMISSIONS	(7) The Permittees shall characterize hazardous wastes subject to emission controls in accordance with Permit Section 2.4 (Waste Analysis) and Attachment C (Waste Analysis Plan).	NA	See parent note from PC 3.9 above.

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C.1.4 Manifest Checklist

Manifest ID Number:	006649687	006649700	006647350	006640754	006649689	006641100	006641018	006641023	105726	105539	105136	105322
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Sec. 262.20 General requirements.

Regulatory Condition												
(a)												
(1) A generator who transports, or offers for transport a hazardous waste for offsite treatment, storage, or disposal, or a treatment, storage, and disposal facility who offers for transport a rejected hazardous waste load, must prepare a Manifest (OMB Control number 2050-0039) on EPA Form 8700-22, and, if necessary, EPA Form 8700-22A, according to the instructions included in the appendix to this part.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
(2) The revised manifest form and procedures in 40 CFR 260.10, 261.7, 262.20, 262.21, 262.27, 262.32, 262.34, 262.54, 262.60, and the appendix to part 262, shall not apply until September 5, 2006. The manifest form and procedures in 40 CFR 260.10, 261.7, 262.20, 262.21, 262.32, 262.34, 262.54, 262.60, and the Appendix to part 262, contained in the 40 CFR, parts 260 to 265, edition revised as of July 1, 2004, shall be applicable until September 5, 2006.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
(b) A generator must designate on the manifest one facility which is permitted to handle the waste described on the manifest.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
(c) A generator may also designate on the manifest one alternate facility which is permitted to handle his waste in the event an emergency prevents delivery of the waste to the primary designated facility.	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A
(d) If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator must either designate another facility or instruct the transporter to return the waste.	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A
(f) The requirements of this subpart and Sec. 262.32(b) do not apply to the transport of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way. Notwithstanding 40 CFR 263.10(a), the generator or transporter must comply with the requirements for transporters set forth in 40 CFR 263.30 and 263.31 in the event of a discharge of hazardous waste on a public or private right-of-way.	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A	N A

Sec. 262.23 Use of the manifest.

Manifest ID Number:	006649687	006649700	006647350	006640754	006649689	006641100	006641018	006641023	105726	105539	105136	105322
Regulatory Condition												
(a) The generator must:												
(1) Sign the manifest certification by hand; and	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
(2) Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
(3) Retain one copy, in accordance with Sec. 262.40(a).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

C.2 Observation Forms

The Review Team made the following observations during the Review of the Hazardous Waste Management Facility Permit at Los Alamos National Laboratory.

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 2	OBSERVATION TYPE I - Operational Deficiency (not following LANL procedure)	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 2/28/2018
TECHNICAL AREA AT LANL TA-3		FUNCTIONAL AREA: HW
LOCATION SAA 6359		CATEGORY: Improper labeling
REFERENCE Procedural		
REQUIREMENT LANGUAGE Waste generators manage areas with several contributing waste streams by adding content labels and waste stream profile numbers to ensure containers are characterized correctly when prepared for shipment.		
OBSERVATION A 1-liter bottle containing solid laboratory waste was improperly labeled as waste catalyst ink (liquid).		
NOTES Generator was in the area, verified contents, and relabeled container.		
RECOMMENDATION None.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 3	OBSERVATION TYPE I - Operational Deficiency (not following LANL procedure)	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 2/28/2018
TECHNICAL AREA AT LANL TA-35		FUNCTIONAL AREA: HW
LOCATION 785		CATEGORY: Improper labeling
REFERENCE Procedural		
REQUIREMENT LANGUAGE Waste generators manage areas with several contributing waste streams by adding content labels and waste stream profile numbers to ensure containers are characterized correctly when prepared for shipment.		
OBSERVATION A drum containing "ENB, Plastics or polymer organics, expancel, DCP, DCM" had multiple labels. The second label identified the waste drum as "laboratory trash with methylene chloride, toluene, and barium".		
NOTES Generator was called to the SAA to verify drum contents and remove incorrect label.		
RECOMMENDATION None.		

DCM = dichloromethane; DCP = dichlorophenol; ENB = ethylidene nobornene

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 5	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 3/5/2018
TECHNICAL AREA AT LANL TA-54		FUNCTIONAL AREA: HW
LOCATION Shed 8		CATEGORY: Improper labeling
REFERENCE Hazardous Waste Permit Condition 3.6(1) Waste Container Labeling		
REQUIREMENT LANGUAGE The Permittees shall ensure that all containers storing hazardous waste have a "Hazardous Waste" label (see 40 CFR § 262.34(a)(3)) that lists the generator's name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)).		
OBSERVATION Container W838069 contained two conflicting labels		
NOTES The generator confirmed the waste consisted of sorbent materials from a spill in Dome 232. The generator removed the wrong label to close the observation.		
RECOMMENDATION None		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 6	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 3/5/2018
TECHNICAL AREA AT LANL TA-54-G		FUNCTIONAL AREA: HW
LOCATION Dome 153		CATEGORY: Improper labeling
REFERENCE Hazardous Waste Permit Condition 3.6(1) Waste Container Labeling		
REQUIREMENT LANGUAGE The Permittees shall ensure that all containers storing hazardous waste have a "Hazardous Waste" label (see 40 CFR § 262.34(a)(3)) that lists the generator's name, address, and EPA Identification number, the date the container was placed in storage at the permitted unit (see 40 CFR § 262.34(a)(2)), and all applicable EPA Hazardous Waste Number(s) (see 40 CFR § 268.50(a)(2)(i)).		
OBSERVATION Containers LA00000067634 and LA00000066425 was labeled as Hazardous Waste and Non-RCRA Waste.		
NOTES Non-RCRA waste label was verified as an artifact and was blocked out.		
RECOMMENDATION None		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 7	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 3/6/2018
TECHNICAL AREA AT LANL TA-54		FUNCTIONAL AREA: HW
LOCATION Area L		CATEGORY: Improper labeling
REFERENCE Hazardous Waste Permit Condition 3.6(2) Waste Container Labeling		
REQUIREMENT LANGUAGE The Permittees shall ensure that containers holding free liquids have a "free liquids" label. The free liquids reference may be included on a label identifying other waste characteristics (see 40 CFR Sec. 270.32(b)(2))		
OBSERVATION The following 7 containers were missing a "free liquids" label: W842005, W842409, W841816, W841013, W841815, W841998, and W841530.		
NOTES Some of the missing labels were found against the fence. Situation was corrected by writing "Free Liquids" on the containers with a black permanent marker.		
RECOMMENDATION None.		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 8	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Shillito, Tom		DATE: 3/12/2018
TECHNICAL AREA AT LANL TA-3		FUNCTIONAL AREA: HW
LOCATION Site ID #1293, Bldg 1698, Rm B-122		CATEGORY: Storage (inadequate/incompatible)
REFERENCE 40 CFR 265.171 Condition of containers. (July 2008)		
REQUIREMENT LANGUAGE If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this part.		
OBSERVATION A plastic container of waste mineral oil (cutting fluid), labeled as Hazardous Waste, was cracked and leaking its contents into its secondary containment tub.		
NOTES There was no release to the environment. Secondary containment was being used, and captured the leaking waste. The leaking container labeled "Hazardous Waste" stored at TA-3, Building 1698, Room B122, Site ID #1293 was re-containerized into a container that is in good condition and re-labeled "nonhazardous" per the characterization documentation (Waste Stream Profile).		
RECOMMENDATION None		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 9	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 3/13/2018
TECHNICAL AREA AT LANL TA-9		FUNCTIONAL AREA: HW
LOCATION Site 1031		CATEGORY: Storage (inadequate/incompatible)
REFERENCE 40 CFR 265.173(a) Management of Containers (July 2008)		
REQUIREMENT LANGUAGE A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.		
OBSERVATION Container holding high-explosive hazardous waste was overflowing and not properly closed. Two open bags of lab trash, including gloves and a trace amount of powder, were stored on the top of the open container.		
NOTES Container was closed by waste management coordinator when the issue was identified. The two bags that were stored on top of the waste container would not fit and were left on top of the adjacent work bench. Per E-Mail from Geri Martinez dated 3/15/2018: The two bags stored on top of an overflowing container at TA-9, Building 38, Room 101, Site ID #1031 were not unknown waste. The two bags contained HE waste. The two bags are labeled "hazardous waste" per the characterization documentation (Waste Stream Profile) and stored in a SAA.		
RECOMMENDATION Staff should maintain a healthy respect for the contents of the HE waste streams and follow established procedures for characterizing, labeling, and handling the waste streams.		

HE = high explosive; SAA = satellite accumulation area

SEP - Triennial Review Observation Form

Pre-Decisional

OBSERVATION NO. 10	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 3/15/2018
TECHNICAL AREA AT LANL TA-54		FUNCTIONAL AREA: HW
LOCATION Area L		CATEGORY: Reporting
REFERENCE Hazardous Waste Permit Condition 2.4.7 Waste Characterization Review (4)		
REQUIREMENT LANGUAGE Recharacterize a hazardous waste stream whenever the Permittees are notified by a receiving off-site facility that the characterization of a hazardous waste they obtained from the Permittees' Facility does not match a pre-approved waste analysis certification or accompanying waste manifest or shipping paper. The Permittees shall notify the Department in writing within three days of their receipt of the notice of the discrepancy from a receiving facility.		
OBSERVATION Permitted disposal facility receiving waste from TA-54 Area L provided two (2) waste discrepancies in Fiscal Year (FY) 2017 and one (1) waste discrepancy in FY 2018 for which LANL did not notify NMED within three days. A fiscal year is defined as October 1 st through September 30 th .		
NOTES Waste discrepancies were identified when preparing response to the NMED Request for Information dated December 19, 2017. The Addendum to the Non-Compliance Report will potentially identify additional waste discrepancies from 2015 and 2016. Waste discrepancies were provided to the transporter, while the wastes remained at the permitted disposal facility to be properly treated. In complying with Permit Condition (PC) 1.9.14, requiring LANL to report any instances of non-compliance that would not pose a threat to human health or the environment and are not reported under PC 1.9.11 (regarding reporting of anticipated noncompliance), LANL provided a memo titled "Los Alamos National Laboratory Hazardous Waste Facility Permit Instances of Noncompliance and Releases for Fiscal Year 2017" dated November 28, 2017, which noted no non-compliance issues in fiscal year 2017. Upon discovery of the non-compliance associated with PC 2.4.7(4), LANL issued a memorandum to the NMED titled "Delayed Notification of Waste Characterization Discrepancies and Addendum to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit Reporting Instances of Noncompliance and Releases for Fiscal Year 2017" dated April 26, 2018 and provided to the Review team on May 3, 2018. The April 26, 2018 memo was provided to meet PC 1.9.14 and PC 1.9.15, which requires LANL to promptly report any facts or information that they failed to submit on reports to the NMED. This memorandum noted the response to the NMED Request for Information dated December 19, 2017 was provided to the NMED on April 5, 2018 and provided notification on all unreported waste discrepancies on the two (2) unreported waste discrepancies in FY 2017 and one (1) unreported waste discrepancy in FY 2018.		

RECOMMENDATION

No further recommendations by the Review Team. The following corrective actions have already been self implemented by LANL according to the April 26, 2018 memo:

1. LANS has made changes to internal document review and preparation protocols, including adding additional reviewers to check proper shipping names and waste profiles.
2. LANS is currently in the process of hiring an independent waste shipper to provide Quality Assurance/ Quality Control oversight on shipments.
3. LANS' subcontractor implemented a requirement, effective January 31, 2018, that any notice from a TSDF will be immediately passed on to the LANL Environmental Protection and Compliance- Waste Management Programs Group Leader with a copy to the LANL Subcontract Technical Representative, in order to minimize the potential for future delays or lapses in communication regarding off-site waste shipments.
4. Additional corrective actions are discussed in Enclosure 2 of the Permittees' response to the RFI, which was provided to the NMED-HWB under separate cover on April 5, 2018.

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 11	OBSERVATION TYPE II - Potential Environmental Regulatory Violation	OBSERVATION STATUS: Closed
REVIEWER Anderson, Jason		DATE: 3/15/2018
TECHNICAL AREA AT LANL TA-55		FUNCTIONAL AREA: HW
LOCATION B40		CATEGORY: Storage (inadequate/incompatible)
REFERENCE Hazardous Waste Permit Condition 3.8 Inspection Schedules and Procedures (2)		
REQUIREMENT LANGUAGE The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (see 40 CFR §§ 264.174 and 270.32(b)(2)).		
OBSERVATION Container label not visible from aisle.		
NOTES Container was rotated so label faced aisle.		
RECOMMENDATION NA		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 12	OBSERVATION TYPE Positive Practice	OBSERVATION STATUS: Not Applicable for In Compliance & Positive
REVIEWER Shillito, Tom		DATE: 3/15/2018
TECHNICAL AREA AT LANL		FUNCTIONAL AREA: HW
LOCATION		CATEGORY:
REFERENCE		
REQUIREMENT LANGUAGE		
<p>OBSERVATION</p> <p>There is a positive culture of communication among the Environmental Protection and Compliance Division, waste management coordinators, and LANL's waste generators or storage area managers. Whether communicating up or down the chain of command, generator issues are shared equally as well as solutions, management practices, or management changes. Generators communicate directly with waste management coordinators and do not feel threatened when sharing concerns. Waste management coordinators are very responsive to requests and inquiries, and generators are also responsive to feedback. When there was a question during the Review, waste management coordinators were able to reach generators often within seconds. Waste management coordinators work together to implement management practices or solutions and share lessons learned. They also provide support in the execution of procedural changes that impact generators throughout LANL to ensure the changes are made. Waste management coordinators are quick to elevate unresolved issues to the Environmental Protection and Compliance Division when additional input is required.</p>		
<p>NOTES</p> <p>NA</p>		
<p>RECOMMENDATION</p> <p>NA</p>		

SEP - Triennial Review Observation Form Pre-Decisional		
OBSERVATION NO. 13	OBSERVATION TYPE Positive Practice	OBSERVATION STATUS: Not Applicable for In Compliance & Positive
REVIEWER Shillito, Tom		DATE: 3/15/2018
TECHNICAL AREA AT LANL		FUNCTIONAL AREA: HW
LOCATION		CATEGORY:
REFERENCE 40 CFR 264 Subpart X		
REQUIREMENT LANGUAGE NA		
OBSERVATION In addition to meeting the requirements of 40 CFR 264 Subpart X, which include the Environmental Performance Standards governing the interim status units at LANL (40 CFR 264.601) that require the prevention of releases to ground water, air, or soil, the Environmental Compliance and Protection Division has conducted annual avian monitoring at the three Interim Status Units and several LANL control sites since 2013. The results of these studies are published annually and made available to the public through LANL's Information Repository, the Electronic Public Reading Room. Although avifauna studies are not required environmental performance standards of Subpart X, LANL performs the studies to assess the impacts the interim status units' activities have on avifauna. Results of 2013-2016 avian monitoring reports suggest LANL operations are not negatively affecting the bird abundances at the three study sites in comparison to the control sites, but caution that continuing research will be required to form a conclusion utilizing long-term datasets.		
NOTES NA		
RECOMMENDATION NA		

C.3 References

C.3.1 HWFP Checklist Reference

- Los Alamos National Laboratory (LANL) (2003). *Resource Conservation and Recovery Act (RCRA), Technical Area 55 (TA-55) Part B Permit Application Submittal- Los Alamos National Laboratory (LANL), EPA ID No. NM 890010515*. September 15. Los Alamos, NM.
- LANL (2004). *Memorandum of Understanding between US National Nuclear Security Administration, Los Alamos Site Operations and The Los Alamos County Medical Center Concerning Mutual Assistance and Emergency Support*. [Memorandum]. March. Los Alamos, NM. [OUO].
- LANL (2007). *Memorandum of Understanding between The Los Alamos Site Office, National Nuclear Security Administration, Department of Energy and The Los Alamos County Police Department Mutual Assistance, and Incident Response and Resolution*. [Memorandum]. June. Los Alamos, NM. [OUO].
- LANL (2013). *Memorandum of Understanding between The Los Alamos Site Office, National Nuclear Security Administration, Department of Energy and The Federal Bureau of Investigation And The Los Alamos County Police Department Mutual Assistance, and Incident Response and Resolution*. [Memorandum]. May. Los Alamos, NM. [OUO].
- LANL (2016). *2015 Biennial Hazardous Waste Report*. May 5. Los Alamos, NM.
- LANL (2017a). *January 2017 Internal Distribution of the LANL Hazardous Waste Facility Permit - Revised Contingency Plan (Attachment D)* [Memorandum]. February 1. Los Alamos NM.
- LANL (2017b). *January 2017 Internal Distribution of the LANL Hazardous Waste Facility Permit - Revised Contingency Plan (Attachment D) to the Emergency Operations Center* [Memorandum]. February 1. Los Alamos NM.
- LANL (2017c). *Los Alamos National Laboratory Hazardous Waste Facility Permit 2017 Community Relations Plan*. August 31. Los Alamos, NM.
- LANL (2017d). *2017 Los Alamos National Laboratory Hazardous Minimization Report*. November. Los Alamos, NM.
- LANL (2017e). *Resource Conservation and Recovery Act (RCRA) Permit Section 2.10.5 Annual Certification*. December 10. Los Alamos, NM.
- LANL (2018a). *Los Alamos National Laboratory Hazardous Waste Facility Operating Record*. March. Los Alamos, NM.
- LANL (2018b). *Los Alamos National Laboratory Hazardous Waste Permit Number NM0890010515*. March. Los Alamos, NM.
- LANL (2018c). *Los Alamos National Laboratory Hazardous Waste TA-16 Interim Status Unit Inspection Records*. March. Los Alamos, NM.

- LANL (2018d). *Los Alamos National Laboratory Hazardous Waste TA-36 Interim Status Unit Inspection Records*. March. Los Alamos, NM.
- LANL (2018e). *Los Alamos National Laboratory Hazardous Waste TA-39 Interim Status Unit Inspection Records*. March. Los Alamos, NM.
- LANL (2018f). *Los Alamos National Laboratory Hazardous Waste Characterization and Tracking System*. March. Los Alamos, NM.
- LANL (2018g). *Delayed Notification of Waste Characterization Discrepancies and Addendum to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit Reporting Instances of Noncompliance and Releases for Fiscal Year 2017* [Memorandum]. April 26. Los Alamos NM.
- LANL to Chaouki Abdallah, UNM Acting President and Stephen McKernan, CEO Health Sciences System University Hospital (2017). *Distribution of the Laboratory Hazardous Waste Facility Contingency Plan, Interim Status Unit Emergency Equipment Lists, and Ninety Day Accumulation Area Site Specific Emergency Plans to University Hospital* [Memorandum]. January 31 Los Alamos NM.
- LANL to Jason Adams, COO of Christus St. Vincent Regional Medical Center (2017). *Distribution of the Laboratory Hazardous Waste Facility Contingency Plan, Interim Status Unit Emergency Equipment Lists, and Ninety Day Accumulation Area Site Specific Emergency Plans to Christus St. Vincent Regional Medical Center* [Memorandum]. January 31 Los Alamos NM.
- LANL to John E. Kieling, Bureau Chief Hazardous Waste Bureau New Mexico Environmental Department (2017). *Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit Reporting Instances of Noncompliance and Releases for Fiscal Year 2017* [Memorandum]. November 28. Los Alamos NM.
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Appendix D The Review Team

The Triennial Review Team performed the Supplemental Environmental Project Independent External Triennial Review under Blanket Purchase Agreement DE-NA 0000385 Enterprise Construction Management Services for the National Nuclear Security Administration, DE-DT0013106. The Review Team is comprised of the following individuals.

Jason Anderson. Subject Matter Expert, Hazardous Waste. Jason has 9 years of multidisciplinary environmental compliance, permitting, sampling, and management experience at a wide variety of federal facilities, focusing on hazardous waste compliance. He is a registered professional engineer in the state of Maryland. Jason has performed large-scale compliance assessments at 14 Army bases and more than 50 Customs and Border Protection facilities. In addition to performing compliance assessments, Jason has managed several large-scale compliance studies and has prepared detailed documents to demonstrate compliance with the applicable federal, state, and local regulations. He has also developed regulatory compliance guidance documents for several multinational Air Force and Army installations. Jason provides technical guidance for hazardous waste management issues throughout Parsons.

Alyse Getty. Compliance Specialist, Ground Water. Alyse has 38 years of experience in planning and environmental regulatory compliance projects for federal clients, including the Department of Energy; Defense Logistics Agency; Department of Homeland Security, Customs and Border Protection; Department of Interior, National Park Service; US Navy; US Air Force; US Army; Department of Agriculture, Forest Service; numerous state departments of transportation, and municipalities. Alyse is a Parsons-certified project manager who provides technical direction for regulatory compliance plans and assessments; ASTM due diligence studies and reporting; hazardous materials and waste management planning and compliance planning; National Environmental Policy Act (NEPA) categorical exclusions, environmental assessments, and impact statements; public outreach program development implementation of public involvement plans; ecological studies; and RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risk assessments. Alyse has conducted regulatory coordination, compliance, and preparation of RCRA, NPDES, wetland Section 404 permits, and water and wastewater facility permits. She has managed and conducted more than 175 NEPA-related assessments, including biological assessments, cultural resource investigations, and floodplain analyses, and she has addressed all regulations for construction projects at federal installations, national parks, recreation facilities, transportation projects, and brownfields.

Stephen W. Manning. Subject Matter Expert: Water and Wastewater. Steve is a licensed professional engineer in Texas with a Class C operator's license and 35 years of experience. He has reviewed more than 300 plans and specifications for wastewater collection and treatment systems for the Texas Natural Resource and Conservation Commission (and three predecessor agencies). Steve has been the major or sole contributor to the development of approximately 100 wastewater and stormwater NPDES permit applications for municipalities (including the Trinity River Authority, Dallas Fort Worth International Airport, and the cities of Fort Worth, Weatherford, Odessa, Flower Mound, Denton, and Cedar Park, Texas); industry and military facilities; and oil spill prevention, control, and countermeasures plans; RCRA permit applications for major industrial facilities. He has developed a hydraulic model for a 150,000-gallon-per-minute closed-loop cooling water system; obtained a

USACE 404 permit for the Lower Colorado River Authority's Hutto Wastewater Treatment Plant Sandy Creek modification; and developed RCRA waste management unit closure plans and closure reports.

Scott Pearson. Subject Matter Expert, RCRA Ground Water. Scott is a professional geologist with 27 years of technical experience in RCRA and CERCLA environmental programs and remediation projects, including RCRA facility investigations and remedial investigations/feasibility studies for government and commercial clients. His expertise includes environmental assessments, ground water supply well and monitoring well installations, remedial excavations, unexploded ordnance surveys, and soil/water sampling. He has extensive experience in environmental investigations at numerous contaminated sites, including soil vapor extraction, X-ray fluorescence analysis, geophysical surveys, and installation/sampling of soil borings and ground water monitoring wells following proper protocols. Scott is exceptional in conducting subsurface geological studies, mapping, computer-aided design, and graphical representation of data. He is trained in MODFLOW, MT3D, RT3D, PEST using GMS software, and ArcView GIS.

Joe Peterlin. Compliance Specialist, Hazardous Waste. Joe has 28 years of environmental planning and regulatory compliance experience with a primary emphasis on hazardous materials and hazardous waste assessments and management for federal and private facilities. Joe is a registered professional engineer in Ohio, Pennsylvania, and Maryland; a registered professional geologist in Pennsylvania and Indiana; and a Parsons-certified project manager. He conducts environmental compliance assessments at federal and private facilities; NPDES permitting/compliance sampling; spill prevention, control, and countermeasure plan preparation and implementation; ASTM due diligence studies and reporting; hazardous materials and waste management planning and compliance planning; and environmental assessments. Joe has led integrated environmental compliance/conformance teams as a lead auditor for federal facilities, determining facility compliance with federal, state, and local regulations.

Art Schatz. Subject Matter Expert, Title V. Art has 30 years of environmental assessment experience with a focus on air quality, air permitting, and compliance. He has expert knowledge of the federal Clean Air Act and state air regulations, and he has obtained hundreds of Title V operating permits and preconstruction air permits for a wide range of industrial and government facilities. Art is a Parsons-certified project manager and provides technical direction for air permit and compliance assessments, emission inventory development, air pollution control technology evaluation, dispersion modeling, and air monitoring studies. He has developed compliance management systems for industrial facilities and Superfund sites, conducted annual compliance reviews and submitted annual reports for facilities with Title V operating permits, and directed multi-facility air compliance audits for several Fortune 500 companies. He has taught seminars, presented at technical conferences and public meetings, and written testimony to support litigation.

Thomas Shillito. Subject Matter Expert – Hazardous Waste. Tom has 30 years of environmental planning and regulatory compliance experience with a primary emphasis on hazardous materials, hazardous waste assessments, and management for military and federal facilities. His broad regulatory compliance experience includes Department of Defense weapon system acquisition, Clean Air Act permitting, NEPA compliance, pollution prevention, sustainability, military planning, due diligence evaluations, and regulatory compliance auditing. He is a certified lead auditor for ISO 14001:2015 Environmental Management Systems (EMS) and is experienced in the development and implementation of EMS, resulting in the reduction of environmental risk. As a lead auditor for

federal facilities, Tom has led integrated environmental compliance/conformance teams in determining facility compliance with federal, state, and local regulations. He has reviewed implementation plans and on-site verification of such plans, conducted follow-up for corrective actions, and coordinated, collected, and reported EMS metrics.

Amy Swiecichowski. Triennial Review Lead. Amy is a registered environmental engineer in Georgia with 27 years of experience leading multidisciplinary teams for test plans, monitoring, sampling, surveying, environmental planning, and regulatory compliance. She supported environmental planning and engineering efforts with the US Army Corps of Engineers, the National Park Service, the U.S. Navy, and the U.S. Department of Energy. Amy ensures efficient planning and constructability through engineering design review, multi-discipline coordination, outreach, and stakeholder involvement. She helped facilitate completion of evaluation reports, assessments, feasibility studies, and operational plans to help authorization of Comprehensive Everglades Restoration Plan civil works projects. Amy has led facility surveys to improve water quality, wastewater treatment, solid and hazardous waste management, and pollution prevention while serving in the US Army as a sanitary engineer officer.

Georgia Vondra. Subject Matter Expert, Ground Water. Georgia is a professional geologist with 26 years of technical expertise and project management experience in environmental geology, geomorphology, hydrogeology, and water resources. Georgia has experience managing and conducting site assessments and remedial investigations, compliance audits, preparation of Part B RCRA permit applications and renewals, environmental impact assessments, environmental impact statements, and Phase I/II investigations at a variety of sites across the country. Her work has been performed in compliance with environmental programs including RCRA, CERCLA, NEPA, the Clean Water Act, and leaking underground storage tank programs for several states including Minnesota, Michigan, Ohio, Illinois, Indiana, California, Arizona, and Texas. Georgia's education and experience focus on water supply and monitoring well design and construction supervision, aquifer test design and interpretation, analytical and numerical ground water modeling for aquifer characterization, investigation of interactions between ground water and surface water systems, conceptual model development, site characterization, remediation design, and contaminant fate and transport. She is experienced in SOMOS for simulation-optimization modeling, the MODFLOW preprocessors Groundwater Vistas and Visual MODFLOW, MT3DMS contaminant transport simulation program, MULTIMED for fate and transport modeling, Winflow for ground water flow modeling, WHPA for ground water flow simulation, Surfer for surface mapping, Grapher, RockWare, Microsoft Access, and Microsoft Project.

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Appendix E On-Site 2018 Triennial Review Schedule

Week 1	Air	Ground Water	Hazardous Waste
26-Feb	Travel		
27-Feb	7:30a Badging		
	9a-11a In-Brief		
	Air Program Staff Introductions Technical Area (TA)-3 Power Plant	Review operations at Sanitary Wastewater System (SWWS); Site visits: Outfall 001; TA-18 Lift Station; Outfall 13S	Review activities, facility list, and LANL provided schedule
3-5p Daily Wrap-up			
28-Feb	Data Disintegrator Sanitary Effluent Reclamation Facility (SERF) Evaporators Asphalt Plant	Intellus Database Overview; Review operations at SERF; On-site Technical Review DP 857 and DP 1793 Plans and Records	Generator site visits with Waste Management Coordinators (WMC)
	Chemical Tracking 112r - Accidental Release Prevention/Risk Management Emissions Inventory		Generator site visits with WMCs
3-5p Daily Wrap-up			
1-Mar	Records, Procedures, Permit Review	Review operations at Sigma Mesa Evaporation Basin (SMEB); On-Site Technical Review of DP-857 and DP-1793 Plans and Records	Generator site visits with WMCs
	Radiological Laboratory/Utility/Office Building (RLUOB) Boilers and Generators TA-55 Boilers and Generators		Generator site visits with WMCs
	TA-16 Boilers TA-53 Boilers		
3-5p Daily Wrap-up			
2-Mar	WR Office: Records, Procedures, Permit Review	Active septic tanks/leachfields site visits: TA-33-0179; TA-33-0375; TA- 39-0132; TA-58-0052; Review SharePoint TA-3-142; On-site Technical Review of Plans and Reports DP- 1589	No site visits; Records Review
	Overview of Rad NESHAP Program		
3-5p Daily Wrap-up			

Week 2	Air	Ground Water	Hazardous Waste
5-Mar	Plan for Week	RDX Treatment Unit; CDV 9-1i; Visit land application sites; Review operations and maintenance areas for DP- 1793	TA-54 Permitted Area Site Visit
	TA-33 Generators		
	Greenhouse Gases Open Burning		
3-5p Daily Wrap-up			
6-Mar	TA-55 PF-4 Beryllium Sources Degreaser	Visit wells: R 11; R 12; R 35A; R 35B; R 29 and observe sampling event. On-site Technical Review of Plans and Reports	Generator site visits with WMCs
	Records, Procedures, Permit Review		
3-5p Daily Wrap-up			
7-Mar	Title 6 Refrigerant Program Asbestos Program Records, Procedures, Permit Review	Visually inspect extraction wells, ion exchange treatment system, Supervisory Control and Data Acquisition (SCADA), associated discharge piping and reinjection wells associated with Chromium Plume Remediation. Review DP-1793: CREX-2; CrIN-5; CrIN-4; R-50; CREX-1; RD-28. Observe additional wells.	TA-50 Permitted Site Visit
	Beryllium Sources TA-3 Sigma and Beryllium Technology Facility (BTF) TA-35-213		
3-5p Daily Wrap-up			
8-Mar	Records, Procedures, Permit Review	RCRA Compliance Ground Water Monitoring meeting	Generator site visits with WMCs
			TA-3, TA-63, and Portion of TA-55 Permitted Sites.
	Exit Brief	Exit Brief	TA-36 and TA-39 Interim Status Units
3-5p Daily Wrap-up			
9-Mar			No site visits; Records Review
	3-5p Daily Wrap-up		

Week 3	Air	Ground Water	Hazardous Waste
12-Mar			Generator site visits with WMCs
	3-5p Daily Wrap-up		
13-Mar			Generator site visits with WMCs
	TA-16 Interim Status Unit		
3-5p Daily Wrap-up			
14-Mar			No Site visits; Records Review
	3-5p Daily Wrap-up		
15-Mar			Remaining TA-55 Permitted Sites
	3-5p Daily Wrap-up		
16-Mar			Exit Brief

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