



# 2021 Update to the Site Discharge Pollution Prevention Plan, Revision 1

NPDES Permit No. NM0030759

May 1, 2022

## Overview





## CERTIFICATION

**NEWPORT NEWS NUCLEAR BWXT-LOS ALAMOS, LLC**


**NPDES Permit No. NM0030759**

**2021 UPDATE TO THE SITE DISCHARGE POLLUTION PREVENTION PLAN, REVISION 1**

### CERTIFICATION STATEMENT OF AUTHORIZATION

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



Troy Thomson, Program Manager  
 Environmental Remediation  
 Newport News Nuclear BWXT-Los Alamos, LLC

3/16/22  
 Date

**M Lee**  
**Bishop**

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 Environmental Management  
 Los Alamos Field Office

Date

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## 1.0 Background

### 1.1 Individual Permit

DOE and N3B, collectively the Permittees, have prepared this Update to the Site Discharge Pollution Prevention Plan, Revision 1 (hereafter, the SDPPP Update) for the Individual Storm Water Permit pursuant to the requirements of NPDES Permit No. NM0030759 (hereafter, the Individual Permit or Permit or IP), as authorized by the EPA. The SDPPP Update includes this Overview as well as five volumes addressing the watersheds covered under the IP. All acronyms and abbreviations are included in Appendix A of this Overview and are not defined at first use.

The Individual Permit regulates storm water discharges associated with historical industrial activities from 405 permitted SWMUs and/or AOCs (collectively, “Sites”). The majority of the Sites covered by the Individual Permit are remotely located and are not associated with current industrial activities. Storm water discharges associated with current conventional industrial activities at the Laboratory are excluded from the Individual Permit. The Permit, NPDES No. NM0030759, which incorporates the latest modifications, became effective on November 1, 2010. The Permit has been administratively continued since November 2015.

LANL and DOE were co-Permittees on the IP from 2010 to April 29, 2018. Through the M&O contract, LANL was delegated responsibility for implementing a program to sustain compliance with the IP. Effective April 30, 2018, N3B replaced LANL as a co-Permittee on the IP. EM-LA provided notice to EPA and NMED of its updated points of contact for the IP and delegations of authority pursuant to 40 CFR Part 122.22 in November 2018. N3B now facilitates implementation of the IP at LANL. EM-LA participates in decisions affecting compliance of the IP and performs contractor oversight of IP field activities to support certification of controls and deliverables to EPA. The Permittees submitted an Individual Permit Renewal Application Package in July 2019. A draft permit was received from EPA on November 27, 2019. The public comment period ended on November 2, 2020. NMED SWQB issued a state certification with conditions for the draft permit on November 30, 2020. The Permittees submitted a petition for review of the state certification to NMED on December 30, 2020, and submitted comments on the state certification to EPA and NMED SWQB on January 12, 2021. The Permittees entered discussions with NMED regarding the state certification and on December 30, 2021, a settlement agreement was signed by NMED and Permittees.

The Sites regulated under this Permit are a subset of the SWMUs and AOCs that are addressed under the June 2016 Consent Order. The Consent Order fulfills the corrective action requirements in §3004(u) and §3008(h) of RCRA for addressing releases of hazardous constituents from SWMUs and AOCs.

A SWMU is a discernible waste management unit from which hazardous waste or hazardous waste constituents may migrate, regardless of whether the unit was intended to manage solid or hazardous waste. SWMUs include any area at a facility at which solid wastes have been routinely and systematically released. An AOC is any area that is not a SWMU that may have had a release of a hazardous waste or hazardous constituent. All SWMUs and AOCs regulated under the



Storm water detention at LA-SMA-5.51



Consent Order were evaluated for inclusion in the Permit based on the following criteria: (1) the SWMU/AOC is exposed to storm water (e.g., not capped or subsurface); (2) the SWMU/AOC may contain “significant industrial material” (e.g., not cleaned up or has contamination in place); and (3) industrial materials from the SWMU/AOC could potentially impact waters of the United States. Sites regulated by the Permit are designated as either “Moderate” or “High Priority.” The two designations have different compliance schedules that apply to the Sites within each designation.

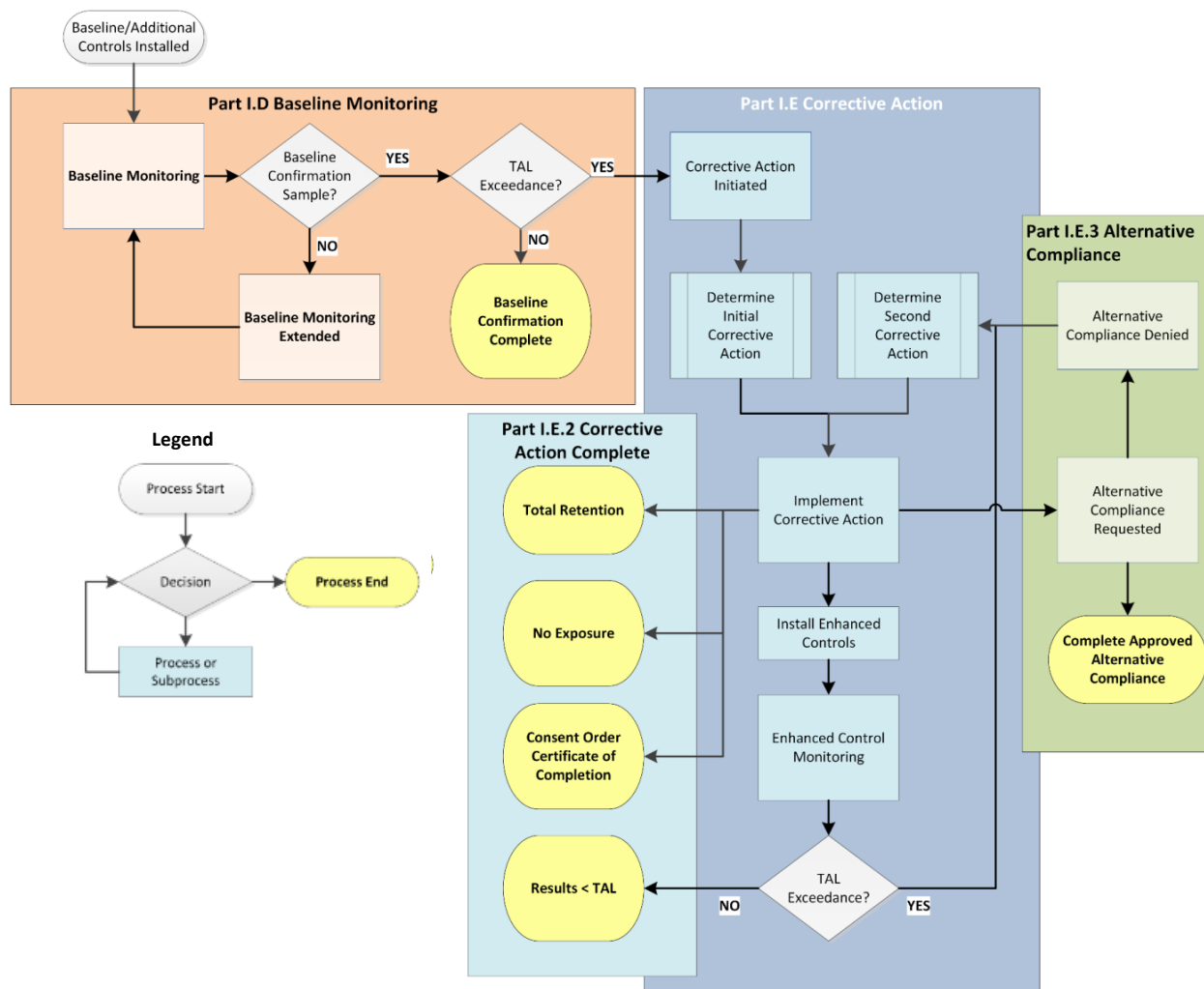
The Individual Permit categorizes a Site as having had an “industrial activity” that creates a “point source discharge” and directs the Permittees to monitor representative storm water discharges from Sites at specified sampling points known as SMAs. An SMA is a single drainage area within a subwatershed and may include more than one Site. Storm water from a Site may drain to multiple subwatersheds and may be associated with multiple SMAs.

The selection of analytical monitoring suites and Site priority designations was based on historical information and any storm water, sediment, and soil data available at the time the Permit application was submitted. The investigation and remediation of SWMUs and AOCs began during the 1990s before the effective date of the Individual Permit (November 1, 2010) and continue concurrently with implementation of the Individual Permit.

The Individual Permit contains nonnumeric technology-based effluent limitations, coupled with a comprehensive, coordinated inspection and monitoring program, to minimize pollutants in the Permittees’ storm water discharges associated with historical industrial activities from specified SWMUs and AOCs. The Permittees are required to implement Site-specific control measures (including BMPs) to address the nonnumeric technology-based effluent limits, as necessary, to reduce or minimize pollutants in their storm water discharges to the extent achievable.

The Permit establishes TALs that are equivalent to New Mexico water-quality criteria. These TALs are used as benchmarks to determine the effectiveness of control measures implemented under the Permit. That is, confirmation monitoring sample results for an SMA are compared with applicable TALs. If one or more confirmation monitoring results exceed a TAL, the Permittees must take corrective action through the installation of measures reasonably expected to (1) meet applicable TALs at the Site, (2) achieve total retention of storm water discharges from the Site, or (3) totally eliminate exposure of pollutants to storm water; otherwise, the Permittees must demonstrate the Site has a COC under the Consent Order. The Individual Permit requires that the Permittees certify to EPA completion of corrective action at each Site by a specific deadline based upon the Site’s status as either a High Priority or Moderate Priority Site. The SMAs monitored in 2021 have the status “baseline monitoring extended” or “enhanced control corrective action monitoring” listed in the compliance status table under each SMA. Only SMAs where enough water was collected or that were functioning properly to collect water for analysis have 2021 analytical data included. In addition, Section 3 of this Overview explains each monitoring status in more detail.

Where the Permittees have installed measures to minimize pollutants in their storm water discharges as required by Part I.A of the Permit at a Site or Sites, but are unable to certify completion of corrective action under Sections E.2(a) through E.2(d) (individually or collectively), the Permittees may submit an alternative compliance request to EPA. If EPA grants the alternative compliance request in whole or in part, it will issue a new individually tailored work plan for the Site or Sites. EPA will also extend the compliance deadline for completion of corrective action, as necessary, to implement this work plan. Corrective action will be accomplished on a case-by-case basis pursuant to an individually tailored compliance schedule determined by EPA. Figure 1 is a “road map” illustrating key activities in the Individual Permit and shows the steps involved in the corrective action process.



**Figure 1 Permit compliance road map**

## 1.2 2021 Update to the Site Discharge Pollution Prevention Plan, Revision 1

The SDPPP Update is written for use by the Permittees' personnel and for review by EPA and the public.

Historical industrial activities, storm water monitoring results, and available data regarding the nature and extent of any surface contamination are carried forward from previous SDPPP updates. New information is provided if confirmation monitoring or baseline samples were collected and where additional control measures were installed, retired, repaired, or modified in 2021. Site descriptions are updated based on Consent Order investigation results from the previous year and from planned future work. The SDPPP Update also describes other relevant information, such as monitoring results, inspections and maintenance, and procedures. The report is intended to be a living document that is kept current throughout the year by maintaining records and relevant documents alongside the SDPPP. At the end of each field season, all changes made during the year and any projected for the coming year are incorporated into an update.

Part I.F.4 of the Permit states, "The SDPPP shall be updated annually to fully incorporate all changes made during the previous year and to reflect any changes projected for the following year."



The original SDPPP was published, submitted to EPA, and placed on the Individual Permit website on April 30, 2011. The following year, on May 1, 2012, the SDPPP was revised and made available on the Permit website. Revision 1 is available at <https://ext.em-la.doe.gov/IPS/Home/SDPPP>. Since the publication of Revision 1, updates to the SDPPP have been prepared and are made available on the IP website by May 1 of each year. The 2021 SDPPP Update, summarizing relevant information from 2021, together with Revision 1, meets the requirements of Part I.F of the Individual Permit. The reporting format is designed to be web-friendly, making information about a specific Site or SMA easier to find, download, and print. Table 1 provides a crosswalk of SDPPP requirements with the location of the information.



Storm water control measures at LA-SMA-0.9 in Los Alamos Canyon

**Table 1 SDPPP Requirements**

Part I Requirement		SDPPP Section
Part	Description	
F.1 (a)	Site Discharge Pollution Prevention Team	2021 Update, Overview, Section 2.0, Site Discharge Pollution Prevention Team
F.1 (b)	Site Description: <ul style="list-style-type: none"> <li>historical activities at each Site</li> <li>precipitation information</li> <li>general location and Site maps</li> </ul>	<ul style="list-style-type: none"> <li>2021 Update, Volumes 1 to 5 (V1–5), Section xxx.1*, Site Descriptions</li> <li>2021 Update, V1–5, Attachment 3, Precipitation Network</li> <li>2021 Update, V1–5, Figure xxx.1; the latest Site map can be found on the IP website—<a href="https://ext.em-la.doe.gov/ips/Home/SiteMonitoringAreaMaps">https://ext.em-la.doe.gov/ips/Home/SiteMonitoringAreaMaps</a>.</li> </ul>
F.1 (c)	Receiving Waters and Watershed	SDPPP V1–5, Rev. 1, Section 300.3
F.1 (d)	Summary of Pollutant Sources	2021 Update, Overview, Section 3.1.1, Evaluation of Potential Pollutant Sources and 2021 Update, V1–5, Attachment 5, Sampling Requirements and Plan
F.1 (e)	Description of Control Measures	2021 Update, Overview Appendix B, Control Measure Fact Sheets; 2021 Update, V1–5, Section xxx.2, Control Measures
F.1 (f)	Schedules for Control Measure Installation	2021 Update, V1–5, Attachment 6, Additional Compliance Status Details for SMAs/Sites in Corrective Action
F.1 (g)	Monitoring and Inspection Procedures: <ul style="list-style-type: none"> <li>(i) Locations where samples are to be collected, including coordinates for sampling locations and any determination that two or more Sites are substantially identical</li> <li>(ii) Person(s) or positions of person(s) responsible for sample collection</li> <li>(iii) Parameters to be sampled and frequency of sampling for each parameter</li> <li>(iv) Procedures for gathering storm event data</li> </ul>	(i) The most recent maps showing SMA sampler location for planned sampling are posted on the IP website: <a href="https://ext.em-la.doe.gov/ips/Home/SiteMonitoringAreaMaps">https://ext.em-la.doe.gov/ips/Home/SiteMonitoringAreaMaps</a> ; 2021 Update, V1–5, Attachment 4, Physical Characteristics (ii) and (iv) 2021 Update, Overview, Section 1.3, Monitoring and Inspection Procedures at <a href="https://ext.em-la.doe.gov/IPS/Home/SDPPP">https://ext.em-la.doe.gov/IPS/Home/SDPPP</a> . (iii) 2021 Update, V1–5, Attachment 5, Sampling Requirements and Plan
F.1 (h)	Signature Requirements	Signatures for the 2021 Update can be found after the cover page of the Overview
F.2 (a)	Alongside Documentation: Dates of training sessions, names of employees trained, and subject matter of training	2021 Update, Overview, Section 2.0, Site Discharge Pollution Prevention Team
F.2 (b)	Alongside Documentation: Sampling Reports (sampling dates, analytical results, outfall locations, name and qualification of technician)	<ul style="list-style-type: none"> <li>Sampling dates and analytical results: 2021 Update, V1–5, Section xxx.3, Storm Water Monitoring</li> <li>Outfall locations: 2021 Update, V1–5, Figure xxx.1, and Attachment 4, Physical Characteristics</li> <li>Name and qualification of technician: N3B's Electronic Records Management System</li> </ul>



Part I Requirement		SDPPP Section
Part	Description	
F.2 (c)	Alongside Documentation: Inspection Reports	<ul style="list-style-type: none"> <li>Inspection summary: 2021 Update, V1–5, Section xxx.4, Inspections and Maintenance</li> <li>Electronic copy of inspection results will be maintained at: N3B's Electronic Records Management System</li> </ul>
F.2 (d)	Alongside Documentation: An accounting of and explanation of length of time taken to modify or implement measure following discovery of deficiency	2021 Update, V1–5, Section xxx.4, Inspections and Maintenance
F.2(e)	Documentation of Maintenance: Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, the date(s) that control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules	2021 Update, V1–5, Section xxx.4, Inspections and Maintenance
F.3 (a)	Required Modifications: Construction or change in design, operation, or maintenance at the facility having a significant impact on the discharge, or potential for discharge, of pollutants from the facility	2021 Update, V1–5, Section xxx.4, Inspections and Maintenance
F.3 (b)	Required Modifications: Findings of deficiencies in control measures during inspections or based on analytical monitoring results	2021 Update, V1–5, Section xxx.4, Inspections and Maintenance
F.3 (c)	Required Modifications: <ul style="list-style-type: none"> <li>any change of monitoring requirement or</li> <li>compliance status</li> </ul>	<ul style="list-style-type: none"> <li>2021 Update, V1–5, Attachment 5, Sampling Requirements and Plan</li> <li>2021 Update, V1–5, Section xxx.5, Compliance Status</li> </ul>
F.3 (d)	Required Modifications: Any change of SMA location	2021 Update, V1–5, Section xxx.1, Site Descriptions, documented in the project map (Figure xxx.1) and in Attachment 4, Physical Characteristics
F.3 (e)	Required Modifications: Summary of changes from the last year's SDPPP	2021 Update, V1–5, Attachment 1, Amendments
F.4	SDPPP updated annually to incorporate previous year changes and following year projections	2021 Update, V1–5
F.5	SDPPP Availability: Paper copy of current SDPPP to be immediately available at facility and copy of SDPPP to be made available on public website	<p>Paper copies of SDPPP V1–5, Rev. 1, and the 2021 Update, V1–5, are available in the Program Manager's Office (Pueblo Complex) and the Public Reading Room (Pojoaque, NM). An electronic version is available on the public website: <a href="https://ext.em-la.doe.gov/IPS/Home/SDPPP">https://ext.em-la.doe.gov/IPS/Home/SDPPP</a></p> <p>The 2021 SDPPP will be available in N3B's Electronic Records Management System and on the public website: <a href="https://ext.em-la.doe.gov/IPS/Home/SDPPP">https://ext.em-la.doe.gov/IPS/Home/SDPPP</a></p>

Part I Requirement		SDPPP Section
Part	Description	
G.1	Erosion Inspection and Reevaluation	Electronic records system will be maintained at: N3B's Electronic Records Management System
G.2	Post-Storm Inspections: Adverse weather events shall be documented and maintained with the SDPPP	2021 Update, V1–5, Section xxx.4, Inspections and Maintenance will be maintained at: N3B's Electronic Records Management System.
G.3	Inspection Report	<ul style="list-style-type: none"> <li>Inspection summary: 2021 Update, V1–5, Section xxx.4, Inspections and Maintenance</li> <li>Electronic copy of inspection results will be maintained at: N3B's Electronic Records Management System.</li> </ul>
I.1	Construction Activity Permit associated with Site Remediation: Steps taken to minimize discharges of contaminated runoff during remediation activity shall be included in the SDPPP Update	2021 Update, V1–5, Section xxx.4, Inspections and Maintenance; Table xxx-2, Control Measure Inspections during 2021 (Inspection Type is "Remediation Construction Activity")
I.2	Deletion of Site: Documents to support a request of site deletion must be kept with facility's SDPPP	All records associated with Individual Permit activities will be maintained electronically in N3B's Electronic Records Management System
I.3	Watershed Protection Approach: EPA encourages the Permittees to voluntarily install watershed-based control measures, such as sediment barriers, to mitigate sediment or storm water runoff reaching the main channels of the canyons and/or the Rio Grande. The Permittees should include information and monitoring data regarding the installation of any such watershed-based control measures in the Annual Report or the SDPPP.	2021 Update, Overview, Section 5.0, Watershed Protection Approach
I.4	Record Keeping	All records associated with Individual Permit activities will be maintained electronically in N3B's Electronic Records Management System
I.5	Reopener: This Permit may be reopened and modified in accordance with 40 CFR § 122.62. Any changes to monitoring and/or control measure requirements made to the Permit in accordance with such a permit modification shall be addressed in the Annual Report and in the annual SDPPP update.	Not yet applicable

\*The xxx refers to the number assigned to each SMA in the Update.

This Overview includes information pertaining to all five watershed-based SDPPP Update volumes and describes the updated information that is new this year. Appendixes to the Overview include acronyms and a glossary of terms used in this report (Appendix A), control measures (Appendix B), a guide to understanding the information presented in the data graphs (Appendix C), and references used throughout the report (Appendix D).



### 1.3 Procedures

Individual Permit procedures are reviewed and updated as needed throughout the year. Monitoring, inspection, and data validation procedures that were valid at the end of 2021 and will be used in 2022 (unless a newer version becomes available) are listed below and are available upon request to [N3BOutreach@em-la.doe.gov](mailto:N3BOutreach@em-la.doe.gov).

- N3B-AP-ER-5008, Verifying and Certifying Individual Permit Corrective Action Measures
- N3B-AP-SDM-3000, General Guidelines for Data Validation
- N3B-AP-SDM-3002, Validation of Semivolatile Organic Compounds Analytical Data
- N3B-AP-SDM-3003, Validation of Organochlorine Pesticides and Herbicides and Polychlorinated Biphenyls Analytical Data
- N3B-AP-SDM-3005, Validation of Metals Analytical Data
- N3B-AP-SDM-3006, Validation of Radiochemical Analytical Data
- N3B-AP-SDM-3007, Validation of General Chemistry Analytical Data
- N3B-AP-SDM-3008, Validation of High Explosives Analytical Data
- N3B-AP-SDM-3009, Validation of Analytical Data by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry
- N3B-AP-SDM-3012, Validation of Analytical Data by Liquid Chromatography and Liquid Chromatography/Tandem Mass Spectrometry
- N3B-AP-SDM-3014, Examination and Verification of Analytical Laboratory Data
- N3B-DI-ER-4005, Desk Instruction for Surface Water Program Monitoring
- N3B-DI-ER-4010, Desk Instruction for Managing Electronic Precipitation Data for Storm Water Projects
- N3B-GDE-ER-5013, Inspection Guidance for Environmental Programs Watershed, Retention, and No Exposure Controls
- N3B-PLN-SDM-1000, Sample and Data Management Plan
- N3B-SOP-ER-1100, Sample Containers, Preservation, and Field Quality Control
- N3B-SOP-ER-2002, Field Decontamination of Equipment
- N3B-SOP-ER-4001, Processing Surface Water Samples
- N3B-SOP-ER-4004, Installing, Setting Up, and Operating Automated Storm Water Samplers
- N3B-SOP-ER-5002, Inspection, Installation, and Maintenance of Non-Engineered NPDES Individual Permit Storm Water Control Measures
- N3B-SOP-ER-5004, Inspecting Automated Storm Water Samplers and Retrieving Samples
- N3B-SOP-SDM-1101, Sample Control and Field Documentation
- N3B-SOP-SDM-1104, Maintaining Custody of Environmental Samples

## 2.0 Site Discharge Pollution Prevention Team

To facilitate the implementation, maintenance, and revision of the SDPPP, a PPT has been established. The PPT is responsible for assisting in developing and revising the SDPPP, maintaining control measures and taking corrective actions for deficiencies, and fulfilling the regulatory requirements of the Individual Permit. The Program Manager is responsible for managing implementation of the IP requirements. The EM-LA Regulatory Compliance Director certifies the required reports and conducts oversight activities.

The PPT consists of qualified personnel who possess the knowledge and skills to perform requirements specific to the Individual Permit. PPT members who perform field activities are able to assess field conditions and activities that impact storm water quality and control measure function. The selection of the PPT field members requires familiarity with Site locations and surrounding operations. Field team members generally have, at a minimum, a Bachelor's degree and specialty qualifications, such as CISEC, CPESC, or other qualifications necessary to perform the fieldwork required. The specific responsibilities of the PPT are provided in Table 2. Each member of the PPT has access to electronic and paper copies of the Individual Permit and this SDPPP Update.

**Table 2 PPT Roles and Responsibilities**

PPT Title	Functional Responsibility
Program Manager	Responsible for managing implementation of Individual Permit requirements. Responsible for signing the completed inspection work orders that satisfy the requirement for certification of findings by the IP.
EM-LA Regulatory Compliance Director	Certifies IP-required reports and conducts oversight activities.
Compliance Team Lead	Responsible for ensuring compliance is met for the Individual Permit Storm Water Program. Responsible for ensuring that Permit-specific training is up to date for all PPT members.
Corrective Actions Lead (also known as Surface Water Technical Services Representative)	Responsible for coordinating design and implementing corrective action field measures associated with TAL exceedances.
Surface Water Project Manager	Responsible for coordinating and delivering reporting requirements defined by the Individual Permit.
Monitoring Lead (also known as Field Team Lead)	Responsible for implementing storm water monitoring, coordinating Site inspections, and maintaining control measures to address deficiencies as required by the Permit. Resolves issues related to successful conduct of operations.
Shift Operations Manager	Authorizes all field operations associated with N3B ER Program environmental work, including, but not limited to, fieldwork pertaining to the Individual Permit. Coordinates with the field team members to resolve issues related to successful conduct of operations.
Subcontractor Manager	Primary contact for subcontractor field team members conducting fieldwork.
Field Team Member	Responsible for the completion of fieldwork, including Site inspections, setup and maintenance of samplers, collection of storm water samples, control measure assessments, control measure maintenance, control measure construction, and construction verifications and/or documentation of work completed.



PPT Title	Functional Responsibility
Tracking and Reporting Team (also known as Data Management Team)	Responsible for the generation of fieldwork orders associated with the IP. Maintains work order information in the Maintenance Connection database. Maintains sampling data and Site-related data in the EIM/SWTS. Provides reports generated from databases as needed.  Responsible for maintaining, verifying, and validating precipitation data in the Hydstra database. Responsible for transmitting validated data to Field Team Members, Field Team Lead, and Shift Operations Manager.
Sample Management Office Lead	Responsible for receiving samples from the sample processor and shipping for analysis. Responsible for verifying that sample results are uploaded correctly to EIM and maintaining long-term stewardship of the data.
Sampling and Analysis Plan Author	Responsible for maintaining the sampling and analysis plan, for quality control once samples are received by the storm water laboratory, and for assigning analytical processing requirements for samples retrieved.
Sample Processor	Responsible for accepting samples from the Route Lead, processing the samples as required by the sample data steward, and providing custody of the samples until samples are delivered to the N3B Sample Management Office.
Subcontractor Technical Representative	Primary contact for subcontractor work performed in the field.
Regulatory Documentation Team	Responsible for editing, compositing, obtaining signatures for, and transmitting publications required by the IP.
Records Management Team Member	Responsible for long-term stewardship of IP records in record database.

Employee training and qualification are essential for effective implementation of the SDPPP and the success of the storm water program. Project personnel receive both formal and informal training in the execution of storm water management at the IP Sites. Formal training is conducted annually before the field season starts, through online training applications and scheduled classroom sessions. Training records are maintained in the Permittees' online training system. Training records include the dates training occurred and the subject matter of the training conducted. During the field season, daily tailgate meetings are conducted to inform personnel of work assignments, impending changes, and work-related issues.

### 3.0 Guide to the Updated Information in the 2021 SDPPP Update, Volumes 1–5

This SDPPP Update maintains the previous five-volume watershed organizational structure for administrative convenience (Table 3). For clarity, SMAs are uniquely and consecutively numbered from 1–250 across the five volumes, as presented in the last column of Table 3.

The 2010 SDPPP provides overviews of each of the five watersheds in section 300.3. These overviews give physical characteristics of the entire watershed. Since the publication of the 2010 SDPPP, no reportable changes have occurred for the watershed-scale information. The 2010 SDPPP can be found on the IP website at <https://ext.em-la.doe.gov/IPS/Home/SDPPP>.

**Table 3 SDPPP Update Organizational Structure: Volume, Watershed, and Associated SMAs**

SDPPP Volume	Primary Watershed	Receiving Waters	SMA Numbers in the Contents Table
Volume 1	Los Alamos/Pueblo	Rendija Canyon Bayo Canyon Pueblo Canyon DP Canyon Los Alamos Canyon	1–64
Volume 2	Mortandad/Sandia	Mortandad Canyon Ten Site Canyon Cañada del Buey Sandia Canyon	65–128
Volume 3	Pajarito	Pajarito Canyon Starmer Canyon Twomile Canyon Threemile Canyon	129–179
Volume 4	Water/Cañon de Valle	Cañon de Valle Potrillo Canyon Water Canyon Fence Canyon	180–229
Volume 5	Ancho/Chaquehui	Ancho Canyon Chaquehui Canyon	230–250

The Site information, organized by SMA, has been updated as follows.

### 3.1 Section X.1, Site Descriptions

Site descriptions have not been updated since the submittal of the 2014 SDPPP Update, except to correct grammatical and editorial errors or to update Consent Order activities related to the Site. Changes are captured in redline and provided as part of Attachment 1 in each volume. References used for the Site descriptions are listed in Appendix D of this Overview.

A current project map is located at the end of each SMA chapter. Maps updated throughout the year will be posted on the IP website: <https://ext.em-la.doe.gov/ips/Home/SiteMonitoringAreaMaps>.

#### 3.1.1 Evaluation of Potential Pollutant Sources

Part I.F.1.(d) of the Individual Permit requires the Permittees to identify potential pollutants of concern associated with “industrial materials or activities” exposed to storm water. Appendix B of the Individual Permit lists the permitted Site Monitoring Requirements for each SMA/Site. As indicated in Part I.D. of the Permit, “pollutants of concern to be monitored are specified in Appendix B.” The identification of pollutants of concern listed in Appendix B does not indicate whether the pollutant is associated with historical industrial materials managed at the Site or with potential releases at the Site. With the exception of ceasing monitoring for constituents where monitoring samples did not exceed TALs, a Permit modification or renewal is required to remove or add specific monitoring requirements from Appendix B. All other additions or subtractions of constituents from the list of potential pollutants of concern discussed in this section do not change the Appendix B monitoring requirements of the current administratively continued Permit.

At the request of the EPA, the Permit renewal process and the initial SIP process described in the following paragraphs are being used to develop a more Site-specific monitoring list. From 2016 to 2019, the Permittees and NMED-SWQB conducted initial SIP reviews of all SWMUs and AOCs listed on the Permit. All available SWMU/AOC Site knowledge was reviewed to determine appropriate Site monitoring constituents and monitoring locations and was included (unless otherwise modified by the EPA) in EPA's 2019 draft IP renewal. This process determined the list of potential pollutants of concern. Site knowledge under the SIP includes, but is not limited to, Site-related historical information that may include past environmental investigation information, engineering drawings, and validated soil and storm water sampling data. These reviews included field visits and occurred in coordination with LANS, DOE EM-LA, NMED-SWQB, EPA, and NMED's DOE Oversight Bureau staff. Effective November 1, 2018, Triad replaced LANS as the manager and operator of LANL.

At SMAs where at least two storm water baseline monitoring samples did not exceed TALs for any constituent, no further monitoring is required for that constituent per Part I.D.4 of the Permit. The Permittees no longer consider these constituents as potential pollutants of concern.

In Volumes 1 through 5 of the SDPPP Update, each TAL exceedance is evaluated to determine whether the TAL exceedance constituent was historically managed at the Site. In many cases, the Permittees have determined that TAL exceedance constituent(s) are not related to historical industrial activities. If the constituent that exceeded the TAL was historically managed at the Site, it is retained as a potential pollutant of concern in the IP renewal.

The Site descriptions provide a brief description of Site-associated historical industrial activities from which new pollutants of concern can be identified. For example, a Site description that identifies the Site as an outfall from an HE sump would result in the identification of HE as a potential pollutant of concern. If HE is not currently a monitoring requirement, it would be added to the list of potential pollutants of concern in the IP renewal.

If baseline confirmation storm water monitoring samples have not been collected at an SMA, the Sites within that SMA were not evaluated for removal of potential pollutants of concern based on historical industrial activities. For these SMA/Site combinations, the list of potential pollutants of concern remains the same as the monitoring requirements (with the exception of removing adjusted gross alpha as a potential pollutant of concern and unless constituents were added based on the Site description).

### 3.2 Section X.2, Control Measures



This section in the SDPPP Update describes control measures that have been installed and are currently "active" as of the end of the 2021 calendar year. An active control measures table is provided for each SMA and has been updated to include the enhanced controls constructed in 2021 and to remove any controls that were retired. Control measures may be retired for several reasons. For example, the lifespan of the control type may have expired, or the control measure may have been damaged by wildlife or flooding. In some cases, the retired control measure is replaced with an equal or more effective measure. Storm water

run-on, runoff, and erosion potential are assessed before controls are selected and installed at an SMA.



The goal is to select and install controls to minimize the potential for erosion when storm water runoff flows across an area; minimize sediment transport; retain transported sediment on-site; and divert, infiltrate, reuse, contain, or otherwise reduce storm water run-on and runoff. A detailed assessment or alternatives analysis is performed for all SMAs that require the installation of enhanced controls. The alternatives-analysis process evaluates the possible corrective action controls, including installation of enhanced controls, total retention, no exposure, and Site remediation. From this alternatives-evaluation process, the most appropriate control(s) is selected, designed, and implemented. Alternatives-analysis documentation is maintained as a record alongside this SDPPP Update. The fact sheets in Appendix B provide sufficient detail to identify and describe the baseline and enhanced control measures constructed at the Sites. Representative photographs of control measures are interspersed throughout the text in the SDPPP Update. Photographs of all baseline and enhanced controls that have been certified are available by following the Construction Certification link on the IP website:

<https://ext.em-la.doe.gov/IPS/Home/ConstructionCertifications>.

Enhanced controls were installed and certified in 2021 at 3M-SMA-0.2, A-SMA-1.1, A-SMA-3, CDV-SMA-2.42, CHQ-SMA-1.02, CHQ-SMA-2, CHQ-SMA-4, CHQ-SMA-7.1, LA-SMA-5.2, PJ-SMA-11, PT-SMA-2, and STRM-SMA-1.5. As of January 1, 2022, enhanced controls are planned at A-SMA-2. The Permittees are also in the process of evaluating alternatives for completion of corrective action at CHQ-SMA-1.02, CHQ-SMA-6, PJ-SMA-3.05, PJ-SMA-11, PT-SMA-4.2, W-SMA-7.8, and W-SMA-11.7. Changes in compliance status may result in the need for additional enhanced controls.

### 3.3 Section X.3, Storm Water Monitoring

The monitoring section in the SDPPP Update describes the storm water data, date of sample collection (if applicable), and comparison with the applicable TALs. For any constituents exceeding the TAL in the most recent monitoring stage for the SMA, a summary of the results from soil and sediment samples collected at the Site during Consent Order or previous investigations is provided and a determination is made of whether or not the TAL exceedance constituent is known to have been associated with industrial materials historically managed at the Site. Screening-level soil data are used when decision-level data are not available to make comparisons. Although screening-level data do not have the same rigorous quality assurance information, their use in this context is appropriate and gives an estimate of what constituents are potentially present in soil at the Site and at what levels. The discussion is organized by Site and analyte. This information will assist the screening process discussed in section 3.5.1 below as the appropriate compliance path selected for the SMA/Site is evaluated.

Also included for all constituents exceeding the TAL at an SMA is a discussion of storm water natural and anthropogenic background concentrations that could be present in run-on and could be a contributing source of the TAL exceedances at the monitoring station.

The storm water monitoring results are plotted on graphs located at the end of each SMA chapter. Data collected for more than 21 total analytes for an individual SMA are presented on separate plots for readability. Each plot has an associated summary table of analytical data. A graphic explaining how to read the plots is presented in Appendix C, Understanding the Analytical Results Plots, and is also available on the IP website: <https://ext.em-la.doe.gov/IPS/Home/SDPPP>.

There were five sampler moves or adjustments that occurred in 2021 as a result of changes in condition after installation of enhanced controls as a corrective action. Upon verification of installation of enhanced controls, a more representative corrective action monitoring location was identified. Because of the moves or adjustments, the 2021 sampling plan was revised to reinstate all IP Appendix B monitoring requirements for these five SMAs.

The sampling plans for 2022 have been updated and are presented in Attachment 5 of each SDPPP Update volume.

### 3.4 Section X.4, Inspections and Maintenance

Active control measures are inspected as follows: Storm Rain Event (after a rain event at or near the Site that registers 0.25 in. or more of rain within 30 min [the precipitation network for each watershed and rain event data in 2021 are presented in Attachment 3 in each SDPPP Update volume; additionally, met tower precipitation measurements are also used to determine when to perform inspections during times when the full precipitation network is not operating (e.g., during winter months)]); TAL Exceedance (to reevaluate the existing control measures when water sample results are above



Automated storm water sampler installed on retention basin spillway

TALs); Annual Erosion Evaluation (annually for changes of conditions affecting erosion, or otherwise affecting the potential for discharge of pollutants); Remediation Construction Activity (weekly during active remediation construction activities to ensure sediments and runoff controls are working); Significant Event (such as a fire or flood that could significantly impact the control measures and environmental conditions in the affected area[s]); Verification Inspections for Enhanced Controls (verification of the installation of enhanced controls), and Verification Inspections for Active Controls in proximity to Consent Order closure activities at TA-21 (verification to ensure sediment and runoff controls are working); Field Team Lead assessments of non-Permittee (Triad or Los Alamos County) managed construction activities potentially impacting IP-managed Sites; and Pre-SIP Field Walkdown Inspections (performed before SIP group field visits to determine if the current SMA boundary is correct and if the current Site map accurately shows field controls; not currently required by the IP). The control measures inspection table is provided for each SMA.

Maintenance is completed following inspections and is performed during the calendar year to address deficiencies, or potential deficiencies, in control measures as listed in the maintenance table. Actions described in the table include maintenance and/or installation activities that result from findings during inspections or from recommendations not derived from inspections. These recommendations are often made during planning stages to improve existing conditions at an SMA. This table is provided for each SMA where maintenance was performed. If no maintenance table is included for an SMA, then no maintenance was required to be performed during the calendar year.

The IP regulates approximately 2100 active control measures. Because of the number of active controls, maintenance must be prioritized and scheduled. Following the date of discovery of a potential maintenance item by the field inspection team, the discovery is reviewed by the Permittees' field team lead to determine the scope of maintenance required. Following the finalization of the maintenance/installation scope, a work order is issued to perform the maintenance with a target date for completion. Typically, the target date is set for 2–4 weeks from the date of discovery or the date a work order is issued for recommendation not derived from inspections. If the maintenance is performed

within 30 days from that date, the table indicates that the maintenance was performed as soon as practicable.

Often, maintenance is delayed because of events outside the Permittees' control, such as Site access control restrictions by Laboratory active facilities; severe weather conditions (i.e., lightning stand-downs, red-flag fire weather work restrictions, winter weather); seasonal biological habitat restrictions (i.e., Mexican spotted owl); staffing limitations resulting from Site-wide rain events; and force majeure events (i.e., government shutdowns, EMCA status, phased operations because of COVID-19 conditions). If maintenance is delayed, but occurs within 31 to 60 days, the maintenance table states the maintenance was delayed. The delays in these cases are considered normal and further explanation is not provided in the maintenance table.

If the maintenance exceeds 60 days, the reason for the maintenance delay is noted in the SMA maintenance table. Any maintenance activities that are associated with enhanced controls typically take more than 60 days to complete because of the planning activities that are required as part of corrective action measure selection through the screening and alternative analysis process (see section 3.5.1 for further information).

### 3.5 Section X.5, Compliance Status

The compliance status table has been updated for 2021. The terms used to track compliance status are defined in Appendix A of this Overview. Six major categories are used to define compliance status. If necessary, additional details are provided in Attachment 6 regarding compliance status.

**Baseline Confirmation Complete (BCComp)**—All confirmation monitoring results for all pollutants of concern at the SMA are at or below TALs, and corrective action is not required at the Sites. No further sampling is required.

**Baseline Monitoring Extended (MEx)**—Baseline confirmation monitoring is in progress, and no storm water from a measurable storm event has been collected. There has been no TAL exceedance.

**Building Enhanced Controls (BEC)**—Enhanced control installation and certification is in process.

**Corrective Action Initiated (CAI)**—A sample was collected during confirmation monitoring, and the analytical results show at least one pollutant concentration is above TALs, resulting in initiation of corrective action. Corrective action may include installing enhanced control measures, installing control measures that totally retain storm water, installing control measures that totally eliminate the exposure of pollutants, or receiving a COC (with or without controls) from NMED.

**Enhanced Control Corrective Action Monitoring (CAM)**—Confirmation monitoring at an SMA is initiated to determine how well enhanced controls are performing. This monitoring occurs after certification that the enhanced control measures have been installed and are complete.

**Corrective Action Complete (CAComp)**—Completion of corrective action is demonstrated by one of the following:

- Analytical results from enhanced control monitoring show pollutant concentrations for all pollutants of concern at the Site to be at or below applicable TALs,
- Control measures that totally retain and prevent the discharge of storm water have been installed at the Site,

- Control measures that totally eliminate exposure of pollutants to storm water have been installed at the Site, or
- The Site has achieved RCRA “no further action” status or a COC with or without controls from NMED.

### **3.5.1 *Selecting a Compliance Path Following Corrective Action Initiation***

If confirmation monitoring sample results demonstrate that one or more TALs are exceeded at a Site, Part I.E requires the Permittees to initiate corrective action. Corrective action consists of one of the following: (i) enhanced control measures to meet the TAL; (ii) total retention of storm water discharges from the Site; (iii) total elimination of exposure of pollutants to storm water at the Site; or (iv) receipt of an NMED-issued COC under the Consent Order.

Part I.E.4 of the Permit categorizes the Sites into “High Priority Sites” and “Moderate Priority Sites” and establishes deadlines for corrective action based on this prioritization.

- If a baseline confirmation monitoring sample was not collected by September 30, 2012, the Permittees are required to certify completion of corrective action at “High Priority Sites” within one (1) year following the first successful confirmation sampling event.
- Permittees are required to certify completion of corrective action at “Moderate Priority Sites” within five (5) years of the effective date of the Permit (which is November 2015).

The Permittees have been granted administrative continuance because the EPA did not renew the IP before its expiration date. The continuance means Sites listed on the IP are required to continue to comply with the current IP, even after its expiration, until a final new IP is issued.

A screening procedure has been developed to provide the IP team with a process for evaluating existing information pertaining to the Site(s) and the associated SMA(s) and for recommending appropriate corrective action measure(s). This screening requires evaluating available storm water, soil, tuff, and sediment data (site-specific and regional); physical knowledge of the Site(s), operating history of the Site(s), and the status of the Site(s) under the Consent Order; and any proposed LANL infrastructure or other facility improvements. Based on this evaluation, a determination is made as to whether the Site is a likely or unlikely source of the TAL exceedance to determine if additional storm water controls would be effective in reducing Site-related constituents that contribute to the TAL exceedance.

If the Site is determined to be an unlikely source of the TAL exceedance and the Permittees are unable to certify completion of corrective action under Parts I.E.2(a) through (d), individually or collectively, the screening process may result in a recommendation that an alternative compliance request be submitted to EPA. The alternative compliance request presents the evidence for why the Site or Sites are not a source of the TAL exceedance. If the Site or Sites are determined to be a likely or potential source of the TAL exceedance, the Site or Sites are recommended to undergo alternatives analysis. The alternatives-analysis process evaluates the possible corrective action controls, including installation of enhanced controls, total retention, no exposure, and Site remediation. From this alternatives-evaluation process, the most appropriate control(s) is selected, designed, and implemented.

In Attachment 6 of each SDPPP Update volume, the Permittees provide updated information regarding the planned compliance path for each SMA/Site in corrective action where corrective action has not yet been completed and the path has changed from the previous year. In addition, information is provided to explain any delays that have occurred in completing corrective action planned. In 2021, all SMAs regulated under the IP were in compliance.



## 4.0 Public Involvement

### 4.1 Website Updates

The website structure is designed to make IP documents easy to locate. The major links from the header section of the home page (<https://ext.em-la.doe.gov/ips/>) are as follows:

- **SDPPP**—provides links to archived SDPPPs and updates (years 2010–2020), and monitoring and inspection procedures currently used by the PPT.
- **SITE MONITORING AREA MAPS**—provides a direct link to each project map; maps are organized by SDPPP volume and updated when any change is made.
- **REPORTS**—provides links to the Annual Reports, Compliance Status Reports, and the TAL Exceedance Reports.
- **ALTERNATIVE COMPLIANCE**—provides links to the EPA submittal letter and alternative compliance package, provides links to underlying technical studies, and provides a placeholder for public comments and the Permittees’ response to be submitted to EPA.
- **MISCELLANEOUS EPA SUBMITTALS**—provides links to letters submitted to EPA regarding force majeure, boundary changes, requests to extend the Permit renewal application deadline, requests to delete Sites from the permit, and sample results after no exposure.
- **PUBLIC MEETINGS**—provides links to the agenda, presentations, and posters for all meetings held to date.
- **RENEWAL APPLICATION**—provides copies of the documentation related to the IP renewal process.
- **CONSTRUCTION CERTIFICATIONS**—provides links to the certification letters submitted to EPA following construction of enhanced controls and baseline controls and analytical results following construction certification.
- **CORRECTIVE ACTION**—provides links to letters submitted to EPA that certify analytical results below TALs, total retention construction, construction to eliminate exposure, and COCs received from NMED under the Consent Order.
- **SAMPLING IMPLEMENTATION PLAN**—provides links to the Site/SMA maps that have sampler location evaluation completed as part of the SIP process.

### 4.2 Email Notification

The subscribe function to receive email notifications is located at <https://ext.em-la.doe.gov/ips/>.

A “Subscribe” link is available on the IP website, in the right column, which allows anyone with an email address to sign up to receive email updates about compliance with the Individual Permit. The public can also ask questions of the IP team from the link under “Get Expertise” in the right column.

### 4.3 Public Meetings

Public meetings are announced through the email notification process and in local newspapers.

The agenda and presentation notes for meetings held in 2021 are available on the Individual Permit website at <https://ext.em-la.doe.gov/IPS/Home/PublicMeetings>.

## 5.0 Watershed Protection Approach

Storm water controls have been installed within each watershed where SMAs exist. These controls have been installed under a variety of programs, including, but not limited to, the Consent Order, Multi-Sector General Permit, Construction General Permit, NPDES outfall permit, EISA storm water guidance, post-fire runoff protection measures, flood mitigation, and general “good-housekeeping” practices. As a whole, these storm water controls prevent erosion and reduce sediment discharge in the watershed. Each year, additional storm water mitigation measures are being evaluated and installed throughout the Laboratory.

Under the Consent Order, some of the Permittees’ largest sediment transport mitigations have been installed in several watersheds, including in Sandia, Mortandad, Los Alamos, Ten Site, and Pueblo Canyons. The goal is to reduce the transport of sediment through a variety of means, including reducing the potentially erosive nature of storm water runoff, enhancing deposition of sediment, and reducing or eliminating access of contaminated sediments to flood erosion. The specific mitigations include the DP Canyon grade-control structure and associated wetlands; two Pueblo Canyon grade-control structures, willow planting, wetlands, and erosion-control measures; the Los Alamos Canyon low-head weir and associated sediment-retention basins; the Mortandad Canyon sediment-retention basins (which are also IP baseline controls that have undergone significant upgrades from initial baseline control status); the Ten Site Canyon grade-control structure; and the Sandia Canyon grade-control structure and associated wetlands. In 2021, these installations were inspected biannually and after a storm water runoff flow event(s) of greater than 50 cfs as measured at the nearest gaging station to the structure, either upstream and/or downstream. Maintenance is conducted to ensure these installations are working properly. Maintenance includes debris removal and minor/major repairs to a structure to maintain function. Sediment, storm water, vegetation, and geomorphic monitoring are conducted in these watersheds to evaluate the effectiveness of the mitigations.



Pueblo Canyon grade-control structure

## *Appendix A* **Acronyms and Glossary**

All acronyms and abbreviations in the Overview and Volumes 1 through 5 of this report are included in this list and are not defined at first use in the Overview and in each volume.

### Acronyms

ACA	accelerated corrective action
AEA	Atomic Energy Act
AOC	area of concern
AST	aboveground storage tank
ATAL	average target action level
B	additional baseline control measure
BCComp	baseline confirmation complete
BEC	building enhanced controls
BFM	bonded-fiber matrix
bgs	below ground surface
BMP	best management practice
BTV	background threshold value
BV	background value
CAComp	corrective action complete
CAI	corrective action initiated
CAM	enhanced control corrective action monitoring
CB	certified baseline control measure
CCN	change control notice
CEARP	Comprehensive Environmental Assessment and Response Program
CFR	Code of Federal Regulations
CISEC	Certified Inspector of Sediment and Erosion Control
CME	corrective measures evaluation
CMP	corrugated metal pipe
CMR	Chemistry and Metallurgy Research
COC	certificate of completion
Consent Order	Compliance Order on Consent
COPC	chemical of potential concern
County	Los Alamos County
CPESC	Certified Professional in Erosion and Sediment Control
cpm	counts per minute
CWA	Clean Water Act

## Appendix A, Acronyms and Glossary (continued)

### Acronyms (continued)

CWWTP	Central Wastewater Treatment Plant
D&D	decontamination and decommissioning
DL	detectable level
DOE	Department of Energy (U.S.)
DQO	data quality objective
DU	depleted uranium
EC	enhanced control
ECB	erosion-control blanket
EIM	Environmental Information Management (LANL database)
EISA	Energy Independence and Security Act
EM	electromagnetic
EM	Environmental Management
EMCA	essential mission critical activities
EM-LA	Environmental Management Los Alamos Field Office (DOE)
EPA	Environmental Protection Agency (U.S.)
EQL	estimated quantitation limit
ER Project	Environmental Restoration Project
ESH	Environment, Safety, and Health (Directorate)
ET	evapotranspiration
FFCA	Federal Facility Compliance Agreement
FGM	flexible-growth medium
FTL	field team leader
FV	fallout value
FY	fiscal year
GIS	geographic information system
GPR	ground-penetrating radar
GSA	General Services Administration
HDPE	high-density polyethylene
HE	high explosives
HEWTF	High Explosive Water Treatment Facility
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HRL	Health Research Laboratory
HVAC	heating, ventilation, and air conditioning
HWFP	Hazardous Waste Facility Permit



## Appendix A, Acronyms and Glossary (continued)

### Acronyms (continued)

HYP0	high power
IA	interim action
ID	identification
IM	interim measure
IP	National Pollutant Discharge Elimination System Permit No. NM0030759
Laboratory	Los Alamos National Laboratory
LAMC	Los Alamos Medical Center
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
LASCP	Los Alamos Site Characterization Program
LASL	Los Alamos Scientific Laboratory
LLW	low-level waste
LOPO	low power
M&O	management and operating
MD	munitions debris
MDA	material disposal area
MDL	method detection limit
MEC	munitions and explosives of concern
MEx	baseline monitoring extended
mg/L	milligrams per liter
MLLW	mixed LLW
MQL	minimum quantification level
MSGP	Multi-Sector General Permit
MTAL	maximum target action level
NES	nuclear environmental site
NFA	no further action
ng/L	nanograms per liter
N3B	Newport News Nuclear BWXT-Los Alamos, LLC
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NMED-SWQB	NMED Surface Water Quality Bureau
NNSA	National Nuclear Security Administration
NPDES	National Pollutant Discharge Elimination System
NSSB	National Security Sciences Building

## Appendix A, Acronyms and Glossary (continued)

### Acronyms (continued)

OD	open detonation
OEW	ordnance and explosives waste
OU	operable unit
OWR	Omega West Reactor
PAH	polycyclic aromatic hydrocarbon
PBX	plastic-bonded explosive (potassium butyl xanthate)
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
Permittees	DOE and N3B
PF	permitted feature
PHERMEX	Pulsed High-Energy Radiographic Machine Emitting X-Rays
PPT	Pollution Prevention Team
PLS	pure live seed
PQL	practical quantitation limit
PRS	Potential Release Site (LANL database)
PVC	polyvinyl chloride
RADS	radionuclides
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RG	rain gauge
RLW	radioactive liquid waste
RLWTF	Radioactive Liquid Waste Treatment Facility
SAA	satellite accumulation area
SAFR	small arms firing range
SAL	screening action level
SDPPP	Site Discharge Pollution Prevention Plan
SIP	sampling implementation plan
SIR	supplemental investigation report
SMA	site monitoring area
SSA	satellite storage area
SSL	soil screening level
SUPO	super power
SVC/SVOC	semivolatile organic compound
SWMU	solid waste management unit

## Appendix A, Acronyms and Glossary (continued)

### Acronyms (continued)

SWPP	Storm Water Pollution Prevention (team)
SWPPP	Storm Water Pollution Prevention Plan
SWSC	Sanitary Wastewater Systems Consolidation (plant)
SWTS	Storm Water Tracking System
TA	technical area
TAL	target action level
TCLP	toxicity characteristic leaching procedure
TNT	trinitrotoluene(2,4,6-)
Triad	Triad National Security, LLC
TRM	turf-reinforcement mat
TRU	transuranic
TSCA	Toxic Substances Control Act
TSD	treatment, storage, and disposal (unit)
TSTA	Tritium Systems Test Assembly
ULR	unassigned land release
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
UTL	upper tolerance limit
UXO	unexploded ordnance
µg/L	micrograms per liter
VCA	voluntary corrective action
VCM	voluntary corrective measure
VCP	vittrified clay pipe
VOC	volatile organic compound
WBR	Water Boiler Reactor
WQDB	Water Quality Database
WWTP	waste water treatment plant
XRF	x-ray fluorescence

## Appendix A, Acronyms and Glossary (continued)

### Glossary

**Alternative Compliance**—Where the Permittees believe they have installed measures to minimize pollutants in storm water discharges but are unable to certify completion of corrective action because of force majeure events, background concentrations of pollutants of concern, Site conditions that make it impracticable to install further control measures, or pollutants of concern contributed by sources beyond the Permittees' control, a Site may be placed into alternative compliance. EPA will determine an individually tailored compliance schedule on a case-by-case basis.

**Baseline Confirmation Complete**—All confirmation monitoring results for all pollutants of concern at the SMA are at or below TALs, and corrective action is not required at the Sites. No further sampling is required.

**Baseline Monitoring Extended**—Baseline confirmation monitoring is in progress, and no storm water from a measurable storm event has been collected. There has been no TAL exceedance.

**Building Enhanced Controls**—At least one sample was collected during confirmation monitoring and corrective action was initiated. The Permittees have selected the installation of enhanced control measures and enhanced control corrective action monitoring as a corrective action and control selection, design, and/or installation is underway.

**Corrective Action Initiated**—A sample was collected during confirmation monitoring, and analytical results show at least one pollutant concentration is above TAL, resulting in initiation of corrective action. Corrective action may include installing enhanced control measures, installing control measures that totally retain storm water, installing control measures that totally eliminate the exposure of pollutants, or receiving a COC (with or without controls) from NMED.

**Enhanced Control Corrective Action Monitoring**—Confirmation monitoring at an SMA is initiated to determine how well enhanced controls are performing. This monitoring occurs after certification that the enhanced control measures have been installed and are complete.

**Corrective Action Complete**—Completion of corrective action is demonstrated by one of the following:

- Analytical results from enhanced control monitoring show pollutant concentrations for all pollutants of concern at the Site to be at or below applicable TALs,
- Control measures that totally retain and prevent the discharge of storm water have been installed at the Site,
- Control measures that totally eliminate exposure of pollutants to storm water have been installed at the Site, or
- The Site has achieved RCRA "no further action" status or a COC with or without controls from NMED.



## Appendix B

### Control Measures

The control measures discussed below have been installed under the IP to prevent run-on to the Site or runoff from the Site. The list is not exhaustive but represents those measures usually installed to prevent erosion and/or to control/capture sediment.

Maintenance and inspection of control measures follow procedures in section 3.4 of the Overview, Inspections and Maintenance.

The table below lists the primary purposes of the types of control measures. Photographs in this appendix demonstrate control measures installed for the IP and are for informational purposes only.

Control Type	Control Sub Type	Control Name	Life Cycle (months)	Control Purpose Erosion Control (EC)/ Sediment Control (SC)
<b>01</b>	<b>00</b>	<b>Seed and Mulch</b>		
	01	Seed and Wood Mulch	24	EC
	02	Seed and Gravel Mulch	120	EC
	03	Hydromulch	12	EC
	04	Seeding	24	EC
	05	Gravel mulch	120	EC
	06	Erosion Control Blanket	24	EC
	07	Seed and Compost	24	EC
<b>02</b>	<b>00</b>	<b>Permanent Vegetation</b>		
	<del>01</del>	<del>Grasses and Shrubs</del>	<del>120</del>	<del>EC*</del>
	<del>02</del>	<del>Forested/Needle Cast</del>	<del>120</del>	<del>EC*</del>
	03	Vegetation Buffer Strip	120	EC
	04	Established Vegetation	120	EC
<b>03</b>	<b>00</b>	<b>Berms</b>		
	01	Earthen Berm	120	SC
	02	Base Course Berm	120	SC
	03	Log Berm	120	SC
	04	Asphalt Berm	120	SC
	05	Silt Dike	24	SC
	06	Straw Wattle	24	SC
	07	Terra Tube	120	SC
	08	Retaining Wall	120	SC
	09	Curbing	120	SC
	10	Gravel Bags	120	SC
	11	Eco-Block	120	SC
	12	Rock Berm	120	SC
	13	Silt Fence	120	SC
	14	Coir log	120	SC

## Appendix B, Control Measures (continued)

Control Type	Control Sub Type	Control Name	Life Cycle (months)	Control Purpose Erosion Control (EC)/ Sediment Control (SC)
	15	Redi-Rock Berm	120	SC
	16	Wood Chip Wattle	36	SC
	20**	Compost Log	120	SC
<b>04</b>	<b>00</b>	<b>Channel/Swale</b>		
	01	Earthen Channel/Swale	120	EC
	02	Concrete/Asphalt Channel/Swale	120	EC
	03	Rock Channel/Swale	120	EC
	04	Culvert	120	EC
	05	Water Bar	120	EC
	06	Rip Rap	120	EC
	07	Vegetated Swale	120	EC
	08	TRM-Lined Swale	120	EC
<b>05</b>	<b>00</b>	<b>Sediment Traps and Basins</b>		
	01	Sediment Trap	120	SC
	02	Sediment Basin	120	SC
	03	Sand Filter	120	EC
	04	Gravel Infiltration Strip	120	SC
	05	Bioretention Basin	120	SC
	06	Infiltration Basin	120	SC
	07	Plunge Pool	120	SC/EC
<b>06</b>	<b>00</b>	<b>Check Dam</b>		
	01	Rock Check Dam	36	SC
	02	Log Check Dam	36	SC
	03	Juniper Bale	120	SC
	04	Energy Dissipater	240	SC
<b>07</b>	<b>00</b>	<b>Gabions</b>		
	01	Gabion	120	SC
	02	Gabion Blanket	120	EC
<b>08</b>	<b>00</b>	<b>Cap</b>		
	01	Earth Cap	120	EC
	02	Rock Cap	120	EC
	03	Asphalt Cap	120	EC
	04	Metal Cap	120	EC
	05	HDPE Cap	120	EC

\* These two types of controls were retired in 2013, and active instances of the control types at SMAs were recoded. These two still appear in the master list because the retired asset codes are still in use and may appear in information published before 2013.

\*\* Three other types of control sub types (17, 18, and 19) are used by other surface water projects managed by N3B. As they are not installed for use as IP controls, they are not included here.

## Appendix B, Control Measures (continued)

### Seed and Mulch

#### General Description

Seed and mulch are used in combination. Mulch includes wood, hydromulch, gravel, erosion-control blankets, and turf-reinforcement blankets.

Perennial vegetative cover from seeding has been shown to remove between 50% and 100% of total suspended solids from storm water runoff, with an average removal of 90%.

#### Control Function

Seed and mulch controls are used primarily to control erosion and to reestablish areas disturbed by construction activities. However, these control measures can also be used for run-on, runoff, and sediment control if the storm water discharge is localized producing sheet flow (nonchannelized).

#### Selection Criteria (if applicable), Material Requirements, and Construction Specifics

##### Selection Criteria

The selection of seed and mulch is related to the slope of the area where protection is required. The table below presents common guidance used at the Laboratory.

Erosion Control	Slopes Steeper than 1:1	Slopes Flatter than 1:1	Slopes Flatter than 1:2	Slopes Flatter than 1:3	Channels
Permanent blankets	X	X	X	X	X
BFM, FGM hydromulch		X	X	X	
Wood fiber hydromulch			X	X	
Straw/coir blankets		X	X	X	

##### Material Requirements and Construction Specifics

Seed and mulch requirements are selected during planning stages of the work. The Laboratory provides technical specifications that specify quality control, materials, approved vendors, and execution requirements. In most cases, seed is applied in contact with soil, and mulch is used to provide a protective cover for raindrop protection, promote seed germination, and help with seedling survival. Materials readily available from established suppliers are described below.

##### Wood Mulch

- Wood straw mulch, wood chips, green-waste mulch, and bark chips are all accepted forms of wood mulch. Wood mulch application covers the ground surface up to 4 in. thick. Wood mulch is not used in areas with steep slopes and is not used where it could run on to a storm water control and interfere with the function of the control.

##### Gravel Mulch

- Gravel is ¾ in. to 2 in. in diameter, round or crushed. Gravel mulch is applied 2–6-in. thick over the soil surface and is not compacted.

## Appendix B, Control Measures (continued)

### Hydromulch

- Wood fiber hydromulch is applied on slopes flatter than 2:1. Mulch is combined with an organic Plantago-based tackifier.
- For slopes steeper than 2:1, bonded fiber products are available.

### Blankets and Matting

- On slopes less than 1:1, straw/coir blend blankets are specified.
- For high-flow channels or slopes steeper than 1:1, permanent composite TRM is specified.

### Seed

- Standard seed mixes used at the Laboratory consist of a variety of pure live seed of grass species, wildflowers, forbs, and shrubs. Only two approved sources have proven consistent in meeting the demands of the high altitude and typical rainfall amounts at the Laboratory.

## Inspection and Maintenance

For seeding and mulch, typical maintenance actions may result from rainfall events that strip the ground of seed and mulch before the seed has established, from animal disturbance, and from human disturbance such as vehicular traffic. Maintenance actions may include reseeding of damaged areas and installing temporary barriers.



Hydromulch applied at a detention pond in Chaquehui Canyon



## Appendix B, Control Measures (continued)

### Permanent Vegetation

#### General Description

Established vegetation (or permanent vegetation) is made up of areas of existing mature vegetation that provides erosion control and storm-water infiltration. There are two broad categories of established vegetation at the Laboratory: (1) low-growing vegetation classified as grasses and shrubs and (2) piñon-juniper, ponderosa pine, and mixed conifer vegetation classified as forested.

#### Control Function

Established vegetation is primarily used for erosion control, including sediment control, run-on control, and runoff control in areas with no concentrated flow.

#### Selection Criteria (if applicable), Material Requirements, and Construction Specifics

##### Selection Criteria

Any area of existing perennial vegetation that increases storm-water infiltration and protects the soil from wind erosion, raindrop impact, or storm water overland flow is selected. In areas where wetland-type vegetation is planned or is in place, specific plant materials are selected for propagation. In existing vegetated areas, examination of current coverage and robustness of the area (organic material, water availability) is required before expanding the area.

##### Material Requirements

Grasses and shrubs are examined for native habitat. Areas that are determined to need wetland plantings may require a specific selection of plants for long-term establishment.

##### Construction Specifics

Permanent vegetation is installed by qualified personnel specializing in landscaping. Tree and woody plants are planted under correct seasonal conditions. Establishing permanent vegetation sometimes includes a long-term watering program.

#### Inspection and Maintenance

- Inspection is performed for significant disturbances to vegetation (e.g., construction, fire, thinning, road construction, and creation of new storm water channels). Repair, if possible, is initiated.
- Continuing a watering program is evaluated during inspection activities.

## Appendix B, Control Measures (continued)



Established vegetation at a detention pond in Chaquehui Canyon

### Berms

#### General Description

This category of storm water control includes earthen berms, base-course berms, log berms, asphalt berms, silt dikes, straw wattles, retaining walls, curbing, gravel bags, Eco-Block berms, Redi-Rock berms, rock berms, S-fences, and coir logs.

#### Control Function

Berms are used primarily for run-on diversion of sheet flow and channelized flow and also for retention of run-on, runoff, and sediment in low-flow applications. Straw wattles, S-fences, rock berms, and gravel bags can be used along the toe, top, and face and at-grade breaks of slopes to shorten slope length and along the perimeter of exposed soil areas to reduce flow velocities and retain sediment. Filter fabric may be used where reductions in turbidity are required. Retaining walls are used primarily for slope stabilization and sediment control.

## Appendix B, Control Measures (continued)

### Selection Criteria (if applicable), Material Requirements, and Construction Specifics

#### Selection Criteria

- The velocity of on-coming water, including the energy of water, will lead to the type of berm used. Incorrect berm construction could result in scour and overtopping where overtopping is not desired.
- High berms require select materials and compaction testing.

#### Material Requirements

- Diversion berms are constructed primarily from select compactable granular material such as base course or asphalt (berms and curbing).
- Retention berms are constructed primarily from earth, base course, logs, or asphalt.

#### Construction Specifics

##### Berms

- The Laboratory maintains construction specifications that describe required materials, quality control, and execution and testing requirements.
- Earthen berms require vegetative controls to prevent erosion of the berm itself. Rip rap is added if additional armoring is necessary.
- Asphalt berms and curbs are installed per design drawings and Laboratory standard drawings.
- For areas with significant traffic, gravel or asphalt berms may be recommended.
- Where berms will retain water, berm fill material requires compaction testing.
- Berms should be stabilized with appropriate materials such as seed and ECBs.
- When used as a perimeter or downslope control, berms divert runoff to a sediment trapping control such as a sediment trap or basin.

##### Wattle, Coir Log, and Compost Log

- Straw wattles are installed along the contour with the ends of each wattle turned upslope to prevent runoff from flowing around the end. Wattles are installed in shallow trenches dug 3 to 5 in. deep for soft, loamy soils and 2– 3 in. deep for hard, rocky soils.
- The vertical spacing requirements for slope installations are based on a higher density of wattles for steep slopes and lower density for flatter slopes.
- Wooden stakes or rebar are driven through the middle of the wattle and deep enough into the ground to anchor the roll in place.
- Installation of coir logs and compost logs is similar to the installation of wattles. Coir logs and compost logs are trenched in and backfilled, and wooden stakes may be used for additional support. Staking may be done through the middle of the log, or alternatively along the upslope and downslope sides of the log to anchor the log in place.

## Appendix B, Control Measures (continued)

### Other Berm Types

- Installation of log berms is similar to the installation of wattles. Logs are delimbed, trenched in, and backfilled. Wooden stakes may be used for additional support.
- Rock berms are constructed of large angular rock. Height and depth of the berm depend on the expected storm water flow.
- Gravel-bag berms are constructed of bags of woven polypropylene, polyethylene, or polyamide fabric and filled with gravel.
- Installation of Eco-Blok rubber sediment control block is similar to that of gravel bag berms. Eco-Blok can be staked down in soil or glued to asphalt or concrete.
- ERTEC S-fencing is installed perpendicular to sheet flow. The fencing is trenched to 3 in. and backfilled.
- Retaining walls and Redi-Rock berms are constructed to appropriate engineering standards.

### Inspection and Maintenance

#### Berms

- Inspections may find that berms were not installed to sufficient height, requiring rework to raise, widen, or extend the berm.
- Compacted earthen or granular berms degrade, scour, and settle. Fill materials may need to be added and recompact.
- Rodent burrows may result in undermining. Recompacting the berm can help reduce impacts from burrows.

#### Wattles

- Wattle anchorages can be displaced, crushed, torn, and misaligned. Typical maintenance entails restoring or replacing the wattle to address evident failure issues.
- Rodents and other animals can destroy wattles. Wattles are removed and reinstalled or new wattles installed on top of existing damaged wattles. With time, wattles degrade to a point where they require replacement.

#### Retaining Walls

- Inspections may find cracking, spalling, slumping, and slope changes in retaining walls. Depending upon the severity of failure, maintenance may be requested. Maintenance includes addressing issues that contribute to failure and may include recompact areas and repairing cracks.



**Appendix B, Control Measures (continued)**





## Appendix B, Control Measures (continued)

Coir logs placed in Bayo Canyon



Earthen berm with TRM at the top of Pueblo Canyon





## Appendix B, Control Measures (continued)

### Channels and Swales

#### General Description

This category of storm water control includes earthen swales, concrete or asphalt swales, rock-lined (rip rap) swales, vegetated swales, culverts, rip rap outlet protection, and water bars.

#### Control Function

Channels and swales are constructed within natural terrain or lined diversions using rip rap and concrete that collect and convey concentrated flows of storm water runoff around an area. Lined channels or swales and culverts can also be used as erosion control if they transport storm water across a SWMU or AOC without contacting it. Water bars are used to divert water off a roadway without blocking access. Rip rap outlet protection is used to stabilize soil and sediment below a storm water source.

#### Selection Criteria (if applicable), Material Requirements, and Construction Specifics

##### Selection Criteria

- Channels and swale selection are based on the location where installed.
  - ❖ In natural terrain areas using rock-lined swales or channels, vegetated swales or water bars made from base course that fit into the surrounding area are encouraged.
  - ❖ In institutional areas, such as parking lots, an asphalt water bar or concrete valley gutter may be selected.
- Size and function are designed to meet anticipated storm water volume.
- Where a storm drain is required, an engineered design may be required for headwalls with reinforced concrete.

##### Material Requirements

- Based on the size, location, and flow rate, channels and swales are primarily made of concrete, base course, or earth. Vegetation may be required in areas where there is no vehicular traffic. For added stability, TRM or rip rap may be added.
- Storm water culverts are made of corrugated metal pipe or corrugated HDPE smooth wall pipe.

##### Construction Specifics

- Concrete valley gutters are typically 4 to 6 ft wide. Valley gutters are often a part of new construction in facility parking areas.
- Construction of storm drain culverts requires procedures to avoid subsurface utilities. For areas with concrete work, procedures are required regarding access roads for ready-mixed concrete trucks to deliver to the Site. In areas with difficult access, roads may be graded and improved.
- Seeds should be planted during a favorable growing season in areas requiring vegetation.

## Appendix B, Control Measures (continued)

### Inspection and Maintenance

- Channel erosion or breaching may occur after storm events. Eroded areas may require reconstruction and compaction.
- Inlet structures for storm water culverts may become clogged and require periodic cleaning.
- Vegetation loss from high flows may require reseeding an area or changing the type of surface coverage to one that is more appropriate.
- Removing accumulated sediment is routinely performed.





## Appendix B, Control Measures (continued)

### Sediment Traps and Detention Basins

#### General Description

Detention basins are used to detain sediment and control the release of runoff. Runoff is released at a controlled rate through an outlet structure. Sediment traps perform the same function as basins but are typically smaller in size and do not have pipe outlets.

#### Control Function

Sediment traps and detention basins are used for sediment control. Under appropriate conditions, they are used for runoff control and erosion control in the IP program.

#### Selection Criteria (if applicable), Material Requirements, and Construction Specifics

##### Material Requirements

- Basin, plunge pool, and trap embankment are constructed primarily from earth or compactable granular material such as base course, which is free of roots, woody vegetation, and large stones.
- Inlets and outlets are constructed of a hardened surface such as concrete or rip rap or may consist of a pipe with a stabilized outlet.
- Spillways are constructed of a hardened surface such as concrete or rip rap.

##### Construction Specifics

- Sediment trap outflows must discharge through a stabilized low point. Spillways should be designed to provide the trap with a settling zone and a sediment storage zone.
- Embankment fill material is placed and compacted with a compactor or the appropriate earth-moving equipment. Specifications require compaction testing where berms will retain water.
- Embankments are stabilized with seed and erosion control blankets, seed and hydromulch, or other appropriate stabilization controls.

#### Inspection and Maintenance

- Inlets, outlets, spillways, plunge pools, and pond/trap embankments are inspected for damage such as vegetation loss or excess, bank instability, debris build-up, erosion, and rock displacement and are maintained as needed to effectively convey storm water runoff.
- Basin inlet and outlet pipes may become plugged with debris or sediment and require cleaning. Spillways may become clogged or damaged and may require repair.
- Sediment deposits and debris need to be routinely removed from detention basins to maintain the appropriate structure storage capacity for both sediment and runoff. Generally, sediment traps are not permanent structures.

## Appendix B, Control Measures (continued)

Sediment trap and detention basin to collect parking lot flow at TA-03



### Check Dams

#### General Description

This category of storm water control includes rock and log check dams and juniper bales. Note: Straw wattles and silt fences are not used.

#### Control Function

Check dams are used primarily for sediment control but may also be used in small channels to control run-on and runoff.

#### Selection Criteria (if applicable), Material Requirements, and Construction Specifics

##### Material Requirements

- Rock check dams are built using angular rock with an appropriate density and size to withstand the design's water velocity.
- Logs check dams are built using logs that may be harvested on-site with an appropriate diameter for the application.

## Appendix B, Control Measures (continued)

### Construction Specifics

- Check dams are placed at a distance and height to allow water ponding from a downstream check dam to reach the toe of the upstream dam.
- Structures are designed to allow high flows (typically a 2-yr storm or larger) to pass safely over the check dam without an increase in upstream flooding or damage to the check dam.
- Dams are stabilized by entrenching the material into the sides and bottom of the channel.
- Rock is placed individually by hand or by mechanical methods.
- Log check dams may be doweled into the channel to withstand high flows.
- Scour protection may be placed on the downstream side of the dam to reduce downstream erosion.

### Inspection and Maintenance

- Check dams are inspected as flow conditions change to ensure they are located in the preferential flow path to reduce flow velocity and/or retain sediment. Relocation or resizing of the structure is completed as necessary.
- Check dams are inspected for scour, structural damage, and erosion caused by flows around, under, or below the dam structure. Repairs to the control are made as needed.
- As Site conditions change and rocks shift, the check dam is maintained to ensure the dam center is lower than its edges and the edges are below the edge of the channel. Stone may be added or removed to maintain appropriate structure geometry.
- Check dams are maintained by removing large debris, trash, and leaves so the function of the structure is not compromised.



## Appendix B, Control Measures (continued)

Doweled log check dam during flow event in Acid Canyon



Native rock check dams installed in preferential flow path





## Appendix B, Control Measures (continued)

### Gabions

#### General Description

This category of storm water control includes gabions and gabion blankets.

#### Control Function

Gabions are pervious structures designed to stabilize and protect channels and slopes subject to erosion. When installed perpendicular to the storm water flow, gabions act as a check dam allowing sediments to accumulate behind and within the open void structure. Gabion blankets, also called gabion mattresses, are used to line channels and swales to provide additional stability. Gabion blankets are often installed contiguously with gabion baskets.

#### Selection Criteria (if applicable), Material Requirements, Construction Specific

##### Selection Criteria

- The decision to place a gabion structure rather than a berm or rock check dam is based on whether the structural stability and pervious nature of gabions are required.
  - ❖ Gabion structures will manage storm water based on design criteria provided. The long-term stability of the structure does not rely upon vegetated growth like a berm does. Once built on a stable foundation, the gabion does not require a compacted fill like a berm requires. The gabion itself resists failure modes by mass.
  - ❖ Gabion mattresses are placed downstream of discharge locations of other storm water controls. The mattress is selected when placing rip rap into a channel will not prevent movement or erosion downstream.

##### Material Requirements

- Gabion fill is well-graded round river rock or Type A angular rip rap.
- Wire enclosures come in different configurations and can be assembled in the field or manufactured and delivered empty to the site.
- Gabion fasteners are of similar gage to the wire enclosure.
- Gabion mattresses may need additional anchors. These include steel angles, pipe, or railroad rails that are driven through the gabions at regular spacing.
- Gabions are bedded on filter fabric.

##### Construction Specifics

Gabions are installed in accordance with NMDOT standards and specifications. Placement of gabions includes the following:

- The gabion is either placed on firm bedrock or tuff or built on a compacted foundation.
- At ends not in the water course, gabions are built on stable banks.
- Gabions are stacked on each other in a staggered manner, much like masonry blocks.

## Appendix B, Control Measures (continued)

### Inspection and Maintenance

- Gabions that become unseated causing scouring underneath the structure require maintenance. The structure may need to be excavated down to the point of failure, and recompact and rebuilding the basket may be required.
- Gabion wire may break and rocks may spill out. The basket may be rebuilt or mended to restore function.
- Gabions that slip out of place are generally replaced rather than mended.
- Gabion blankets that slip out of position require additional anchorage. Anchorage methods include driving railroad rails into good material.



### Permanent Caps

#### General Description

This category of storm water control includes clay or soil, rock, concrete, asphalt, and HDPE caps.

#### Control Function

Caps are used primarily to control erosion and to isolate areas of potential soil contamination from storm water. Caps result in impermeable surfaces that remove the potential of water movement through the area capped.

## *Appendix B, Control Measures (continued)*

### **Selection Criteria (if applicable), Material Requirements, Construction Specifics**

#### *Selection Criteria*

Permanent caps are selected when no other alternative is available to prevent pollutants at a Site from migrating.

Facility usage such as frequent vehicle use and limited space may prevent other means, such as berms or ponds, from being used. The type of cap selected is also based upon the facility usage of the area. In areas where vehicle traffic may wear down the cap, a hard surface such as concrete or asphalt is selected.

#### *Material Requirements*

- Earthen caps are at least 24 in. thick and typically covered with rock or gravel to protect the cap from erosion. The type of earth cover selected is intended to be impervious with no intrusion of water into the area with pollutants.
- Hard caps such as concrete and asphalt are a minimum thickness depending upon use and vehicle traffic.
- HDPE caps typically are used to cover inlet or outlet points of sub-surface storm water conveyance systems (culverts, sediment basin pipes, etc.)

#### *Construction Specifics*

Caps are engineered to meet a specific need. Additional design considerations include installing diversions, curbs, berms, and cut-off walls to ensure storm water does not cause erosion features to form either near or on the cap itself.

Caps using earthen materials have specifications for material types and compaction requirements. Hard caps also have minimum testing requirements.

#### **Inspection and Maintenance**

- Typical inspections that lead to maintenance include condition assessments of diversions and the cap itself.
- Intrusions may occur with both earthen and hard caps. Weeds (growing in cracks), rodent burrows, large woody plants, or vehicular damage require repair or removal.
- Inspections noting erosional features that could cause migration of storm water to the cap are performed and BMPs added to remedy the feature.

## Appendix C

### Understanding the Analytical Results Plots

For each SMA where storm water samples were collected and analyzed from 2011 through 2021, the analytical results plots have been prepared. The purpose of the analytical plots is to present the analytical results in a manner that allows direct comparison with the TALs (ATAL, MTAL, or MQL) as defined in the Individual Permit. In 2019, the plot format changed to include inorganic and organic data for all confirmation monitoring samples collected at the SMA in one plot. The plot contains the results for all analyzed metals, weak acid dissociable cyanide, gross-alpha radioactivity and radium, and organic compounds analyzed in the storm water sample collected at the Site and associated SMA per the requirements set forth in Appendix B of the Permit. Baseline confirmation monitoring samples are represented by a circular symbol in the plot and are referred to as “b.” Initial corrective action confirmation monitoring samples are represented by a triangle symbol in the plot and are referred to as “c1.” Where applicable, subsequent corrective action confirmation monitoring samples at an SMA are represented by a square symbol in the plot and referred to as “c2” or “c3.” The plots are dynamic, and content will vary based on the amount of analytical data, number of samples collected, and number of monitoring stages at an SMA.

Analytical results for each analyte presented in the plots are normalized by calculating an exceedance ratio. This ratio is defined as the analytical result divided by applicable TAL (ATAL, MTAL, or MQL). Thus, results exceeding the TAL will be greater than an exceedance ratio of 1.0. The exceedance ratios are plotted on a log scale to allow the display of a larger range of values. A solid symbol on the plot represents a result that is detected above the MDL, while a hollow symbol represents a value that is considered a nondetect, meaning the analytical laboratory was not able to detect a concentration greater than the MDL. From 40 CFR Appendix B to Part 136, the MDL is defined as “...the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.”

For the storm water data, a nondetected result is either reported as the MDL value or the PQL value. The PQL is an estimation of the concentration measurement and is normally 2.5 to 10 times the MDL. During 2011 to 2014, nondetected analytes were reported at the value of the PQL. When reporting the PQL, the reported value for a nondetected result may be greater than or equal to a TAL (ATAL, MTAL, or MQL). However, starting in 2015, nondetected analytes were reported at the value of the MDL less than the TAL. When the result is a nondetect, half the MDL is used to calculate the geometric mean.

Between 2011 and 2014, several nondetected results reported at the PQL for benzo(a)pyrene and hexachlorobenzene were greater than their TALs (MQLs), and the MDLs for these constituents were also greater than their ATALs. In 2015, the Permittees changed the analytical method for benzo(a)pyrene to EPA method 8310. This change allows for the reporting of nondetects of this constituent below the ATAL. In 2015, the Permittees also changed the analytical method for hexachlorobenzene to EPA method 8081B. This method is the most sensitive commercially available EPA-approved method but consistently has an MDL greater than the TAL. These methods were in use by the Permittees starting in 2015.

BTVs in storm water for some metals, gross-alpha radioactivity, and PCBs where available, are also plotted to provide additional points of reference when evaluating the significance of the analytical result. The process for the determination of the BTVs is presented in a report prepared by the Permittees on PCBs in storm water and another report in 2013 on metals and selected radionuclides in storm water.

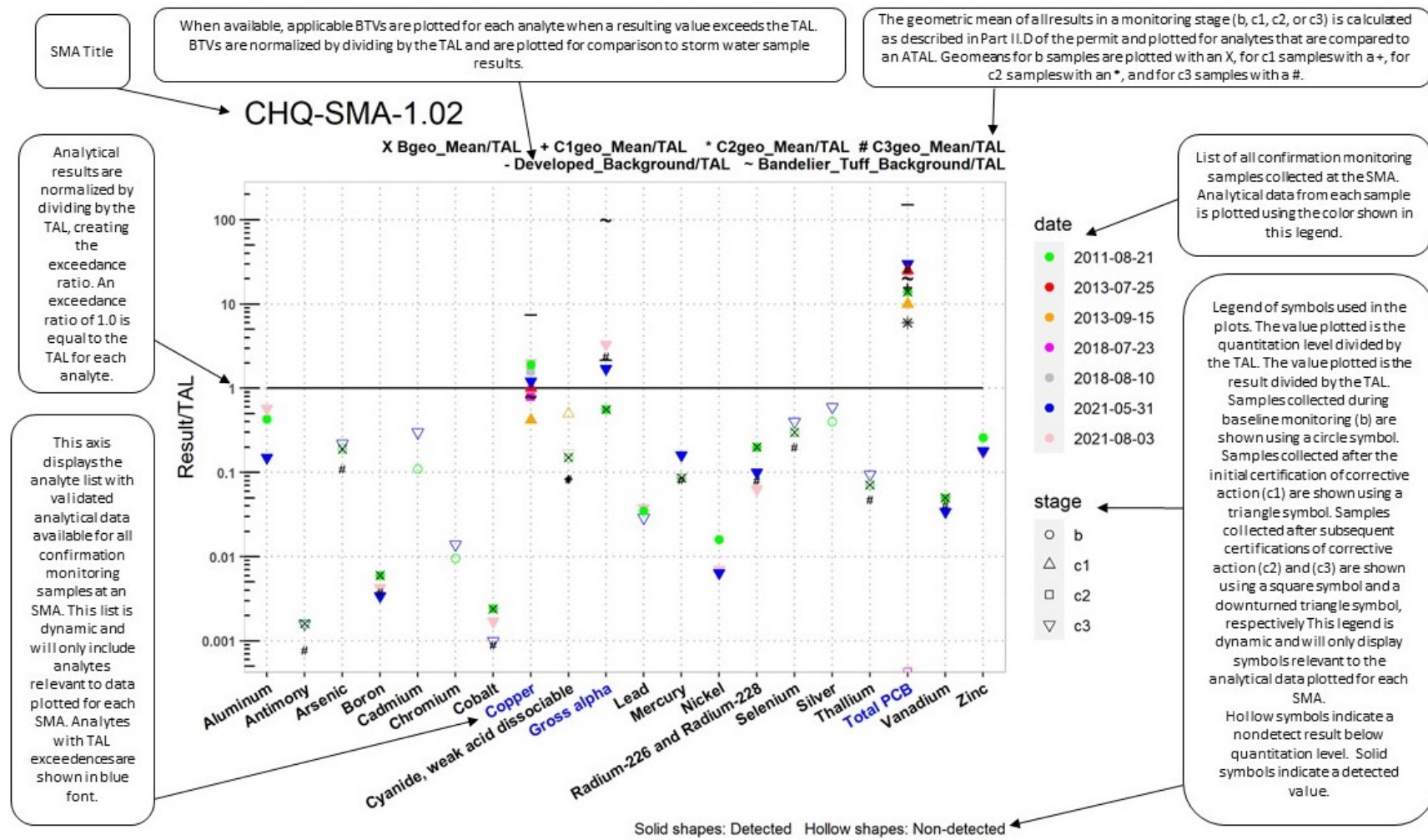
Analytical results meet the N3B minimum DQOs as outlined in N3B-PLN-SDM-1000, “Sample and Data Management Plan.” N3B-PLN-SDM-1000 sets the validation frequency criteria at 100% Level 1 examination and Level 2 verification of data, and 10% minimum Level 3 validation of data. A Level 1



examination assesses the completeness of the data as delivered from the analytical laboratory, identifies any reporting errors, and checks the usability of the data based on the analytical laboratory's evaluation of the data. A Level 2 verification evaluates the data to determine the extent to which the laboratory met the analytical method and the contract-specific quality control and reporting requirements. A Level 3 validation includes Levels 1 and 2 criteria and determines the effect of potential anomalies encountered during analysis and possible effects on data quality and usability. A Level 3 validation is performed manually with method-specific data validation procedures. Laboratory analytical data are validated by N3B personnel as outlined in N3B-PLN-SDM-1000, N3B-AP-SDM-3000: "General Guidelines for Data Validation," N3B-AP-SDM-3014: "Examination and Verification of Analytical Laboratory Data," and additional method-specific analytical data validation procedures. All associated validation procedures have been developed, where applicable, from the EPA QA/G-8 Guidance on Environmental Data Verification and Data Validation, the Department of Defense/Department of Energy Consolidated Quality Systems Manual for Environmental Laboratories, the EPA National Functional Guidelines for Data Validation, and the American National Standards Institute/American Nuclear Society 41.5 Verification and Validation of Radiological Data.

The following schematic provides more specific details related to individual components of the analytical results plots.

## Appendix C, Understanding the Analytical Results Plots (continued)



## Appendix C, Understanding the Analytical Results Plots (continued)

These rows present the TAL value used in the plot, the applicable MQL, ATAL, and MTAL values, and the unit of measurement reported for each analyte as established in Part I.C of the Permit.

This is the geometric mean of all baseline monitoring data for the analytes that are compared to an ATAL in the plot.

This is the geometric mean of all corrective action monitoring data for the analytes that are compared to an ATAL in the plot. As applicable, SMAs with subsequent corrective action monitoring data for an analyte will have a row titled C2geo\_mean/ATAL and a row titled C3geo\_mean/ATAL

Analytical data for each sample date plotted are displayed on two rows. The analytical results are normalized to the TAL and listed here as an exceedance ratio. The top row is the ratio of detected results, with exceedances in bold. The second row is the ratio of nondetected results. NA indicates no analytical results.

This row represents the analyte list with validated analytical data available for confirmation monitoring samples at an SMA and corresponds to the analytes displayed on the plot.

SMA Title  
CHQ-SMA-1.02

	Aluminum	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Cyanide, weak acid dissociable	Gross alpha	Lead	Mercury	Nickel	Radium-226 and Radium-228	Selenium	Silver	Thallium	Total PCB	Vanadium	Zinc
TAL	750	640	9	5000	1	210	1000	4.3	10	15	17	0.77	170	30	5	0.5	6.3	0.00064	100	42
MQL	2.5	60	0.5	100	1	10	50	0.5	10	NA	0.5	0.005	0.5	NA	5	0.5	0.5	NA	50	20
ATAL	NA	640	9	5000	NA	NA	1000	NA	10	15	NA	0.77	NA	30	5	NA	6.3	0.00064	100	NA
MTAL	750	NA	340	NA	0.6	210	NA	4.3	22	NA	17	1.4	170	NA	20	0.4	NA	NA	NA	42
unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	pCi/L	ug/L	ug/L	ug/L	pCi/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Bgeo_mean/ATAL	NA	0.0016	0.19	0.0060	NA	NA	0.0024	NA	0.15	0.56	NA	0.086	NA	0.20	0.30	NA	0.071	<b>14</b>	0.050	NA
C1geo_mean/ATAL	NA	NA	NA	NA	NA	NA	NA	NA	0.084	NA	NA	NA	NA	NA	NA	NA	NA	<b>16</b>	NA	NA
C2geo_mean/ATAL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>6.0</b>	NA	NA
C3geo_mean/ATAL	NA	0.00078	0.11	0.0038	NA	NA	0.00091	NA	0.084	<b>2.4</b>	NA	0.083	NA	0.081	0.20	NA	0.048	<b>26</b>	0.041	NA
2011-08-21 d	0.43	NA	NA	0.0060	NA	NA	0.0024	<b>1.9</b>	NA	0.56	0.035	NA	0.016	0.20	NA	NA	NA	<b>14</b>	0.050	0.26
2011-08-21 nd	NA	0.0016	0.19	NA	0.11	0.0095	NA	NA	0.15	NA	NA	0.086	NA	NA	0.30	0.40	0.071	NA	NA	NA
2013-07-25 d	NA	NA	NA	NA	NA	NA	NA	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>25</b>	NA	NA
2013-07-25 nd	NA	NA	NA	NA	NA	NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2013-09-15 d	NA	NA	NA	NA	NA	NA	NA	0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>10</b>	NA	NA
2013-09-15 nd	NA	NA	NA	NA	NA	NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2018-07-23 d	NA	NA	NA	NA	NA	NA	NA	0.79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2018-07-23 nd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2018-08-10 d	NA	NA	NA	NA	NA	NA	NA	<b>1.6</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>6.0</b>	NA	NA
2018-08-10 nd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2021-05-31 d	0.15	NA	NA	0.0034	NA	NA	NA	<b>1.2</b>	NA	<b>1.7</b>	NA	0.16	0.0064	0.10	NA	NA	NA	<b>30</b>	0.034	0.18
2021-05-31 nd	NA	0.0016	0.22	NA	0.30	0.014	0.0010	NA	0.17	NA	0.029	NA	NA	NA	0.40	0.60	0.095	NA	NA	NA
2021-08-03 d	0.57	NA	NA	0.0043	NA	NA	0.0017	<b>2.0</b>	NA	<b>3.3</b>	0.038	NA	0.0070	0.063	NA	NA	NA	<b>22</b>	0.049	0.17
2021-08-03 nd	NA	0.0016	0.22	NA	0.30	0.014	NA	NA	0.17	NA	NA	0.087	NA	NA	0.40	0.60	0.095	NA	NA	NA

Bold font indicate TAL exceedance; d=detected\_result/TAL, nd=nondetected\_result/TAL



## Appendix D References

*The following reference list includes documents cited in this appendix. Parenthetical information following each reference provides the author(s), publication date, and ERID, ESHID, or EMID. ERIDs were assigned by Los Alamos National Laboratory's (the Laboratory's) Associate Directorate for Environmental Management (IDs through 599999); ESHIDs were assigned by the Laboratory's Associate Directorate for Environment, Safety, and Health (IDs 600000 through 699999); and EMIDs are assigned by N3B (IDs 700000 and above).*

- Buckland, C., April 20, 1948. "Sandia Canyon—Clearing for Future Public Road, Picnic Area," Los Alamos Scientific Laboratory memorandum to R.J. Westcott from C. Buckland, Los Alamos, New Mexico. (Buckland 1948, 006001)
- DOE (U.S. Department of Energy), October 29, 1986. "Los Alamos Comprehensive Environmental Assessment and Response Program (CEARP) Phase I: Installation Assessment," draft, Los Alamos, New Mexico. (DOE 1986, 008657)
- DOE (U.S. Department of Energy), December 17, 2018. "Request for Certificates of Completion for Four Solid Waste Management Units in the Lower Mortandad/Cedro Canyons Aggregate Area," U.S. Department of Energy letter EM-LA-40AD-00365 to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), Los Alamos, New Mexico. (DOE 2018, 700157)
- DOE (U.S. Department of Energy), December 17, 2018. "Request for Certificates of Completion for 10 Solid Waste Management Units and 10 Areas of Concern in the Threemile Canyon Aggregate Area," U.S. Department of Energy letter EM-LA-40AD-00370 to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), Los Alamos, New Mexico. (DOE 2018, 700158)
- DOE (U.S. Department of Energy), December 19, 2018. "Response to Denial of Request for Certificates of Completion for Two Solid Waste Management Units in the Delta Prime Site Aggregate Area," U.S. Department of Energy letter EM-LA-40AD-00368 to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), Los Alamos, New Mexico. (DOE 2018, 700159)
- DOE (U.S. Department of Energy), April 22, 2019. "Submittal of the Addendum to the Phase II Investigation Report for Middle Los Alamos Canyon Aggregate Area," U.S. Department of Energy letter to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), document EM2019-0090, Los Alamos, New Mexico. (DOE 2019, 700403)
- DOE (U.S. Department of Energy), April 25, 2019. "Submittal of the Supplemental Investigation Report for S-Site Aggregate Area, Revision 1," U.S. Department of Energy letter to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), document EM2019-0048, Los Alamos, New Mexico. (DOE 2019, 700414)
- DOE (U.S. Department of Energy), April 25, 2019. "Submittal of the Technical Area 21 Delta Prime West Investigations Letter Report," U.S. Department of Energy letter to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), document EM2019-0410, Los Alamos, New Mexico. (DOE 2019, 700717)
- DOE (U.S. Department of Energy), July 23, 2019. "Request for Certificate of Completion with Controls for Solid Waste Management Unit 03-055(c)," U.S. Department of Energy letter to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), Los Alamos, New Mexico. (DOE 2019, 700512)



## Appendix D, References (continued)

- DOE (U.S. Department of Energy), November 14, 2019. "Submittal of the Field Completion Letter Report for Aggregate Areas Known Cleanup Sites Campaign: SWMU 39-002(a), SWMU 46-004(q), SWMU 15-008(b), and SWMU 15-007(c)," U.S. Department of Energy letter to J. Kielling (NMED-HWB) from A. Duran (DOE EM-LA), document EM2019-0360, Los Alamos, New Mexico. (DOE 2019, 700665)
- DOE (U.S. Department of Energy), December 16, 2019. "Submittal of the Triennial Ordnance Survey Report, Solid Waste Management Units 00-011(a, d, and e), Guaje/Barrancas/Rendija Canyons Aggregate Area," U.S. Department of Energy letter to D. Cobrain (NMED-HWB) from A. Duran (DOE EM-LA), document EM2019-0231, Los Alamos, New Mexico. (DOE 2019, 700591)
- DOE (U.S. Department of Energy), December 16, 2019. "Submittal of the 2019 Biennial Asphalt Monitoring and Removal Report for Area of Concern C-00-041, Guaje/Barrancas/Rendija Canyons Aggregate Area," U.S. Department of Energy letter to D. Cobrain (NMED-HWB) from A. Duran (DOE EM-LA), document EM2019-0409, Los Alamos, New Mexico. (DOE 2019, 700716)
- DOE (U.S. Department of Energy), February 3, 2020. "Submittal of the Supplemental Investigation Report for Cañon de Valle Aggregate Area, Technical Area 14, Revision 1," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2020-1218, Los Alamos, New Mexico. (DOE 2020, 700746)
- DOE (U.S. Department of Energy), February 19, 2020. "Request for Certificates of Completion for 31 Solid Waste Management Units and 10 Areas of Concern in the S-Site Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2020-1184, Los Alamos, New Mexico. (DOE 2020, 700764)
- DOE (U.S. Department of Energy), March 31, 2020. "U.S. Department of Energy Environmental Management Los Alamos Field Office Transition to Essential Mission Critical Activities Notification," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2020-1393, Los Alamos, New Mexico. (DOE 2020, 700826)
- DOE (U.S. Department of Energy), April 9, 2020. "Submittal of the Addendum to the Phase II Investigation Report for Middle Los Alamos Canyon Aggregate Area, Revision 1," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2020-1364, Los Alamos, New Mexico. (DOE 2020, 700846)
- DOE (U.S. Department of Energy), June 29, 2020. "Submittal of the Supplemental Investigation Report for Upper Mortandad Canyon Aggregate Area, Revision 1," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EM2020-0252 and EM2020-0138, Los Alamos, New Mexico. (DOE 2020, 700951)
- DOE (U.S. Department of Energy), July 7, 2020. "Request for Certificates of Completion for Five Solid Waste Management Units in the Pueblo Canyon Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), Los Alamos, New Mexico. (DOE 2020, 700966)
- DOE (U.S. Department of Energy), August 5, 2020. "Request for Certificate of Completion without Controls for Solid Waste Management Unit 01-003(e)," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), Los Alamos, New Mexico. (DOE 2020, 700997)

## Appendix D, References (continued)

- DOE (U.S. Department of Energy), September 16, 2020. "Submittal of the Supplemental Investigation Report for Upper Cañada del Buey Aggregate Area, Revision 1," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EM2020-0267 and EM2020-0396, Los Alamos, New Mexico. (DOE 2020, 701038)
- DOE (U.S. Department of Energy), September 28, 2020. "Submittal of the Delta Prime Site Aggregate Area Progress Report," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EM2020-0430, Los Alamos, New Mexico. (DOE 2020, 701048)
- DOE (U.S. Department of Energy), September 30, 2020. "Submittal of the Investigation Report for Chaquehui Canyon Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EM2020-0305, Los Alamos, New Mexico. (DOE 2020, 701046)
- DOE (U.S. Department of Energy), September 30, 2020. "Submittal of the Lower Water/Indio Canyon Aggregate Area Progress Report," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA2020-1604, Los Alamos, New Mexico. (DOE 2020, 701052)
- DOE (U.S. Department of Energy), September 30, 2020. "Submittal of the South Ancho Canyon Aggregate Area Progress Report," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA2020-1603, Los Alamos, New Mexico. (DOE 2020, 701054)
- DOE (U.S. Department of Energy), November 4, 2020. "Request for Certificates of Completion for 16 Solid Waste Management Units and 9 Areas of Concern in the Upper Mortandad Canyon Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA2021-0002, Los Alamos, New Mexico. (DOE 2020, 701096)
- DOE (U.S. Department of Energy), December 2, 2020. "Request for Certificates of Completion for Three Solid Waste Management Units and Four Areas of Concern in the Potrillo and Fence Canyons Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA2021-0037, Los Alamos, New Mexico. (DOE 2020, 701148)
- DOE (U.S. Department of Energy), January 28, 2021. "Request for Certificates of Completion for 6 Solid Waste Management Units and 11 Areas of Concern in the Cañon de Valle Aggregate Area, Technical Area 14," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2021-0085-02-01, Los Alamos, New Mexico. (DOE 2021, 701203)
- DOE (U.S. Department of Energy), March 2, 2021. "Submittal of the Phase II Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 2," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-0151-02-01, EM2021-0021, Los Alamos, New Mexico. (DOE 2021, 701255)
- DOE (U.S. Department of Energy), March 5, 2021. "Submittal of the Phase II Investigation Report for Upper Los Alamos Canyon Aggregate Area, Revision 1," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-0166-02-01, EM2021-0035, EM2020-0366, Los Alamos, New Mexico. (DOE 2021, 701261)

## Appendix D, References (continued)

- DOE (U.S. Department of Energy), March 9, 2021. "Request for Certificates of Completion for Five Solid Waste Management Units in the Cañon de Valle Aggregate Area and One Solid Waste Management Unit and One Area of Concern in the S-Site Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2021-052-02-001, Los Alamos, New Mexico. (DOE 2021, 701323)
- DOE (U.S. Department of Energy), March 25, 2021. "Submittal of the Solid Waste Management Unit Assessment Work Plan for Middle DP Road Site, Revision 1," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-0190-02-01, EM2021-0095, EM2021-0089, Los Alamos, New Mexico. (DOE 2021, 701344)
- DOE (U.S. Department of Energy), March 31, 2021. "Submittal of the Phase II Investigation Work Plan for Chaquehui Canyon Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-0183-02-01, EM2021-0038, Los Alamos, New Mexico. (DOE 2021, 701355)
- DOE (U.S. Department of Energy), April 28, 2021. "Request for Certificates of Completion for 34 Solid Waste Management Units and 5 Areas of Concern in the Upper Cañada del Buey Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2021-0208-02-001, Los Alamos, New Mexico. (DOE 2021, 701402)
- DOE (U.S. Department of Energy), May 27, 2021. "Submittal of the Supplemental Investigation Report for Lower Sandia Canyon Aggregate Area," U.S. Department of Energy letter to K. Pierard (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF113-02-001, EM2021-0245, EM2021-0087, Los Alamos, New Mexico. (DOE 2021, 701448)
- DOE (U.S. Department of Energy), June 25, 2021. "Request for Certificates of Completion for Eleven Solid Waste Management Units and Three Areas of Concern in the Los Alamos Canyon Aggregate Area," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2021-BF109-02-001, Los Alamos, New Mexico. (DOE 2021, 701495)
- DOE (U.S. Department of Energy), August 31, 2021. "Submittal of the Phase II Investigation Report for Chaquehui Canyon Aggregate Area," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF153-02-001, EM2021-0421, Los Alamos, New Mexico. (DOE 2021, 701606)
- DOE (U.S. Department of Energy), September 21, 2021. "Submittal of the Phase II Investigation Work Plan for Potrillo and Fence Canyons Aggregate Area," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF161-02-001, EM2021-0341, Los Alamos, New Mexico. (DOE 2021, 701660)
- DOE (U.S. Department of Energy), September 29, 2021. "Submittal of the Investigation Report for South Ancho Canyon Aggregate Area," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF163-02-001, EM2021-0455, Los Alamos, New Mexico. (DOE 2021, 701686)

## Appendix D, References (continued)

- DOE (U.S. Department of Energy), September 30, 2021. "Submittal of the Investigation Report for Lower Water/Indio Canyons Aggregate Area," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF162-02-001, EM2021-0344, Los Alamos, New Mexico. (DOE 2021, 701694)
- DOE (U.S. Department of Energy), October 18, 2021. "Request for Certificates of Completion for Eight Solid Waste Management Units and Five Areas of Concern in the Lower Sandia Canyon Aggregate Area," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), document EMLA-2021-BF166-02-001, Los Alamos, New Mexico. (DOE 2021, 701726)
- DOE (U.S. Department of Energy), October 21, 2021. "Submittal of the Phase II Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 3," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF173-02-001, EM2021-0579, EM2021-0336, Los Alamos, New Mexico. (DOE 2021, 701729)
- DOE (U.S. Department of Energy), October 28, 2021. "Submittal of Addendum to the Investigation Report for Chaquehui Canyon Aggregate Area for Material Disposal K, at Technical Area 33," U.S. Department of Energy letter to R. Maestas (NMED-HWB) from A. Duran (DOE EM-LA), documents EMLA-2021-BF156-02-001, EM2021-0464, Los Alamos, New Mexico. (DOE 2021, 701735)
- DOE (U.S. Department of Energy), December 16, 2021. "Submittal of the 2021 Biennial Asphalt Monitoring and Removal Report for Area of Concern C-00-041, Guaje/Barrancas/Rendija Canyons Aggregate Area," U.S. Department of Energy letter to R. Shean (NMED-HWB) from M. Lee Bishop for A. Duran (DOE EM-LA), documents EMLA-2022-BF023-02-001, EM2021-0492, Los Alamos, New Mexico. (DOE 2021, 701812)
- EPA (U.S. Environmental Protection Agency), March 26, 2020. "COVID-19 Implications for EPA's Enforcement and Compliance Assurance Program," U.S. Environmental Protection Agency memorandum to all governmental and private sector partners from S. Bodine (EPA), Washington, D.C. (EPA 2020, 700828)
- IT Corporation (International Technology Corporation), March 1995. "Closure Certification Report for the Technical Area 40 Scrap Detonation Site (Condensed)," report prepared for Los Alamos National Laboratory, Los Alamos, New Mexico. (IT Corporation 1995, 057521)
- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. I of IV (TA-0 through TA-9), Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007511)
- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. II of IV (TA-10 through TA-25) Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007512)
- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. III of IV (TA-26 through TA-50), Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007513)
- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. IV of IV (TA-51 through TA-74), Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007514)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), July 1991. "Final Closure Plan, TA-40 Scrap Detonation Site, Revision 1," Los Alamos National Laboratory document LA-UR-91-2399, Los Alamos, New Mexico. (LANL 1991, 007653)
- LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1129," Los Alamos National Laboratory document LA-UR-92-800, Los Alamos, New Mexico. (LANL 1992, 007666)
- LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1071," Los Alamos National Laboratory document LA-UR-92-810, Los Alamos, New Mexico. (LANL 1992, 007667)
- LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1079," Los Alamos National Laboratory document LA-UR-92-850, Los Alamos, New Mexico. (LANL 1992, 007668)
- LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1122," Los Alamos National Laboratory document LA-UR-92-925, Los Alamos, New Mexico. (LANL 1992, 007671)
- LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1147," Los Alamos National Laboratory document LA-UR-92-969, Los Alamos, New Mexico. (LANL 1992, 007672)
- LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1078," Los Alamos National Laboratory document LA-UR-92-838, Los Alamos, New Mexico. (LANL 1992, 043454)
- LANL (Los Alamos National Laboratory), June 1993. "RFI Work Plan for Operable Unit 1130," Los Alamos National Laboratory document LA-UR-93-1152, Los Alamos, New Mexico. (LANL 1993, 015313)
- LANL (Los Alamos National Laboratory), June 1993. "RFI Work Plan for Operable Unit 1098," Los Alamos National Laboratory document LA-UR-92-3825, Los Alamos, New Mexico. (LANL 1993, 015314)
- LANL (Los Alamos National Laboratory), June 1993. "RFI Work Plan for Operable Unit 1132," Los Alamos National Laboratory document LA-UR-93-768, Los Alamos, New Mexico. (LANL 1993, 015316)
- LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086," Los Alamos National Laboratory document LA-UR-92-3968, Los Alamos, New Mexico. (LANL 1993, 020946)
- LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1114," Los Alamos National Laboratory document LA-UR-93-1000, Los Alamos, New Mexico. (LANL 1993, 020947)
- LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1082," Los Alamos National Laboratory document LA-UR-93-1196, Los Alamos, New Mexico. (LANL 1993, 020948)
- LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1157," Los Alamos National Laboratory document LA-UR-93-1230, Los Alamos, New Mexico. (LANL 1993, 020949)
- LANL (Los Alamos National Laboratory), August 1993. "RFI Work Plan for Operable Unit 1140," Los Alamos National Laboratory document LA-UR-93-1940, Los Alamos, New Mexico. (LANL 1993, 020952)
- LANL (Los Alamos National Laboratory), August 1993. "RFI Work Plan for Operable Unit 1111," Los Alamos National Laboratory document LA-UR-93-2166, Los Alamos, New Mexico. (LANL 1993, 026068)
- LANL (Los Alamos National Laboratory), March 1994. "RFI Phase Report, Operable Unit 1071, SWMU Aggregate O-D, Ordnance Impact Areas," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1994, 059427)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), May 1994. "RFI Work Plan for Operable Unit 1085," Los Alamos National Laboratory document LA-UR-94-1033, Los Alamos, New Mexico. (LANL 1994, 034755)
- LANL (Los Alamos National Laboratory), May 1994. "RFI Work Plan for Operable Unit 1100," Los Alamos National Laboratory document LA-UR-94-1097, Los Alamos, New Mexico. (LANL 1994, 034756)
- LANL (Los Alamos National Laboratory), June 13, 1994. "Addendum to the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan for Operable Unit (OU) 1129," Los Alamos National Laboratory letter (EM/ER:94-J242) to T.J. Taylor (DOE ER Program Manager) from J. Jansen (ER Program Manager), Los Alamos, New Mexico. (LANL 1994, 039932)
- LANL (Los Alamos National Laboratory), July 1994. "RFI Work Plan for Operable Unit 1082, Addendum I," Los Alamos National Laboratory document LA-UR-94-1580, Los Alamos, New Mexico. (LANL 1994, 039440)
- LANL (Los Alamos National Laboratory), September 1994. "Phase II RFI Work Plan for SWMU 3-010(a), Mercury Cleanup, OU 1114, Environmental Restoration Project," report prepared for Los Alamos National Laboratory by the ERM Program Management Company and Golder Federal Services, Inc., Los Alamos, New Mexico. (LANL 1994, 042624)
- LANL (Los Alamos National Laboratory), January 31, 1995. "Field Unit 3, Operable Unit 1122, Technical Area 33, RFI Report for PRSs 33-004(d), 33-004(g), 33-004(h), 33-004(i), 33-005(a), 33-005(b), 33-005(c), 33-010(e), 33-010(f), 33-011(e), 33-012(a), 33-015, 33-007(c), 33-011(a)," Los Alamos National Laboratory document LA-UR-95-0882, Los Alamos, New Mexico. (LANL 1995, 071262)
- LANL (Los Alamos National Laboratory), April 1995. "RFI Report for Potential Release Sites 39-002(a-f), 39-005, 39-006(a), 39-007(a) (d) (located in former Operable Unit 1132)," Los Alamos National Laboratory document LA-UR-95-1069, Los Alamos, New Mexico. (LANL 1995, 046190)
- LANL (Los Alamos National Laboratory), April 28, 1995. "RFI Report for Field Unit 1, SWMU 3-010(a)," Los Alamos National Laboratory document LA-UR-95-1485, Los Alamos, New Mexico. (LANL 1995, 046195)
- (Los Alamos National Laboratory), May 5, 1995. "RFI Report for PRS 31-001," Los Alamos National Laboratory document LA-UR-95-1542, Los Alamos, New Mexico. (LANL 1995, 058085)
- LANL (Los Alamos National Laboratory), June 12, 1995. "RFI Report for PRSs 1-002, 45-001, 45-002, 45-003, 45-004, C-45-001," Los Alamos National Laboratory document LA-UR-95-1542, Los Alamos, New Mexico. (LANL 1995, 048856)
- LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory document LA-UR-95-1038, Los Alamos, New Mexico. (LANL 1995, 057225)
- LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory document LA-UR-95-731, Los Alamos, New Mexico. (LANL 1995, 057590)
- LANL (Los Alamos National Laboratory), August 1995. "RFI Report for Potential Release Sites 42-001(a), 42-001(b), 42-001(c), 42-002(a), 42-002(b), 42-003," Los Alamos National Laboratory document LA-UR-95-2881, Los Alamos, New Mexico. (LANL 1995, 050056)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), September 1995. "RFI Report for Potential Release Sites 50-006(c), 50-007, 50-008, 50-006(a) (located in former Operable Unit 1147)," Los Alamos National Laboratory document LA-UR-95-2738, Los Alamos, New Mexico. (LANL 1995, 049925)
- LANL (Los Alamos National Laboratory), September 1995. "RFI Report for Potential Release Sites 48-001, 48-002(e), 48-003, 48-005, 48-007(a), 48-007(b), 48-007(c), 48-007(d), 48-007(f), 48-010," Los Alamos National Laboratory document LA-UR-95-3328, Los Alamos, New Mexico. (LANL 1995, 050289)
- LANL (Los Alamos National Laboratory), September 1995. "RFI Report for Potential Release Sites 36-003(a), 36-003(b), 36-005, C-36-003 (located in former Operable Unit 1130)," Los Alamos National Laboratory document LA-UR-95-3375, Los Alamos, New Mexico. (LANL 1995, 053985)
- LANL (Los Alamos National Laboratory), September 1995. "Expedited Cleanup Completion Report for Potential Release Site 22-015(c), Outfall from a Former Plating and Etching Facility, Revision 1," Los Alamos National Laboratory document LA-UR-96-467, Los Alamos, New Mexico. (LANL 1995, 091212)
- LANL (Los Alamos National Laboratory), September 5, 1995. "RFI Report for Solid Waste Management Units 10-001(a–d)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1995, 049974)
- LANL (Los Alamos National Laboratory), September 29, 1995. "RFI Report for Field Unit 3, Operable Unit 1122, Technical Area 33, RFI Report for PRSs 33-003(a), 33-004(a), 33-007(c), 33-009, 33-011(d), 33-013, 33-016, 33-017, Revised Sampling Plans for PRSs 33-003(b), 33-004(k), 33-008(a), 33-008(b), C-33-001, C-33-002," Los Alamos National Laboratory document LA-UR-95-3626, Los Alamos, New Mexico. (LANL 1995, 071300)
- LANL (Los Alamos National Laboratory), October 30, 1995. "RFI Report for Field Unit 2 (OU 1086), Potential Release Sites 15-004(b,c), 15-004(a,d), 15-004(f), 15-007(b), 15-008(a,b), 15-012(b), 15-009(e,j), C-15-004," Environmental Restoration Project, Los Alamos National Laboratory document LA-UR-95-3738, Los Alamos, New Mexico. (LANL 1995, 050294)
- LANL (Los Alamos National Laboratory), November 1995. "Task/Site Work Plan for Operable Unit 1049, Los Alamos Canyon and Pueblo Canyon," Los Alamos National Laboratory document LA-UR-95-2053, Los Alamos, New Mexico. (LANL 1995, 050290)
- LANL (Los Alamos National Laboratory), November 2, 1995. "RFI Report for Potential Release Sites 18-002(a–c), 18-003(a–h), 18-004(a,b), 18-005(a), 18-008, 18-010(b–f), 18-011, 18-012(a–c), 18-013, 27-002, PCO Wells, LACEF Monitoring Wells, Wetlands (located in former Operable Unit 1093)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1995, 055527)
- LANL (Los Alamos National Laboratory), December 1995. "RFI Report for Potential Release Sites 33-004(b), 33-004(c), 33-004(j), 33-004(m), 33-006(a), 33-006(b), 33-007(a), 33-007(b), 33-010(a), 33-010(b), 33-010(c), 33-010(d), 33-010(g), 33-010(h), 33-011(b), 33-011(c), 33-014," Los Alamos National Laboratory document LA-UR-95-4439, Los Alamos, New Mexico. (LANL 1995, 051903)
- LANL (Los Alamos National Laboratory), January 1996. "Voluntary Corrective Action Completion Report for Potential Release Sites 20-003(c) and 53-010, Revision 1," Los Alamos National Laboratory document LA-UR-96-1089, Los Alamos, New Mexico. (LANL 1996, 053775)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), January 1996. "Voluntary Corrective Action Completion Report for Potential Release Site C-36-001, Test Containment Vessel, Revision 1," Los Alamos National Laboratory document LA-UR-96-276, Los Alamos, New Mexico. (LANL 1996, 053779)
- LANL (Los Alamos National Laboratory), January 1996. "Voluntary Corrective Action Completion Report for Potential Release Site 39-002(c), Waste Container Storage Area, Revision 1," Los Alamos National Laboratory document LA-UR-96-445, Los Alamos, New Mexico. (LANL 1996, 054401)
- LANL (Los Alamos National Laboratory), February 1996. "Interim Action Report for Potential Release Site 33-007(c)," Los Alamos National Laboratory document LA-UR-96-710, Los Alamos, New Mexico. (LANL 1996, 052919)
- LANL (Los Alamos National Laboratory), February 1996. "RFI Report for 53 Potential Release Sites in TA-3, TA-59, TA-60, TA-61," Los Alamos National Laboratory document LA-UR-96-726, Los Alamos, New Mexico. (LANL 1996, 052930)
- LANL (Los Alamos National Laboratory), February 1996. "RFI Report for Potential Release Sites at TA-14 and TA-12/67 (located in former Operable Unit 1085)," Los Alamos National Laboratory document LA-UR-96-511, Los Alamos, New Mexico. (LANL 1996, 054086)
- LANL (Los Alamos National Laboratory), March 1996. "RFI Report for Potential Release Sites at TAs-20, -53, and -72 (located in former Operable Unit 1100)," Los Alamos National Laboratory document LA-UR-96-906, Los Alamos, New Mexico. (LANL 1996, 054466)
- LANL (Los Alamos National Laboratory), April 1996. "Interim Action Report for TA-10, Bayo Canyon Shrapnel," Los Alamos National Laboratory document LA-UR-96-1088, Los Alamos, New Mexico. (LANL 1996, 054491)
- LANL (Los Alamos National Laboratory), May 1996. "Interim Action Plan for Potential Release Site 36-001," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1996, 054449)
- LANL (Los Alamos National Laboratory), May 1996. "Interim Action Report for Potential Release Site 33-007(b)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1996, 054623)
- LANL (Los Alamos National Laboratory), May 1996. "RFI Report for Potential Release Sites at TA-15, 15-001, 15-002, 15-004(g,h), 15-005(b,c), 15-006(c,d), 15-007(a), 15-008(c,g), 15-009(a,f,i,k), 15-010(a-c), 15-011(a-c), 15-012(a), 15-014(a,b,d,e,g-l), C-15-001, C-15-005, C-15-007, C-15-010, and C-15-011 (located in former Operable Unit 1086)," Los Alamos National Laboratory document LA-UR-95-1685, Los Alamos, New Mexico. (LANL 1996, 054977)
- LANL (Los Alamos National Laboratory), June 1996. "RFI Report for Potential Release Sites 35-003(d, e, f, g, l, m, o, q, and r), 35-016(g and h)," Los Alamos National Laboratory document LA-UR-96-1605, Los Alamos National Laboratory. (LANL 1996, 054422)
- LANL (Los Alamos National Laboratory), June 1996. "RFI Report for Potential Release Sites at TA-36, 36-001, 36-004(d), (Skunk Works and Burn [P]its), 36-006 (located in former Operable Unit 1130)," Los Alamos National Laboratory document LA-UR-96-2139, Los Alamos, New Mexico. (LANL 1996, 054733)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), June 1996. "Voluntary Corrective Action Completion Report for Solid Waste Management Units at TA-33, 33-010(a), Canyon-Side Disposal Area, 33-010(d), Surface Disposal Area, 33-010(g), Canyon-Side Disposal Area, 33-011(b), General Storage Area," Los Alamos National Laboratory document LA-UR-96-1839, Los Alamos, New Mexico. (LANL 1996, 054755)
- LANL (Los Alamos National Laboratory), June 1996. "RFI Report for Potential Release Sites in TA-46, 46-003(h), 46-004(b), 46-004(g), 46-004(h), 46-004(m), 46-004(q), 46-004(s), 46-004(u), 46-004(v), 46-004(x), 46-004(y), 46-004(z), 46-004(a2), 46-004(b2), 46-004(c2), 46-004(d2), 46-004(e2), 46-004(f2), 46-006(a), 46-006(b), 46-006(c), 46-006(d), 46-006(f), 46-006(g), 46-007, 46-008(b), 46-010(d), C-46-002, C-46-003," Los Alamos National Laboratory document LA-UR-96-1957, Los Alamos, New Mexico. (LANL 1996, 054929)
- LANL (Los Alamos National Laboratory), September 1996. "Voluntary Corrective Action Report for Potential Release Site 15-004(b), Firing Site A," Los Alamos National Laboratory document LA-UR-96-3339, Los Alamos, New Mexico. (LANL 1996, 055046)
- LANL (Los Alamos National Laboratory), September 1996. "Voluntary Corrective Action Completion Report for Potential Release Site 36-003(b), Septic System," Los Alamos National Laboratory document LA-UR-96-3346, Los Alamos, New Mexico. (LANL 1996, 055072)
- LANL (Los Alamos National Laboratory), September 1996. "RFI Report for Potential Release Sites 2-004(a through f), 2-008(b), and 2-012," Los Alamos National Laboratory document LA-UR-96-3155, Los Alamos, New Mexico. (LANL 1996, 055226)
- LANL (Los Alamos National Laboratory), September 1996. "Phase II and Voluntary Corrective Action Report for Potential Release Sites at TA-32: 32-001, Former Incinerator; 32-002(a,b), Former Septic Systems; 32-003, Former Transformer; 32-004, Former Radioactive Source Vault, Drain Line, and Outfall," Los Alamos National Laboratory document LA-UR-96-3128, Los Alamos, New Mexico. (LANL 1996, 059178)
- LANL (Los Alamos National Laboratory), September 1996. "Voluntary Corrective Action Completion Report for Potential Release Sites at TA-16, 90s-Line: 16-026(m-p), 16-029(k,l,q,s,t,u), C-16-064, C-16-067," Los Alamos National Laboratory document LA-UR-96-3285, Los Alamos, New Mexico. (LANL 1996, 062537)
- LANL (Los Alamos National Laboratory), September 1996. "Voluntary Corrective Action Report for a Solid Waste Management Unit at TA-33, 33-007(c)," Los Alamos National Laboratory document LA-UR-96-3198, Los Alamos, New Mexico. (LANL 1996, 062541)
- LANL (Los Alamos National Laboratory), January 1997. "Sampling and Analysis Plan for TA-48," Los Alamos National Laboratory document LA-UR-97-4839, Los Alamos, New Mexico. (LANL 1997, 055326)
- LANL (Los Alamos National Laboratory), March 1997. "RFI Report for Potential Release Sites at TA-39, 39-001(a&b), 39-004(a-e), and 39-008 (located in former Operable Unit 1132)," Los Alamos National Laboratory document LA-UR-97-1408, Los Alamos, New Mexico. (LANL 1997, 055633)
- LANL (Los Alamos National Laboratory), March 1997. "Interim Action Report for Potential Release Site 33-006(a), Operable Unit 1122, Technical Area 33," Los Alamos National Laboratory document LA-UR-97-641, Los Alamos, New Mexico. (LANL 1997, 055865)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), March 20, 1997. "Voluntary Corrective Measures Plan for Potential Release Sites at TA-16: 16-005(d), 16-006(g,h), 16-013, 16-017, 16-025(x), 16-026(q), 16-029(g2,h2,w,x), 16-031(c,d), 16-034(p), C-16-065, C-16-068, C-16-074," Los Alamos National Laboratory document LA-UR-97-640, Los Alamos, New Mexico. (LANL 1997, 055653)
- LANL (Los Alamos National Laboratory), May 22, 1997. "Interim Action Report for TA-50, PRS 50-006(a) Activities," Los Alamos National Laboratory letter (EM/ER:97-178) to T.J. Taylor (DOE ER Program Manager) from J. Jansen (ER Program Manager), Los Alamos, New Mexico. (LANL 1997, 055834)
- LANL (Los Alamos National Laboratory), July 1997. "Interim Action Plan for Potential Release Sites 36-004(e) - I-J Firing Site, 15-008(f) - The Mounds, C-36-006(e) - Projectile Test Area," Los Alamos National Laboratory document LA-UR-97-2739, Los Alamos, New Mexico. (LANL 1997, 062453)
- LANL (Los Alamos National Laboratory), August 1997. "Voluntary Corrective Action Completion Plan for Potential Release Site 53-008, Boneyard," draft, Los Alamos National Laboratory document LA-UR-09-2465, Los Alamos, New Mexico. (LANL 1997, 056384)
- LANL (Los Alamos National Laboratory), September 1997. "Voluntary Corrective Action Completion Report for Potential Release Site 53-001(a), Storage Area," draft, Los Alamos National Laboratory document LA-UR-09-2464, Los Alamos, New Mexico. (LANL 1997, 056505)
- LANL (Los Alamos National Laboratory), September 1997. "Addendum to the RFI Report for Potential Release Sites at Technical Area 48 (Located in Former Operable Unit 1129)," Los Alamos National Laboratory document LA-UR-97-3112, Los Alamos, New Mexico. (LANL 1997, 056565)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for PRSs 0-018(a,b), Wastewater Treatment Plants," Los Alamos National Laboratory document LA-UR-97-3319, Los Alamos, New Mexico. (LANL 1997, 056614)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for TA-3 for Potential Release Sites 3-004(c,d), 3-007, 3-014(k,l,o), 3-021, 3-049(a), 3-052(b), 3-056(k), C-3-014," Los Alamos National Laboratory document LA-UR-97-3571, Los Alamos, New Mexico. (LANL 1997, 056660.4)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for Potential Release Sites at TAs -6, -8, -22, and -40 (located in former Operable Units 1157 and 1111)," Los Alamos National Laboratory document LA-UR-97-3316, Los Alamos, New Mexico. (LANL 1997, 056664)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for Potential Release Sites 22-012, 22-015 (a, b, d, e) (located in former Operable Unit 1111)," Los Alamos National Laboratory document LA-UR-97-3340, Los Alamos, New Mexico. (LANL 1997, 056749)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for Potential Release Sites at TA-16: 11-012(a,b), 13-003(a), 16-006(c,d), 16-010(a), 16-021(a), 16-026(c,d,v), 16-028(a), 16-030(g)," Los Alamos National Laboratory document LA-UR-97-3072, Los Alamos, New Mexico. (LANL 1997, 062539)
- LANL (Los Alamos National Laboratory), September 1997. "Voluntary Corrective Action Completion Report for Potential Release Site 53-014, Lead Shot Site," Los Alamos National Laboratory document LA-UR-97-3846, Los Alamos, New Mexico. (LANL 1997, 062913)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for AOC C-3-006 and PRS 3-054(e), Manhole and Outfall," Los Alamos National Laboratory document LA-UR-97-3392, Los Alamos, New Mexico. (LANL 1997, 072611)
- LANL (Los Alamos National Laboratory), September 1997. "Voluntary Corrective Action Report for Potential Release Site 15-009(e), Septic Tank," Los Alamos National Laboratory document LA-UR-97-3919, Los Alamos, New Mexico. (LANL 1997, 074091)
- LANL (Los Alamos National Laboratory), June 1998. "RFI Work Plan and SAP for Potential Release Sites 53-002(a), 53-002(b), and Associated Piping and Drainages at TA-53," Los Alamos National Laboratory document LA-UR-98-2547, Los Alamos, New Mexico. (LANL 1998, 058841)
- LANL (Los Alamos National Laboratory), September 1998. "Work Plan for Pajarito Canyon," Los Alamos National Laboratory document LA-UR-98-2550, Los Alamos, New Mexico. (LANL 1998, 059577)
- LANL (Los Alamos National Laboratory), September 1998. "RFI Report for Potential Release Site 16-021(c)," Los Alamos National Laboratory document LA-UR-98-4101, Los Alamos, New Mexico. (LANL 1998, 059891)
- LANL (Los Alamos National Laboratory), September 30, 1998. "RFI Report for Potential Release Sites in the Eastern and Western Aggregates at Technical Area 6," Los Alamos National Laboratory document LA-UR-98-3710, Los Alamos, New Mexico. (LANL 1998, 062227)
- LANL (Los Alamos National Laboratory), March 23, 1999. "VCA Plan for Potential Release Sites 33-007(b), 33-010(c), C-33-003," Los Alamos National Laboratory document LA-UR-99-3002, Los Alamos, New Mexico. (LANL 1999, 063678)
- LANL (Los Alamos National Laboratory), June 8, 1999. "Identification of New PRSs," Los Alamos National Laboratory letter (EM/ER:99-147) to J. Bearzi (NMED-HRMB) from J.A. Canepa (LANL) and T.J. Taylor (DOE-LAAO), Los Alamos, New Mexico. (LANL 1999, 063395)
- LANL (Los Alamos National Laboratory), September 1999. "Work Plan for Sandia Canyon and Cañada del Buey," Los Alamos National Laboratory document LA-UR-99-3610, Los Alamos, New Mexico. (LANL 1999, 064617)
- LANL (Los Alamos National Laboratory), December 13, 1999. "Plan for Characterization of Groundwater, Surface Water, and Sediments at SWMU 3-010(a)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2003, 081607)
- LANL (Los Alamos National Laboratory), March 2000. "RFI Report for Material Disposal Areas G, H, and L at Technical Area 54," Los Alamos National Laboratory document LA-UR-00-1140, Los Alamos, New Mexico. (LANL 2000, 064360)
- LANL (Los Alamos National Laboratory), July 2000. "Decommissioning Completion Report for Buildings 4, 46, 49, 50, 53, 54, 55, 56, 57, 69, and 88 at TA-02, Omega Site, Flood Control Project," draft, Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2000, 090087)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), August 18, 2000. "Submittal of Response to Request for Supplemental Information (RSI) for the Voluntary Corrective Action (VCA) Plan for Potential Release Sites (PRSs) 33-007(b), 33-010(c), and C-33-003 [and attached 'Segmented Gate System, Voluntary Corrective Action Status Report for Potential Release Sites 33-007(b), 33-010(c), C-33-033]," Los Alamos National Laboratory letter (ER2000-0171) to J. Kieling (NMED-HWB) from J.A. Canepa (LANL) and T.J. Taylor (DOE-LAAO), Los Alamos, New Mexico. (LANL 2000, 066889)
- LANL (Los Alamos National Laboratory), October 2000. "Addendum to RFI Report for Field Unit 1, SWMU 3-010(a)," Los Alamos National Laboratory document, Los Alamos, New Mexico. (LANL 2000, 068736)
- LANL (Los Alamos National Laboratory), March 2001. "TA-2 Sampling and Soil Removal, Final Closeout Report," Los Alamos National Laboratory document LA-UR-01-1243, Los Alamos, New Mexico. (LANL 2001, 070352)
- LANL (Los Alamos National Laboratory), July 23, 2001–March 13, 2002. "Field Notebook for SWMUs 03-001(k), 03-003(c), 03-011, 03-049(e), 03-056(a), 27-003, 39-007(a), 60-002, 60-007(a), and C-09-001," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2001–2002, 100703)
- LANL (Los Alamos National Laboratory), September 2001. "Phase II RFI Report for Potential Release Site 21-029, DP Tank Farm," Los Alamos National Laboratory document LA-UR-01-5254, Los Alamos, New Mexico. (LANL 2001, 071303)
- LANL (Los Alamos National Laboratory), December 13, 2001. "Response to Request for Supplemental Information for the Phase II RFI Report for Potential Release Site 21-029, DP Tank Farm," Los Alamos National Laboratory document LA-UR-01-6737, Los Alamos, New Mexico. (LANL 2001, 073436)
- LANL (Los Alamos National Laboratory), September 2003. "Investigation Work Plan for Material Disposal Area G, at Technical Area 54," Los Alamos National Laboratory document LA-UR-03-6491, Los Alamos, New Mexico. (LANL 2003, 081174)
- LANL (Los Alamos National Laboratory), October 2003. "Groundwater Investigation Work Plan for Solid Waste Management Unit 3-010(a) at Technical Area 3," Los Alamos National Laboratory document LA-UR-03-7349, Los Alamos, New Mexico. (LANL 2003, 081599)
- LANL (Los Alamos National Laboratory), April 2004. "Los Alamos and Pueblo Canyons Investigation Report," Los Alamos National Laboratory document LA-UR-04-2714, Los Alamos, New Mexico. (LANL 2004, 087390)
- LANL (Los Alamos National Laboratory), November 2004. "Accelerated Corrective Action Work Plan for the Investigation and Remediation of Area of Concern 03-001(i) and Solid Waste Management Units 03-029 and 61-002," Los Alamos National Laboratory document LA-UR-04-7879, Los Alamos, New Mexico. (LANL 2004, 087474)
- LANL (Los Alamos National Laboratory), May 2005. "Pueblo Canyon Aggregate Area Investigation Work Plan," Los Alamos National Laboratory document LA-UR-05-2366, Los Alamos, New Mexico. (LANL 2005, 090579)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), July 2005. "Historical Investigation Report for Technical Area 10," Los Alamos National Laboratory document LA-UR-05-3955, Los Alamos, New Mexico. (LANL 2005, 089658)
- LANL (Los Alamos National Laboratory), July 2005. "Investigation Work Plan for Bayo Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-05-4761, Los Alamos, New Mexico. (LANL 2005, 089659)
- LANL (Los Alamos National Laboratory), August 2005. "Material Disposal Area P Site Closure Certification Report, Revision 1," Volume 2 of 2, Los Alamos National Laboratory document LA-UR-05-6536, Los Alamos, New Mexico. (LANL 2005, 091141)
- LANL (Los Alamos National Laboratory), August 2005. "Material Disposal Area P Site Closure Certification Report, Revision 1," Volume 1 of 2, Los Alamos National Laboratory document LA-UR-05-6536, Los Alamos, New Mexico. (LANL 2005, 092251)
- LANL (Los Alamos National Laboratory), September 2005. "Investigation and Remediation Report for Consolidated SWMU 53-002(a)-99, Inactive Wastewater Impoundments, and AOC 53-008, Storage Area, at Technical Area 53, Revision 1," Los Alamos National Laboratory document LA-UR-05-6373, Los Alamos, New Mexico. (LANL 2005, 091498)
- LANL (Los Alamos National Laboratory), September 2005. "Investigation Report for the Middle Mortandad/Ten Site Aggregate," Los Alamos National Laboratory document LA-UR-05-6135, Los Alamos, New Mexico. (LANL 2005, 091699)
- LANL (Los Alamos National Laboratory), September 30, 2005. "Submittal of Revisions to the 'Investigation Work Plan for Delta Prime Site Aggregate Area, at Technical Area 21'," Los Alamos National Laboratory letter (ER2005-0475) to J.P. Bearzi (NMED HWB) from D. McInroy (ERS Deputy Program Director) and D. Gregory (DOE-LASO), Los Alamos, New Mexico. (LANL 2005, 090225)
- LANL (Los Alamos National Laboratory), December 2005. "Remedy Completion Report for the Investigation and Remediation of Area of Concern 03-001(i) and Solid Waste Management Units 03-029 and 61-002," Los Alamos National Laboratory document LA-UR-05-8863, Los Alamos, New Mexico. (LANL 2005, 091150)
- LANL (Los Alamos National Laboratory), December 2005. "Los Alamos and Pueblo Canyons Supplemental Investigation Report," Los Alamos National Laboratory document LA-UR-05-9230, Los Alamos, New Mexico. (LANL 2005, 091818)
- LANL (Los Alamos National Laboratory), April 2006. "Historical Investigation Report for Upper Los Alamos Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-06-2465, Los Alamos, New Mexico. (LANL 2006, 091915)
- LANL (Los Alamos National Laboratory), April 2006. "Investigation Work Plan for Upper Los Alamos Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-06-2464, Los Alamos, New Mexico. (LANL 2006, 091916)
- LANL (Los Alamos National Laboratory), May 2006. "Investigation Work Plan for Middle Los Alamos Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-06-3015, Los Alamos, New Mexico. (LANL 2006, 092571.12)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), September 2006. "Historical Investigation Report for Cañon de Valle Aggregate Area," Los Alamos National Laboratory document LA-UR-06-4961, Los Alamos, New Mexico. (LANL 2006, 091697)
- LANL (Los Alamos National Laboratory), October 2006. "Mortandad Canyon Investigation Report," Los Alamos National Laboratory document LA-UR-06-6752, Los Alamos, New Mexico. (LANL 2006, 094161)
- LANL (Los Alamos National Laboratory), July 2007. "Investigation Report for the Middle Mortandad/Ten Site Aggregate, Revision 1," Los Alamos National Laboratory document LA-UR-07-4716, Los Alamos, New Mexico. (LANL 2007, 100119)
- LANL (Los Alamos National Laboratory), August 2007. "Investigation Report for Guaje/Barrancas/Rendija Canyons Aggregate Area at Technical Area 00," Los Alamos National Laboratory document LA-UR-07-5326, Los Alamos, New Mexico. (LANL 2007, 098670)
- LANL (Los Alamos National Laboratory), September 2007. "Investigation Work Plan for North Ancho Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-07-5947, Los Alamos, New Mexico. (LANL 2007, 098280)
- LANL (Los Alamos National Laboratory), September 2007. "Historical Investigation Report for North Ancho Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-07-5948, Los Alamos, New Mexico. (LANL 2007, 098281)
- LANL (Los Alamos National Laboratory), October 2007. "Historical Investigation Report for Middle Cañada del Buey Aggregate Area," Los Alamos National Laboratory document LA-UR-07-7039, Los Alamos, New Mexico. (LANL 2007, 098710)
- LANL (Los Alamos National Laboratory), October 15, 2007. "Submittal of Certification of Culvert Repair Behind the SM-30 Warehouse, in the Vicinity of Solid Waste Management Units 03-010(a) and 03-001(e)," Los Alamos National Laboratory letter (EP2007-0635) to J.P. Bearzi (NMED-HWB) from S. Stiger (LANL) and D. Gregory (DOE-LASO), Los Alamos, New Mexico. (LANL 2007, 099171)
- LANL (Los Alamos National Laboratory), November 2007. "Investigation Work Plan for Upper Mortandad Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-07-7696, Los Alamos, New Mexico. (LANL 2007, 098954)
- LANL (Los Alamos National Laboratory), November 2007. "Historical Investigation Report for Upper Mortandad Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-07-7802, Los Alamos, New Mexico. (LANL 2007, 098955)
- LANL (Los Alamos National Laboratory), November 2007. "Delta Prime Site Aggregate Area Investigation Report," Los Alamos National Laboratory document LA-UR-07-5459, Los Alamos, New Mexico. (LANL 2007, 099175)
- LANL (Los Alamos National Laboratory), November 2007. "Investigation Report for Guaje/Barrancas/Rendija Canyons Aggregate Area at Technical Area 00, Revision 1," Los Alamos National Laboratory document LA-UR-07-7820, Los Alamos, New Mexico. (LANL 2007, 099954)
- LANL (Los Alamos National Laboratory), December 2007. "Investigation Work Plan for North Ancho Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-07-8272, Los Alamos, New Mexico. (LANL 2007, 101894)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), December 2007. "Investigation Work Plan for S-Site Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-07-8366, Los Alamos, New Mexico. (LANL 2007, 102216)
- LANL (Los Alamos National Laboratory), January 2008. "Investigation Work Plan for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary, Revision 1," Los Alamos National Laboratory document LA-UR-08-0449, Los Alamos, New Mexico. (LANL 2008, 102215)
- LANL (Los Alamos National Laboratory), January 2008. "Investigation Work Plan for Sites at Technical Area 49 Inside the Nuclear Environmental Site Boundary, Revision 1," Los Alamos National Laboratory document LA-UR-08-0447, Los Alamos, New Mexico. (LANL 2008, 102691)
- LANL (Los Alamos National Laboratory), February 2008. "Investigation Work Plan for Upper Mortandad Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-1272, Los Alamos, New Mexico. (LANL 2008, 100750)
- LANL (Los Alamos National Laboratory), February 2008. "Investigation Report for the Middle Mortandad/Ten Site Aggregate, Revision 2," Los Alamos National Laboratory document LA-UR-08-0336, Los Alamos, New Mexico. (LANL 2008, 102187)
- LANL (Los Alamos National Laboratory), March 2008. "Historical Investigation Report for Upper Sandia Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-08-1851, Los Alamos, New Mexico. (LANL 2008, 100693)
- LANL (Los Alamos National Laboratory), March 2008. "Delta Prime Site Aggregate Area Investigation Report, Revision 1," Los Alamos National Laboratory document LA-UR-08-1834, Los Alamos, New Mexico. (LANL 2008, 102760)
- LANL (Los Alamos National Laboratory), March 2008. "Investigation Report for Bayo Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-08-1134, Los Alamos, New Mexico. (LANL 2008, 102793)
- LANL (Los Alamos National Laboratory), April 2008. "Supplemental Investigation Report for Consolidated Unit 21-018(a)-99, Material Disposal Area V, at Technical Area 21 Revision 1," Los Alamos National Laboratory document LA-UR-08-2315, Los Alamos, New Mexico. (LANL 2008, 101892)
- LANL (Los Alamos National Laboratory), May 2008. "Investigation Report for Middle Los Alamos Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-2725, Los Alamos, New Mexico. (LANL 2008, 101669.12)
- LANL (Los Alamos National Laboratory), July 2008. "Historical Investigation Report for Threemile Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-08-4713, Los Alamos, New Mexico. (LANL 2008, 102244)
- LANL (Los Alamos National Laboratory), July 2008. "Investigation Report for Pueblo Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-4765, Los Alamos, New Mexico. (LANL 2008, 103243.34)
- LANL (Los Alamos National Laboratory), July 2008. "Investigation Work Plan for Upper Sandia Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-4798, Los Alamos, New Mexico. (LANL 2008, 103404.43)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), August 18, 2008. "Response to Direction to Modify Bayo Canyon Aggregate Area Investigation Report, Revision 1," Los Alamos National Laboratory letter (EP2008-0404) to J.P. Bearzi (NMED-HWB) from S.G. Stiger (LANL) and D. Gregory (DOE-LASO), Los Alamos, New Mexico. (LANL 2008, 103202)
- LANL (Los Alamos National Laboratory), September 2008. "Investigation Work Plan for Upper Cañada del Buey Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-6122, Los Alamos, New Mexico. (LANL 2008, 105038.17)
- LANL (Los Alamos National Laboratory), October 2008. "Pueblo Canyon Aggregate Area Phase II Investigation Work Plan," Los Alamos National Laboratory document LA-UR-08-6722, Los Alamos, New Mexico. (LANL 2008, 104580)
- LANL (Los Alamos National Laboratory), October 2008. "Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-6727, Los Alamos, New Mexico. (LANL 2008, 105673)
- LANL (Los Alamos National Laboratory), November 2008. "Los Alamos Site Monitoring Area 2 Interim Measure and Monitoring Plan," Los Alamos National Laboratory document LA-UR-08-6891, Los Alamos, New Mexico. (LANL 2008, 104020)
- LANL (Los Alamos National Laboratory), December 2008. "Delta Prime Site Aggregate Area Phase II Work Plan, Revision 1," Los Alamos National Laboratory document LA-UR-08-7794, Los Alamos, New Mexico. (LANL 2008, 104989)
- LANL (Los Alamos National Laboratory), February 2009. "Phase II Investigation Work Plan for Middle Los Alamos Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-09-1206, Los Alamos, New Mexico. (LANL 2009, 105073)
- LANL (Los Alamos National Laboratory), February 2009. "Work Plan for Installation of Stormwater Controls at Area of Concern 00-030(f)," Los Alamos National Laboratory document LA-UR-09-0794, Los Alamos, New Mexico. (LANL 2009, 105088)
- LANL (Los Alamos National Laboratory), April 2009. "Historical Investigation Report for Lower Sandia Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-09-2077, Los Alamos, New Mexico. (LANL 2009, 105078)
- LANL (Los Alamos National Laboratory), April 2009. "Historical Investigation Report for Potrillo and Fence Canyons Aggregate Area," Los Alamos National Laboratory document LA-UR-09-2341, Los Alamos, New Mexico. (LANL 2009, 105251)
- LANL (Los Alamos National Laboratory), April 2009. "Investigation Report for Middle Cañada del Buey Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-09-1985, Los Alamos, New Mexico. (LANL 2009, 105754)
- LANL (Los Alamos National Laboratory), April 1, 2009. "Request for Approval of Expanded Boundaries for Areas of Contamination for the Investigation and Remediation of Solid Waste Management Units 39-001(a) and 39-001(b) at Technical Area 39," Los Alamos National Laboratory letter (EP2009-0180) to J.P. Bearzi (NMED-HWB) from M.J. Graham (LANL) and D.R. Gregory (DOE-LASO), Los Alamos, New Mexico. (LANL 2009, 105720)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), July 2009. "Investigation Work Plan for Potrillo and Fence Canyons Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-09-4327, Los Alamos, New Mexico. (LANL 2009, 106657.8)
- LANL (Los Alamos National Laboratory), July 2009. "Investigation Work Plan for Lower Sandia Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-09-4329, Los Alamos, New Mexico. (LANL 2009, 106660.14)
- LANL (Los Alamos National Laboratory), August 2009. "Pajarito Canyon Investigation Report, Revision 1," Los Alamos National Laboratory document LA-UR-09-4670, Los Alamos, New Mexico. (LANL 2009, 106939)
- LANL (Los Alamos National Laboratory), October 2009. "Investigation Report for Sandia Canyon," Los Alamos National Laboratory document LA-UR-09-6450, Los Alamos, New Mexico. (LANL 2009, 107453)
- LANL (Los Alamos National Laboratory), November 2009. "Cañada del Buey Investigation Report, Revision 1," Los Alamos National Laboratory document LA-UR-09-7317, Los Alamos, New Mexico. (LANL 2009, 107497)
- LANL (Los Alamos National Laboratory), December 2009. "2009 Biennial Ordnance Survey Report, Solid Waste Management Units 00-011(a, c, d, and e) and Area of Concern C-00-020, Guaje/Barrancas/Rendija Canyons Aggregate," Los Alamos National Laboratory document LA-UR-09-8186, Los Alamos, New Mexico. (LANL 2009, 108171)
- LANL (Los Alamos National Laboratory), December 2009. "Accelerated Corrective Action Work Plan for Upper Los Alamos Canyon Aggregate Area, Former Technical Area 32," Los Alamos National Laboratory document LA-UR-09-8056, Los Alamos, New Mexico. (LANL 2009, 108332)
- LANL (Los Alamos National Laboratory), January 2010. "Historical Investigation Report for Twomile Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-0386, Los Alamos, New Mexico. (LANL 2010, 108330)
- LANL (Los Alamos National Laboratory), January 2010. "Investigation Report for North Ancho Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-0125, Los Alamos, New Mexico. (LANL 2010, 108500.11)
- LANL (Los Alamos National Laboratory), February 2010. "Investigation Report for Upper Los Alamos Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-0422, Los Alamos, New Mexico. (LANL 2010, 108528)
- LANL (Los Alamos National Laboratory), April 2010. "Investigation Report for Upper Mortandad Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-2046, Los Alamos, New Mexico. (LANL 2010, 109180.28)
- LANL (Los Alamos National Laboratory), May 2010. "Interim Measure Report for Solid Waste Management Unit 01-001(f) and Los Alamos Site Monitoring Area 2," Los Alamos National Laboratory document LA-UR-10-2641, Los Alamos, New Mexico. (LANL 2010, 109422)
- LANL (Los Alamos National Laboratory), May 2010. "Investigation Work Plan for Twomile Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-2899, Los Alamos, New Mexico. (LANL 2010, 109520)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), July 2010. "Investigation Work Plan for Lower Pajarito Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-3302, Los Alamos, New Mexico. (LANL 2010, 109636)
- LANL (Los Alamos National Laboratory), July 2010. "Historical Investigation Report for Lower Pajarito Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-3299, Los Alamos, New Mexico. (LANL 2010, 109639)
- LANL (Los Alamos National Laboratory), July 2010. "Delta Prime East Building Footprints Letter Work Plan, Revision 1," Los Alamos National Laboratory document LA-UR-10-4812, Los Alamos, New Mexico. (LANL 2010, 110082.4)
- LANL (Los Alamos National Laboratory), August 2010. "Historical Investigation Report for Upper Water Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-5226, Los Alamos, New Mexico. (LANL 2010, 110410)
- LANL (Los Alamos National Laboratory), September 2010. "Historical Investigation Report for Starmer/Upper Pajarito Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-6031, Los Alamos, New Mexico. (LANL 2010, 110528)
- LANL (Los Alamos National Laboratory), September 2010. "Phase II Investigation Report for Pueblo Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-6411, Los Alamos, New Mexico. (LANL 2010, 110864)
- LANL (Los Alamos National Laboratory), October 2010. "Phase II Investigation Report for Delta Prime Site Aggregate Area at Technical Area 21, Revision 1," Los Alamos National Laboratory document LA-UR-10-6478, Los Alamos, New Mexico. (LANL 2010, 110772.33)
- LANL (Los Alamos National Laboratory), October 2010. "Supplemental Interim Measures Report for Solid Waste Management Unit 01-001(f)," Los Alamos National Laboratory document LA-UR-10-6329, Los Alamos, New Mexico. (LANL 2010, 110763)
- LANL (Los Alamos National Laboratory), October 2010. "Investigation Report for Upper Sandia Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-6410, Los Alamos, New Mexico. (LANL 2010, 110862.24)
- LANL (Los Alamos National Laboratory), November 2010. "Investigation Work Plan for Chaquehui Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-7226, Los Alamos, New Mexico. (LANL 2010, 111298.9)
- LANL (Los Alamos National Laboratory), November 2010. "Investigation Report for Threemile Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-7227, Los Alamos, New Mexico. (LANL 2010, 111324.14)
- LANL (Los Alamos National Laboratory), November 2010. "Investigation Work Plan for Lower Pajarito Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-10-7635, Los Alamos, New Mexico. (LANL 2010, 111328)
- LANL (Los Alamos National Laboratory), December 2010. "Phase II Investigation Work Plan for Upper Mortandad Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-10-7423, Los Alamos, New Mexico. (LANL 2010, 111472)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), January 2011. "Investigation Work Plan for Upper Water Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-0135, Los Alamos, New Mexico. (LANL 2011, 111602)
- LANL (Los Alamos National Laboratory), February 2011. "Phase II Investigation Work Plan for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary," Los Alamos National Laboratory document LA-UR-11-0553, Los Alamos, New Mexico. (LANL 2011, 111691)
- LANL (Los Alamos National Laboratory), February 2011. "Investigation Report for S-Site Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-0561, Los Alamos, New Mexico. (LANL 2011, 111810.32)
- LANL (Los Alamos National Laboratory), March 2011. "Investigation Work Plan for Starmer/Upper Pajarito Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-1821, Los Alamos, New Mexico. (LANL 2011, 111794)
- LANL (Los Alamos National Laboratory), March 2011. "Phase II Investigation Work Plan for Sites at Technical Area 49 Inside the Nuclear Environmental Site Boundary," Los Alamos National Laboratory document LA-UR-11-1818, Los Alamos, New Mexico. (LANL 2011, 201570)
- LANL (Los Alamos National Laboratory), March 28, 2011. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, March 28, 2011, Volume 5, Ancho/Chaquehui Watershed," Environmental Programs document no. EP-DIR-PLAN-10007, R.O, Los Alamos National Laboratory document LA-UR-11-1555, Los Alamos, New Mexico. (LANL 2011, 206304)
- LANL (Los Alamos National Laboratory), April 5, 2011. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, April 5, 2011, Volume 3, Pajarito Watershed," Environmental Programs document no. EP-DIR-PLAN-10005, R.O, Los Alamos National Laboratory document LA-UR-11-1553, Los Alamos, New Mexico. (LANL 2011, 206303)
- LANL (Los Alamos National Laboratory), April 7, 2011. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, April 7, 2011, Volume 4, Water Canyon and Cañon de Valle Watershed," Environmental Programs document no. EP-DIR-PLAN-10006, R.O, Los Alamos National Laboratory document LA-UR-11-1554, Los Alamos, New Mexico. (LANL 2011, 204887)
- LANL (Los Alamos National Laboratory), April 14, 2011. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, April 14, 2011, Volume 2, Sandia/Mortandad Watershed," Environmental Programs document no. EP-DIR-PLAN-10004, R.O, Los Alamos National Laboratory document LA-UR-11-1552, Los Alamos, New Mexico. (LANL 2011, 206302)
- LANL (Los Alamos National Laboratory), April 18, 2011. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, April 18, 2011, Volume 1, Los Alamos/Pueblo Watershed," Environmental Programs document no. EP-DIR-PLAN-10003, R.O, Los Alamos National Laboratory document LA-UR-11-1551, Los Alamos, New Mexico. (LANL 2011, 206301)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), May 2011. "Investigation Report for Upper Cañada del Buey Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-2487, Los Alamos, New Mexico. (LANL 2011, 203410)
- LANL (Los Alamos National Laboratory), June 2011. "Investigation Report for Ancho, Chaquehui, and Indio Canyons, Revision 1," Los Alamos National Laboratory document LA-UR-11-3305, Los Alamos, New Mexico. (LANL 2011, 204397)
- LANL (Los Alamos National Laboratory), August 2011. "Investigation Report for Lower Sandia Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-4795, Los Alamos, New Mexico. (LANL 2011, 205989)
- LANL (Los Alamos National Laboratory), September 2011. "Phase II Investigation Work Plan for Upper Sandia Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-4912, Los Alamos, New Mexico. (LANL 2011, 206234)
- LANL (Los Alamos National Laboratory), September 2011. "Phase II Investigation Work Plan for S-Site Aggregate Area," Los Alamos National Laboratory document LA-UR-11-5388, Los Alamos, New Mexico. (LANL 2011, 206485)
- LANL (Los Alamos National Laboratory), September 2011. "Investigation Report for Water Canyon/ Cañon de Valle," Los Alamos National Laboratory document LA-UR-11-5478, Los Alamos, New Mexico. (LANL 2011, 207069)
- LANL (Los Alamos National Laboratory), November 2011. "Investigation Report for Potrillo and Fence Canyons Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-11-6217, Los Alamos, New Mexico. (LANL 2011, 208336)
- LANL (Los Alamos National Laboratory), March 2012. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2011, NPDES Permit No. NM0030759," Los Alamos National Laboratory document LA-UR-12-10341, Los Alamos, New Mexico. (LANL 2012, 211408)
- LANL (Los Alamos National Laboratory), May 2012. "Polychlorinated Biphenyls in Precipitation and Stormwater within the Upper Rio Grande Watershed," Los Alamos National Laboratory document LA-UR-12-1081, Los Alamos, New Mexico. (LANL 2012, 219767)
- LANL (Los Alamos National Laboratory), May 1, 2012. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, May 1, 2012, LA-UR-12-20497, Revision 1, Los Alamos/Pueblo Watershed, Receiving Waters: Rendija Canyon, Bayo Canyon, Pueblo Canyon, DP Canyon, Los Alamos Canyon, Volume 1," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2012, 215105)
- LANL (Los Alamos National Laboratory), May 1, 2012. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, May 1, 2012, LA-UR-12-20798, Revision 1, Sandia/Mortandad Watershed, Receiving Waters: Cañada del Buey, Mortandad Canyon, Sandia Canyon, Ten Site Canyon, Volume 2," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2012, 215106)
- LANL (Los Alamos National Laboratory), May 1, 2012. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, May 1, 2012, LA-UR-12-20395, Revision 1, Pajarito Watershed, Receiving Waters: Pajarito Canyon, Twomile Canyon, Threemile Canyon, Volume 3," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2012, 215107)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), May 1, 2012. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, May 1, 2012, LA-UR-12-20224, Revision 1, Water/Cañon de Valle Watershed, Receiving Waters: Cañon de Valle, Potrillo Canyon, Water Canyon, Fence Canyon, Volume 4," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2012, 215108)
- LANL (Los Alamos National Laboratory), May 1, 2012. "Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, May 1, 2012, LA-UR-12-00849, Revision 1, Ancho/Chaquehui Watershed, Receiving Waters: Ancho Canyon and Chaquehui Canyon, Volume 5," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2012, 215109)
- LANL (Los Alamos National Laboratory), August 2012. "Investigation Report for Lower Mortandad/Cedro Canyons Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-12-23970, Los Alamos, New Mexico. (LANL 2012, 225284)
- LANL (Los Alamos National Laboratory) August 27, 2012, "Certification of Enhanced Control Measures for Eight Site Monitoring Areas." Los Alamos National Laboratory documents LA-UR-12-22528, LA-UR-12-22530, LA-UR-12-22185, LA-UR-12-22190, LA-UR-12-23232, LA-UR-12-23233, LA-UR-12-24012, LA-UR-12-24021, Los Alamos, New Mexico. (LANL 2012, 225367)
- LANL (Los Alamos National Laboratory), September 20, 2012. "NPDES Permit No. NM0030579 – Submittal of Certification of Installation of Enhanced Control Measures at Four Site Monitoring Areas," Los Alamos National Laboratory documents LA-UR-12-23185, LA-UR-12-23186, LA-UR-12-24014, Los Alamos, New Mexico. (LANL 2012, 227785)
- LANL (Los Alamos National Laboratory), January 2013. "Supplemental Remedy Completion Report for Upper Los Alamos Canyon Aggregate Area, Former Technical Area 32, Revision 1," Los Alamos National Laboratory document LA-UR-13-20151, Los Alamos, New Mexico. (LANL 2013, 233950)
- LANL (Los Alamos National Laboratory), March 2013. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2012, NPDES Permit No. NM0030759," Los Alamos National Laboratory document LA-UR-13-20566, Los Alamos, New Mexico. (LANL 2013, 237680)
- LANL (Los Alamos National Laboratory), April 2013. "Background Metals Concentrations and Radioactivity in Storm Water on the Pajarito Plateau, Northern New Mexico," Los Alamos National Laboratory document LA-UR-13-22841, Los Alamos, New Mexico. (LANL 2013, 239557)
- LANL (Los Alamos National Laboratory), August 21, 2013. "NPDES Permit No. NM0030759 — Resubmittal of Completion of Corrective Action for Twelve Site Monitoring Areas," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2013, 250035)
- LANL (Los Alamos National Laboratory), March 2014. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2013, NPDES Permit No. NM0030759," Los Alamos National Laboratory document LA-UR-14-20839, Los Alamos, New Mexico. (LANL 2014, 254067)
- LANL (Los Alamos National Laboratory), March 2014. "Los Alamos National Laboratory Renewal Application for NPDES Permit Number NM0030759, Individual Permit for Storm Water Discharges from Solid Waste Management Units and Areas of Concern," Los Alamos National Laboratory document LA-UR-14-21861, Los Alamos, New Mexico. (LANL 2014, 254864)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), May 30, 2014. "NPDES Permit No. NM0030579 – Submittal of Certification of Installation of Enhanced Control Measures at Four Site Monitoring Areas," Los Alamos National Laboratory documents LA-UR-14-22561, LA-UR-14-22942, LA-UR-14-22907, LA-UR-14-22995, Los Alamos, New Mexico. (LANL 2014, 256722)
- LANL (Los Alamos National Laboratory), August 2014. "NPDES Permit No. NM0030759 – Submittal of Analytical Results for Site 54-017 in Site Monitoring Area PJ-SMA-20," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2014, 260188)
- LANL (Los Alamos National Laboratory), December 2014. "Phase III Investigation Report for Delta Prime Site Aggregate Area at Technical Area 21," Los Alamos National Laboratory document LA-UR-14-29428, Los Alamos, New Mexico. (LANL 2014, 600091)
- LANL (Los Alamos National Laboratory), February 10, 2015. "NPDES Permit No. NM0030759, Supplemental Information for Permit Renewal Application," Los Alamos National Laboratory letter (ENV-DO-15-0036) to I. Chen (EPA Region 6) from A.R. Grieggs (LANL) and D.S. Rhodes (DOE-NA-LA), Los Alamos, New Mexico. (LANL 2015, 600289)
- LANL (Los Alamos National Laboratory), March 2015. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2014, NPDES Permit No. NM0030759," Los Alamos National Laboratory document LA-UR-15-20584, Los Alamos, New Mexico. (LANL 2015, 600241)
- LANL (Los Alamos National Laboratory), May 2015. "Alternative Compliance Request for 52 Site Monitoring Area/Site Combinations Exceeding Target Action Levels from Nonpoint Sources," Los Alamos National Laboratory document LA-UR-15-22213, Los Alamos, New Mexico. (LANL 2015, 600418)
- LANL (Los Alamos National Laboratory), May 2015. "Alternative Compliance Request for 19 Site Monitoring Area/Site Combinations Exceeding Target Action Levels for Gross-Alpha Radioactivity," Los Alamos National Laboratory document LA-UR-15-22211, Los Alamos, New Mexico. (LANL 2015, 600419)
- LANL (Los Alamos National Laboratory), July 2015. "Investigation Work Plan for South Ancho Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-15-25429, Los Alamos, New Mexico. (LANL 2015, 600531)
- LANL (Los Alamos National Laboratory), August 13, 2015. "Request for Certificates of Completion for Nineteen Solid Waste Management Units and Two Areas of Concern in the Cañon de Valle Aggregate Area," Los Alamos National Laboratory letter (ADESH-15-106) to J. Kieling (NMED-HWB) from A.M. Dorries (LANL) and C. Gelles (DOE EM-LA), Los Alamos, New Mexico. (LANL 2015, 600775)
- LANL (Los Alamos National Laboratory), August 17, 2015. "NPDES Permit No. NM0030579 – Submittal of Certification of Installation of Enhanced Control Measures at Eight Site Monitoring Areas," Los Alamos National Laboratory documents LA-UR-15-21501, LA-UR-15-21533, LA-UR-15-21539, LA-UR-15-21905, LA-UR-15-21907, LA-UR-15-24161, LA-UR-15-25017, LA-UR-15-25018, Los Alamos, New Mexico. (LANL 2015, 600776)
- LANL (Los Alamos National Laboratory), September 2015. "Supplemental Investigation Report for Upper Sandia Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-15-26598, Los Alamos, New Mexico. (LANL 2015, 600912)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), September 2015. "Supplemental Investigation Report for Potrillo and Fence Canyons Aggregate Area," Los Alamos National Laboratory document LA-UR-15-27131, Los Alamos, New Mexico. (LANL 2015, 600935)
- LANL (Los Alamos National Laboratory), September 10, 2015. "NPDES Permit No. NM0030579 – Submittal of Certification of Installation of Enhanced Control Measures at Five Site Monitoring Areas," Los Alamos National Laboratory documents LA-UR-15-21555, LA-UR-15-24160, LA-UR-15-25019, LA-UR-15-25197, LA-UR-15-25521, Los Alamos, New Mexico. (LANL 2015, 600909)
- LANL (Los Alamos National Laboratory), October 2015. "Certification of Installation of Enhanced Control Measures at ACID-SMA-2," Los Alamos National Laboratory document LA-UR-16-27055, Los Alamos, New Mexico. (LANL 2016, 601865.1)
- LANL (Los Alamos National Laboratory), October 2015. "Certification of Installation of Enhanced Control Measures at ACID-SMA-2.1," Los Alamos National Laboratory document LA-UR-16-27123, Los Alamos, New Mexico. (LANL 2016, 601865.2)
- LANL (Los Alamos National Laboratory), October 14, 2015. "NPDES Permit NO. NM0030759 – Submittal of Analytical Results for Site 54-018 in Site Monitoring Area PJ-SMA-17 after Certification of a No Exposure Condition," Los Alamos National Laboratory document LA-UR-15-26487, Los Alamos, New Mexico. (LANL 2015, 600951)
- LANL (Los Alamos National Laboratory), October 14, 2015. "NPDES Permit No. NM0030759 – Request Deletion of Six Sites Planned for Deletion from the Individual Permit for Storm Water," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2015, 600952)
- LANL (Los Alamos National Laboratory), October 21, 2015. "NPDES Permit No. NM0030759 – Request for Permit Modification, Removal of Sites 03-045(b) and 03-045(c) (S-SMA-2)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2015, 600961)
- LANL (Los Alamos National Laboratory), October 21, 2015. "NPDES Permit No. NM0030759 – Request for Permit Modification, Removal of Sites 16-010(b) (CDV-SMA-2.42), 16-010(c) (CDV-SMA-2.5), 16-010(d) (CDV-SMA-2.5), and 16-018 (CDV-SMA-2.41)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2015, 600962)
- LANL (Los Alamos National Laboratory), October 30, 2015. "NPDES Permit No. NM0030579 – Submittal of Certification of Installation of Enhanced Control Measures at Nine [9] Site Monitoring Areas," Los Alamos National Laboratory documents LA-UR-15-27399, LA-UR-15-27510, LA-UR-15-27593, LA-UR-15-27650, LA-UR-15-27834, LA-UR-15-27835, LA-UR-15-27793, LA-UR-15-27921, LA-UR-15-2943, Los Alamos, New Mexico. (LANL 2015, 600980)
- LANL (Los Alamos National Laboratory), November 2015. "Supplemental Investigation Report for S-Site Aggregate Area," Los Alamos National Laboratory document LA-UR-15-28016, Los Alamos, New Mexico. (LANL 2015, 601008)
- LANL (Los Alamos National Laboratory), December 2015. "Supplemental Investigation Report for Upper Mortandad Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-15-28015, Los Alamos, New Mexico. (LANL 2015, 601063)
- LANL (Los Alamos National Laboratory), February 2016. "Supplemental Investigation Report for Threemile Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-16-20567, Los Alamos, New Mexico. (LANL 2016, 601216)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), February 2016. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2015, NPDES Permit No. NM0030759," Los Alamos National Laboratory document LA-UR-16-21002, Los Alamos, New Mexico. (LANL 2016, 601240)
- LANL (Los Alamos National Laboratory), February 26, 2016. "NPDES Permit No. NM0030759 – Alternative Compliance Request for 17 Site Monitoring Area/Site Combinations Exceeding Target Action Levels from Nonpoint Sources," Los Alamos National Laboratory letter ADESH-16-022 to P. Johnsey (EPA Region 6) and E. Spencer (EPA Region 6) from J. McCann (LANL) and D. Rhodes (DOE EM-LA), Los Alamos, New Mexico. (LANL 2016, 601239)
- LANL (Los Alamos National Laboratory), March 4, 2016. "Certification of Completion of Corrective Action for One Site [53-008] Following Analytical Results below Target Action Levels at LA-SMA-10.12," Los Alamos National Laboratory document LA-UR-16-20865, Los Alamos, New Mexico. (LANL 2016, 601270)
- LANL (Los Alamos National Laboratory), July 2016. "Phase III Investigation Report for Delta Prime Site Aggregate Area at Technical Area 21, Revision 1," Los Alamos National Laboratory document LA-UR-16-24014, Los Alamos, New Mexico. (LANL 2014, 601598)
- LANL (Los Alamos National Laboratory), August 2016. "Supplemental Investigation Report for Sites at Technical Area 49 Outside the Nuclear Environmental Site Boundary," Los Alamos National Laboratory document LA-UR-16-25264, Los Alamos, New Mexico. (LANL 2016, 601698)
- LANL (Los Alamos National Laboratory), August 2016. "Supplemental Investigation Report for Sites at Technical Area 49 Inside the Nuclear Environmental Site Boundary," Los Alamos National Laboratory document LA-UR-16-25263, Los Alamos, New Mexico. (LANL 2016, 601699)
- LANL (Los Alamos National Laboratory), August 2016. "Supplemental Investigation Report for Upper Cañada del Buey Aggregate Area," Los Alamos National Laboratory document LA-UR-16-26150, Los Alamos, New Mexico. (LANL 2016, 601745)
- LANL (Los Alamos National Laboratory), August 31, 2016. "NPDES Permit NO. NM0030759 – Submittal of Analytical Results for Site 03-013(a) in Site Monitoring Area S-SMA-0.25 after Certification of a No Exposure Condition," Los Alamos National Laboratory document LA-UR-16-26363, Los Alamos, New Mexico. (LANL 2016, 601772)
- LANL (Los Alamos National Laboratory), September 21, 2016. "Upper Los Alamos Canyon Aggregate Area Cleanup Report(s) for SWMUs 01-001(g), 01-003(a), 01-003(b), 01-006(b), 01-007(a), 01-007(b), and C-43-01 to EM LA," Los Alamos National Laboratory document LA-UR-16-27175, Los Alamos, New Mexico. (LANL 2016, 602474)
- LANL (Los Alamos National Laboratory), September 26, 2016. "NPDES Permit No. NM0030759 - Submittal of Completion of Corrective Action for Two [2] Sites [16-017(a)-99 and 16-026(m)] in CDV-SMA-1.3 Following Certificates of Completion from the New Mexico Environment Department," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2016, 601823)
- LANL (Los Alamos National Laboratory), September 26, 2016. "NPDES Permit NO. NM0030759 – Analytical Results for Site 03-003(k) in Site Monitoring Area 2M-SMA-2.2 after Certification of a No Exposure Condition," Los Alamos National Laboratory document LA-UR-16-26789, Los Alamos, New Mexico. (LANL 2016, 601824)

## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), October 25, 2016. “NPDES Permit NO. NM0030759 – Analytical Results Following Completion of Corrective Action by Certification of a No Exposure Condition at Site 48-005 in M-SMA-4,” Los Alamos National Laboratory document LA-UR-16-27800, Los Alamos, New Mexico. (LANL 2016, 601918)
- LANL (Los Alamos National Laboratory), October 27, 2016. “Request for a Class 1 Permit Modification to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit, EPA ID No. NM0890010515,” Los Alamos National Laboratory letter (LA-UR-16-27951) to J. Kielling (NMED) from J. Bretzke (LANL) and D. Rhodes (DOE-LASO). (LANL 2016, 601921)
- LANL (Los Alamos National Laboratory), December 2016. “Supplemental Investigation Report for Cañon de Valle Aggregate Area, Technical Area 14,” Los Alamos National Laboratory document LA-UR-16-29216, Los Alamos, New Mexico. (LANL 2016, 602053)
- LANL (Los Alamos National Laboratory), February 23, 2017. “Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2016, NPDES Permit No. NM0030759,” Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2017, 602194)
- LANL (Los Alamos National Laboratory), May 25, 2017. “Response to the Notice of Disapproval of the Investigation Report for the Former Los Alamos Inn Property Sites within the Upper Los Alamos Canyon Aggregate Area and Revision 1,” Los Alamos National Laboratory letter (ADEM-17-0109, LA-UR-17-24005; LA-UR-17-24019) to J. Kielling (NMED) from B. Robinson (LANL) and D. Rhodes (DOE-LASO). (LANL 2017, 602404)
- LANL (Los Alamos National Laboratory), June 15, 2017. “Request for Certificates of Completion without Controls for Nine Solid Waste Management Units and One Area of Concern in the Upper Los Alamos Canyon Aggregate Area,” Los Alamos National Laboratory letter (ADEM-17-0147) to J. Kielling (NMED) from B. Robinson (LANL) and D. Rhodes (DOE-LASO). (LANL 2017, 602455)
- LANL (Los Alamos National Laboratory), September 26, 2017. “NPDES Permit No. NM0030759 – Sampling Implementation Plan Update on Sampling Location Evaluations Performed with New Mexico Environment Department Surface Water Quality Bureau,” Los Alamos National Laboratory Letter (ADESH-17-064) to E. Herrera (EPA) from J. Bretzke (LANL) and D. Rhodes (DOE-LASO). (LANL 2017 602635)
- LANL (Los Alamos National Laboratory), September 28, 2017. “Fiscal Year 2017 Fieldwork Completion Status Report for Middle Los Alamos Canyon Aggregate Area,” Los Alamos National Laboratory document LA-UR-17-28509, Los Alamos, New Mexico. (LANL 2017, 602645)
- LANL (Los Alamos National Laboratory), November 2017. “NPDES Permit NO. NM0030759 – Analytical Results for Site 00-017 in Site Monitoring Area LA-SMA-1 after Certification of a No Exposure Condition,” Los Alamos National Laboratory document LA-UR-17-30372, Los Alamos, New Mexico. (LANL 2017, 602741)
- LANL (Los Alamos National Laboratory), January 29, 2018. “Submittal of the Accelerated Corrective Action Report for North Ancho Canyon Aggregate Area,” Los Alamos National Laboratory letter (ADEM-18-0022) to J. Kielling (NMED) from B. Robinson (LANL) and D. Rhodes (DOE-LASO). (LANL 2018, 602861)
- LANL (Los Alamos National Laboratory), February 2018. “Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2017, NPDES Permit No. NM0030759,” Los Alamos National Laboratory document LA-UR-18-21185, Los Alamos, New Mexico. (LANL 2018, 602910)



## Appendix D, References (continued)

- LANL (Los Alamos National Laboratory), February 2, 2018. "Request for Certificates of Completion for Twenty-three Solid Waste Management Units and Four Areas of Concern in the Delta Prime Site Aggregate Area," Los Alamos National Laboratory Letter (ADEM-18-0010) to J. Kieling (NMED-HWB) from B. Robinson (LANL) and D. Rhodes (DOE-LASO). (LANL 2018, 602874)
- McGehee, E.D., E. Loomis, K.L.M. Garcia, K. Towery, J. Ronquillo, N. Naranjo, and J. Isaacson, September 2004. "Engineering the Bomb: Detonator and Plutonium Recovery Research at Two-Mile Mesa Site (TA-6)," Historic Context and Property Documentation, Historic Building Survey Report No. 236, Los Alamos National Laboratory document LA-UR-04-7130, Los Alamos, New Mexico. (McGehee et al. 2004, 108213)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), July 2018. "Supplemental Investigation Report for Threemile Canyon Aggregate Area, Revision 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0011, Los Alamos, New Mexico. (N3B 2018, 700033)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 2018. "Phase II Investigation Report for Upper Los Alamos Canyon Aggregate Area," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0040, Los Alamos, New Mexico. (N3B 2018, 700090)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 2018. "Phase II Investigation Report for Middle Los Alamos Canyon Aggregate Area, Revision 2," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0039, Los Alamos, New Mexico. (N3B 2018, 700091)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), October 11, 2018. "Class 1 Permit Modification Request Requiring Prior Approval to Add Solid Waste Management Unit 02-014 to the Los Alamos National Laboratory Hazardous Waste Facility Permit, EPA ID No. NM0890010515," N3B Letter to J. Kieling (NMED-HWB) from F. Lockhart (N3B) and A. Duran (DOE EM-LA), Los Alamos, New Mexico. (N3B 2018, 700100)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), November 6, 2018. "NPDES Permit No. NM0030759 – Analytical Results from the First Measureable Storm Event Following Certification of Enhanced Control Measures at Site Monitoring Areas A-SMA-3, PJ-SMA-3.05, PJ-SMA-5, and STRM-SMA-5," Newport News Nuclear BWXT-Los Alamos, LLC, documents EM2018-0089, EM2018-0090, EM2018-0091, EM2018-0092, Los Alamos, New Mexico. (N3B 2018, 700119)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), December 2018. "NPDES Permit No. NM0030759 – Analytical Results Following Completion of Corrective Action by Certification of a No Exposure Condition at Sites 54-014(d) and 54-017 in Site Monitoring Area PJ-SMA-18," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0116, Los Alamos New Mexico. (N3B 2018, 700144)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), January 24, 2019. "Class 1 Permit Modification Request to Add Solid Waste Management Unit 40-003(a) and Area of Concern C-06-019 to Table K-1, Attachment K, and to Remove Area of Concern C-06-019 from Table K-3, Attachment K, of the Los Alamos National Laboratory Hazardous Waste Facility Permit, EPA ID No. NM0890010515," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0151, Los Alamos New Mexico. (N3B 2019, 700202)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), March 1, 2019. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2018," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0004, Los Alamos, New Mexico. (N3B 2019, 700320)

## Appendix D, References (continued)

- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), April 22, 2019. "Alternative Compliance Request for Seven Site Monitoring Area/Site Combinations Exceeding Target Action Levels from Nonpoint Sources," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0101, Los Alamos, New Mexico. (N3B 2019, 700401)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 16, 2019. "NPDES Permit No. NM0030759 – Completion of Corrective Action for One Site (05-004) in One Site Monitoring Area (M-SMA-12.6) Following Certificate of Completion from the New Mexico Environment Department," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0139, Los Alamos, New Mexico. (N3B 2019, 700437)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), July 15, 2019. "Revised NPDES Permit No. NM0030759 Individual Permit Renewal Application Package," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0009, Los Alamos, New Mexico. (N3B 2019, 700507)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), July 31, 2019. "Supplemental Investigation Report for Potrillo and Fence Canyons Aggregate Area, Revision 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0191, Los Alamos, New Mexico. (N3B 2019, 700523)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 26, 2019. "NPDES Permit No. NM0030759 – Analytical Results for Site Monitoring Areas A-SMA-2, DP-SMA-3, and PT-SMA-2 from the First Measurable Storm Event Following Certification of Enhanced Control Measures," Newport News Nuclear BWXT-Los Alamos, LLC, documents EM2019-0346, EM2019-0347, EM2019-0353, Los Alamos, New Mexico. (N3B 2019, 700589)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 26, 2019. "U.S. Department of Energy Environmental Management Los Alamos Field Office Response to Written Public Comment on the Alternative Compliance Requests for Seven Site Monitoring Areas," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0345, Los Alamos, New Mexico. (N3B 2019, 700590)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), November 27, 2019. "NPDES Permit No. NM0030759 – Completion of Corrective Action for Three Sites in 2M-SMA-3 Following Analytical Results Below Target Action Levels," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0395, Los Alamos, New Mexico. (N3B 2020, 700685)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), December 23, 2019. "NPDES Permit No. NM0030759 – Completion of Corrective Action for 15 Sites in 12 Site Monitoring Areas Following Certificate of Completion from the New Mexico Environment Department," Newport News Nuclear BWXT-Los Alamos, LLC, documents EM2019-0441, EM2019-0443, EM2019-0444, EM2019-0445, EM2019-0446, EM2019-0447, EM2019-0448, EM2019-0449, EM2019-0450, EM2019-0451, EM2019-0463, EM2019-0465, Los Alamos, New Mexico. (N3B 2019, 700724)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), January 2020. "Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2019," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0001, Los Alamos, New Mexico. (N3B 2020, 700767)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), January 14, 2020. "NPDES Permit No. NM0030759 – Analytical Results Following Completion of Corrective Action by Certification of a No Exposure Condition at Site 16-017(j)-99 in Site Monitoring Area W-SMA-1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0454, Los Alamos, New Mexico. (N3B 2020, 700731)

## Appendix D, References (continued)

- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), January 14, 2020. “NPDES Permit No. NM00030759 – Certification of Installation of Enhanced Control Measures for STRM-SMA-4.2,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0462, Los Alamos, New Mexico. (N3B 2020, 700732)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), April 17, 2020. “Notification of Force Majeure and Anticipated Noncompliance due to Partial Stop-Work Order for Activities under National Pollutant Discharge Elimination System Permit Number NM0030759,” Newport News Nuclear BWXT-Los Alamos, LLC, document N3B2020-0148, Los Alamos, New Mexico. (N3B 2020, 700857)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2020. “2019 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Overview,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0017, Los Alamos, New Mexico. (N3B 2020, 700829)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2020. “2019 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 1,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0012, Los Alamos, New Mexico. (N3B 2020, 700830)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2020. “2019 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 2,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0013, Los Alamos, New Mexico. (N3B 2020, 700831)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2020. “2019 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 3,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0014, Los Alamos, New Mexico. (N3B 2020, 700832)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2020. “2019 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 4,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0015, Los Alamos, New Mexico. (N3B 2020, 700833)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2020. “2019 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 5,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0016, Los Alamos, New Mexico. (N3B 2020, 700834)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), July 22, 2020. “Notification of Resumption of Operations for Activities under National Pollutant Discharge Elimination System Permit Number NM0030759,” Newport News Nuclear BWXT-Los Alamos, LLC, Los Alamos, New Mexico. (N3B 2020, 700983)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 10, 2020. “NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures for W-SMA-9.5,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0118, Los Alamos, New Mexico. (N3B 2020, 701029)

## Appendix D, References (continued)

- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), October 27, 2020. “NPDES Permit No. NM0030759 – Alternative Compliance Requests for Six Site Monitoring Area/Site Combinations Exceeding Target Action Levels from Nonpoint Sources,” Newport News Nuclear BWXT-Los Alamos, LLC, documents EM2020-0381, EM2020-0382, EM2020-0383, EM2020-0384, EM2020-0385, EM2020-0386, Los Alamos, New Mexico. (N3B 2020, 701098)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), November 2, 2020. “Permittees’ Comments on the U.S. Environmental Protection Agency Draft Los Alamos National Laboratory National Pollutant Discharge Elimination System Storm Water Individual Permit (Permit No. NM0030759),” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0224, Los Alamos, New Mexico. (N3B 2020, 701086)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), November 25, 2020. “NPDES Permit No. NM0030759 – Completion of Corrective Action at Site 00-011(c) in R-SMA-2.05 following Certification of Completion by the New Mexico Environment Department,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0528, Los Alamos, New Mexico. (N3B 2020, 701131)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), December 14, 2020. “NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures for CDV-SMA-7, CDV-SMA-9.05, PJ-SMA-5, P-SMA-2.2, and S-SMA-6,” Newport News Nuclear BWXT-Los Alamos, LLC, documents EM2020-0631, EM2020-0632, EM2020-0633, EM2020-0634, EM2020-0635, Los Alamos, New Mexico. (N3B 2020, 701131)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), February 2021. “Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2020,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0693, Los Alamos, New Mexico. (N3B 2021, 70701234)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), March 10, 2021. “NPDES Permit No. NM0030759 – No Comments Received for Alternative Compliance Requests for Six Site Monitoring Area/Site Combinations Exceeding Target Action Levels from Nonpoint Sources,” Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0054, EM2020-0381, EM2020-0382, EM2020-0383, EM-2020-0384, EM2020-0385, EM2020-0386, Los Alamos, New Mexico. (N3B 2021, 701325)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), March 30, 2021. “NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures for PJ-SMA-11,” Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0047, EM2021-0085, Los Alamos, New Mexico. (N3B 2021, 701352)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), April 21, 2021. “NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures for CHQ-SMA-1.02, CHQ-SMA-2, and CHQ-SMA-7.1,” Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-080, EM2021-0202, EM2021-0160, EM2021-0161, Los Alamos, New Mexico. (N3B 2021, 701388)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2021. “2020 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Overview,” Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0001, Los Alamos, New Mexico. (N3B 2021, 701393)



## Appendix D, References (continued)

- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2021. "2020 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0002, Los Alamos, New Mexico. (N3B 2021, 701394)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2021. "2020 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 2," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0003, Los Alamos, New Mexico. (N3B 2021, 701395)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2021. "2020 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 3," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0004, Los Alamos, New Mexico. (N3B 2021, 701396)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2021. "2020 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 4," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0005, Los Alamos, New Mexico. (N3B 2021, 701397)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), May 1, 2021. "2020 Update to the Site Discharge Pollution Prevention Plan, Los Alamos National Laboratory, NPDES Permit No. NM0030759, Volume 5," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0006, Los Alamos, New Mexico. (N3B 2021, 701398)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), July 15, 2021. "NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures for 3M-SMA-0.2, CDV-SMA-2.42, and LA-SMA-5.2, PT-SMA-2, and STRM-SMA-1.5," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0196, EM2021-0373, EM2021-0374, EM2021-0375, EM2021-0376, EM2021-0377, Los Alamos, New Mexico. (N3B 2021, 701533)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), August 6, 2021. "NPDES Permit No. NM0030759 – Analytical Results for Site Monitoring Areas CHQ-SMA-1.02, CHQ-SMA-6, and PJ-SMA-5 from the First Measureable Storm Event Following Certification of Enhanced Control Measures," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0241, EM2021-0447, EM2021-0445, EM2021-0446, Los Alamos, New Mexico. (N3B 2021, 701568)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), August 27, 2021. "NPDES Permit No. NM0030759 – Analytical Results for Site Monitoring Area PJ-SMA-11 from the First Measureable Storm Event Following Certification of Enhanced Control Measures," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0268, EM2021-0475, Los Alamos, New Mexico. (N3B 2021, 701597)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 29, 2021. "NPDES Permit No. NM0030759 – Analytical Results for Site Monitoring Areas PJ-SMA-9 and STRM-SMA-4.2 from the First Measureable Storm Event Following Certification of Enhanced Control Measures," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0313, EM2021-0574, EM2021-0575, Los Alamos, New Mexico. (N3B 2021, 701687)

## Appendix D, References (continued)

- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 30, 2021. "Class 3 Permit Modification Request for 19 Corrective Action Complete Sites in Pueblo Canyon Aggregate Area for the Los Alamos National Laboratory Hazardous Waste Facility Permit, EPA ID No. NM0890010515," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0316, EM2021-0558, Los Alamos, New Mexico. (N3B 2021, 701693)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), October 8, 2021. "NPDES Permit No. NM0030759 – Analytical Results for Site Monitoring Areas CDB-SMA-1 and CHQ-SMA-0.5 from the First Measureable Storm Event Following Certification of Enhanced Control Measures," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0325, EM2021-0611, EM2021-0612, Los Alamos, New Mexico. (N3B 2021, 701714)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), October 12, 2021. "NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures for CHQ-SMA-4," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0284, EM2021-0518, Los Alamos, New Mexico. (N3B 2021, 701717)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), November 4, 2021. "NPDES Permit No. NM0030759 – Analytical Results for Site Monitoring Areas CDV-SMA-7, CDV-SMA-9.05, F-SMA-2, PJ-SMA-11.1, PT-SMA-2, and S-SMA-6 from the First Measureable Storm Event Following Certification of Enhanced Control Measures," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0356, EM2021-0705, EM2021-0706, EM2021-0707, EM2021-0708, EM2021-0709, EM2021-0710, Los Alamos, New Mexico. (N3B 2021, 701754)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), December 7, 2021. "NPDES Permit No. NM0030759 – Certification of Installation of Enhanced Control Measures at A-SMA-1.1 and A-SMA-3," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0391, EM2021-0740, EM2021-0741, Los Alamos, New Mexico. (N3B 2021, 701797)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), December 16, 2021. "NPDES Permit No. NM0030759 – Completion of Corrective Action at Site 05-001(c) in M-SMA-13 Following Certification of Completion by the New Mexico Environment Department," Newport News Nuclear BWXT-Los Alamos, LLC, documents N3B-2021-0414, EM2021-0760, Los Alamos, New Mexico. (N3B 2021, 701813)
- NMED (New Mexico Environment Department), June 3, 1997. "Approval of Los Alamos and Pueblo Canyon RFI Workplan (Operable Unit 1049)," New Mexico Environment Department letter to T. Taylor (DOE-LAAO) and J. Jansen (ER Project) from R.S. Dinwiddie (NMED-HRMB), Santa Fe, New Mexico. (NMED 1997, 056362)
- NMED (New Mexico Environment Department), January 23, 2008. "Approval of Los Alamos National Laboratory Proposal for No Further Action," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2008, 100116)
- NMED (New Mexico Environment Department), January 12, 2009. "Approval, Delta Prime Site Aggregate Area Phase II Work Plan, Revision 1," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2009, 104978)

## Appendix D, References (continued)

- NMED (New Mexico Environment Department), April 6, 2010. "Approval, Request for Certificates of Completion for Two Solid Waste Management Units and Five Areas of Concern in the North Ancho Canyon Aggregate Area," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2010, 110430)
- NMED (New Mexico Environment Department), September 7, 2010. "Certificates of Completion, Upper Mortandad Canyon Aggregate Area," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2010, 110665)
- NMED (New Mexico Environment Department), October 19, 2010. "Direction to Modify Phase II Investigation Report for Delta Prime Site Aggregate Area, Technical Area 21, Revision 1," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2010, 110959)
- NMED (New Mexico Environment Department), January 14, 2011. "Certificate of Completion, Pueblo Canyon Aggregate Area, Area of Concern (AOC) 00-018(b)," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2011, 111673)
- NMED (New Mexico Environment Department), February 18, 2011. "Certificates of Completion, Upper Sandia Canyon Aggregate Area," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2011, 111821)
- NMED (New Mexico Environment Department), May 4, 2011. "Certificates of Completion Request, Middle Mortandad/Ten Site Aggregate Area SWMUs and AOCs," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2011, 203066)
- NMED (New Mexico Environment Department), May 16, 2012. "Certificates of Completion, One Solid Waste Management Unit and One Area of Concern in the Guaje/Barrancas/Rendija Canyons Aggregate Area," New Mexico Environment Department letter to P. Maggiore (DOE-LASO) and M.J. Graham (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2012, 520388)
- NMED (New Mexico Environment Department), July 13, 2012. "Approval of Request for Certificates of Completion for Six Solid Waste Management Units and One Area of Concern in the Upper Cañada del Buey Aggregate Area," New Mexico Environment Department letter to P. Maggiore (DOE-LASO) and M.J. Graham (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2012, 520940)
- NMED (New Mexico Environment Department), May 18, 2015. "Certificates of Completion, Three Solid Waste Management Units, Middle Mortandad/Ten Site Aggregate Area," New Mexico Environment Department letter to C. Gelles (DOE-NA-LA) and M.T. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2015, 600446)

## Appendix D, References (continued)

- NMED (New Mexico Environment Department), October 14, 2015. "Certificates of Completion, Seventeen Solid Waste Management Units and Eight Areas of Concern at Technical Area 35, Middle Mortandad/Ten Site Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and M. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2015, 600985)
- NMED (New Mexico Environment Department), January 19, 2016. "Certificates of Completion, Two Areas of Concern and Twelve Solid Waste Management Units in the Delta Prime Site Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and M. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2016, 601146)
- NMED (New Mexico Environment Department), July 22, 2016. "Certificate of Completion, One Area of Concern C-00-041, in the Guaje/Barrancas/Rendija Canyons Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and M. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2016, 601644)
- NMED (New Mexico Environment Department), August 1, 2016. "Approval of Request for Certificates of Completion for Nineteen Solid Waste Management Units and Two Areas of Concern in the Upper Cañon de Valle Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and M.T. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2016, 601692)
- NMED (New Mexico Environment Department), September 6, 2016. "Approval, Phase III Investigation Report for Delta Prime Site Aggregate Area at Technical Area 21, Revision 1," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and M. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2016, 601800)
- NMED (New Mexico Environment Department), November 9, 2016. "Fee Assessment and Approval Request for a Class 1 Permit Modification to Revise Table K-1 of Attachment K of the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit EPA ID #NM0890010515," New Mexico Environment Department letter to J. Bretzke (LANL) and D. Rhodes (DOE EM-LA) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2016 601988)
- NMED (New Mexico Environment Department), January 31, 2017. "Approval of Request for Certificates of Completion for Three Areas of Concern and Twenty-Six Solid Waste Management Units in the Bayo Canyon Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and M. Brandt (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2017, 602136)
- NMED (New Mexico Environment Department), June 6, 2017. "Approval Investigation Report for the Former Los Alamos Inn Property Sites within the Upper Los Alamos Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and B. Robinson (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2017, 602438)
- NMED (New Mexico Environment Department), July 13, 2017. "Approval of Request for Certificates of Completion without Controls for Nine Solid Waste Management Units and One Area of Concern in the Upper Los Alamos Canyon Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and B. Robinson (LANL) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2017, 602514)



## Appendix D, References (continued)

- NMED (New Mexico Environment Department), September 4, 2018. "Request for Certificates of Completion for Twenty-Three Solid Waste Management Units and Four Areas of Concern in the Delta Prime Site Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and N. Lombardo (N3B) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2018, 700067)
- NMED (New Mexico Environment Department), December 7, 2018. "Approval Class 1 Permit Modification Requiring Prior Approval to Add Solid Waste Management Unit 02-014 to the Los Alamos National Laboratory Hazardous Waste Facility Permit EPA ID #NM0890010515," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2018, 700146)
- NMED (New Mexico Environment Department), February 8, 2019. "Approval Class 1 Permit Modification Request to Add Solid Waste Management Unit 40-003(a) and Area of Concern C-06-019 to Table K-1, Attachment K, and to Remove Area of Concern C-06-019 from Table K-3, Attachment K, of the Hazardous Waste Facility Permit Los Alamos National Laboratory EPA IE #NM0890010515," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and G. Morgan (N3B) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700293)
- NMED (New Mexico Environment Department), February 15, 2019. "Clarification Class 1 Permit Modification Request to Add Solid Waste Management Unit 40-003(a) and Area of Concern C-06-019 to Table K-1, Attachment K, and to Remove Area of Concern C-06-019 from Table K-3, Attachment K, of the Hazardous Waste Facility Permit Los Alamos National Laboratory EPA IE #NM0890010515," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) and G. Morgan (N3B) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700294)
- NMED (New Mexico Environment Department), March 20, 2019. "Request for Certificates of Completion for Four Solid Waste Management Units in the Lower Mortandad/Cedro Canyons Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700344)
- NMED (New Mexico Environment Department), June 24, 2019. "Disapproval Request for Certificates of Completion for SWMUs in the Delta Prime Site Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700487)
- NMED (New Mexico Environment Department), October 22, 2019. "Clarification Certificate of Completion with Controls for Solid Waste Management Unit 03-055(c) in the Upper Los Alamos Canyon Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700640)
- NMED (New Mexico Environment Department), October 25, 2019. "Approval, Supplemental Investigation Report for S-Site Aggregate Area, Revision 1," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from J.E. Kielling (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700647)
- NMED (New Mexico Environment Department), December 12, 2019. "Approval with Modifications Phase II Investigation Work Plan for Delta Prime Site Aggregate Area Sites at Delta Prime East and Delta Prime West," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from D. Cobrain (NMED-HWB), Santa Fe, New Mexico. (NMED 2019, 700713)

## Appendix D, References (continued)

- NMED (New Mexico Environment Department), January 14, 2020. "Approval Request for Certificates of Completion for SWMUs 21-027(c) and 21-027(d) in The Delta Prime Site Aggregate Area," New Mexico Environment Department letter to D. Hintze (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 700730)
- NMED (New Mexico Environment Department), February 21, 2020. "Review of 2019 Triennial Ordnance Survey Report, Solid Waste Management Unit 00-011 (A, D, and E), Guaje/Barrancas/Rendija Canyons Aggregate Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 700773)
- NMED (New Mexico Environment Department), May 14, 2020. "Re: Field Completion Letter Report for Aggregate Area Known Cleanup Sites Campaign: SWMU 39-002(a), SWMU 46-004(q), SWMU 15-008(b), and SWMU 15-007(c) Fiscal Year 2019 Milestone #19, Appendix B, 2016 Consent Order Los Alamos National Laboratory EPA ID # NM0890010515," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 700910)
- NMED (New Mexico Environment Department), July 9, 2020. "Review 2019 Biennial Asphalt Monitoring and Removal Report for Area of Concern C-00-041, Guaje/Barrancas/Rendija Canyons Aggregate Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 700970)
- NMED (New Mexico Environment Department), September 9, 2020. "Approval Supplemental Investigation Report Upper Mortandad Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 701030)
- NMED (New Mexico Environment Department), October 15, 2020. "Approval Supplemental Investigation Report for Potrillo and Fence Canyons Aggregate Area, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 701070)
- NMED (New Mexico Environment Department), November 18, 2020. "Approval Supplemental Investigation Report for Cañon de Valle Aggregate Area, Technical Area 14, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 701114)
- NMED (New Mexico Environment Department), March 4, 2021. "Approval Supplemental Investigation Report for Upper Cañon del Buey Aggregate Area, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701289)
- NMED (New Mexico Environment Department), March 23, 2021. "Approval Phase II Investigation Report of Upper Los Alamos Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701341)
- NMED (New Mexico Environment Department), April 5, 2021. "Approval Solid Waste Management Unit Assessment Work Plan for Middle DP Road Site, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701368)

## Appendix D, References (continued)

- NMED (New Mexico Environment Department), April 13, 2021. "Re: Delta Prime Site Aggregate Area Progress Report for Fiscal Year 2020," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701377)
- NMED (New Mexico Environment Department), April 15, 2021. "Re: 2020 Annual Long-term Monitoring and Maintenance Report for the Corrective Measures Implementation at Former 260 Outfall Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701381)
- NMED (New Mexico Environment Department), July 26, 2021. "Approval Phase II Investigation Work Plan for Chaquehui Canyon Aggregate Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701546)
- NMED (New Mexico Environment Department), August 5, 2021. "Approval Supplemental Investigation Report for Lower Sandia Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701567)
- NMED (New Mexico Environment Department), September 2, 2021. "Approval Request for Certificates of Completion for 11 Solid Waste Management Units and 3 Areas of Concern in the Upper Los Alamos Canyon Aggregate Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701616)
- NMED (New Mexico Environment Department), September 29, 2021. "Approval Investigation Report for Chaquehui Canyon Aggregate Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701685)
- NMED (New Mexico Environment Department), October 6, 2021. "Review Biennial Inspection and Maintenance Report on Erosion Control Associated with Solid Waste Management Unit 16-003(o) within Fishladder Canyon," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701711)
- NMED (New Mexico Environment Department), October 20, 2021. "Review: 2020-2021 Annual Long-term Monitoring Status Report (July 2020 through June 2021) for the Los Alamos County Airport Landfill Cover System Replacement, Solid Waste Management Units 73-001(a,d) in TA-73," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701737)
- NMED (New Mexico Environment Department), October 27, 2021. "Approval Request for Certificates of Completion Without Controls for Solid Waste Management Unit 01-003(E)," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701732)
- NMED (New Mexico Environment Department), November 29, 2021. "Re: Request for Certificates of Completion for Five Solid Waste Management Units in the Pueblo Canyon Aggregate Area," New Mexico Environment Department letter to A. Duran (DOE EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701776)

## ***Appendix D, References (continued)***

- NMED (New Mexico Environment Department), December 7, 2021. "Re: Administratively Incomplete Determination Class 3 Permit Modification Request for 19 Corrective Action Complete Sites in Pueblo Canyon Aggregate Area Laboratory Hazardous Waste Permit EPA ID#NM0890010515," New Mexico Environment Department letter to T. Wyka (NNSA-LANL) and M. Mikolanis (DOE EM-LA) from R. Shean (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701793)
- Nonno, L., February 22, 2012. "Documentation of 'No Further Action' under the Consent Order for 20 RCRA Hazardous Waste Management Units," Los Alamos National Laboratory memorandum to file from L. Nonno (LANL), Los Alamos, New Mexico. (Nonno 2012, 210148)
- WGII (Washington Group International, Inc.), October 3, 2000. "Mortandad Canyon Sediment Trap Maintenance, Final Closeout Report," Los Alamos, New Mexico. (WGII 2000, 070735)