



**Sandia
National
Laboratories**

Sandia National Laboratories, New Mexico

Environmental Restoration Project

A U.S. Department of Energy Environmental Cleanup Program

**CONSOLIDATED
Quarterly Report**

August through October 2010

December 2010



United States Department of Energy
Sandia Site Office

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

CONSOLIDATED
QUARTERLY REPORT

December 2010

SANDIA NATIONAL LABORATORIES, NEW MEXICO (SNL/NM)

ENVIRONMENTAL RESTORATION PROJECT

U.S. DEPARTMENT OF ENERGY (DOE): SANDIA SITE OFFICE
CONTRACTOR: SANDIA CORPORATION
PROJECT MANAGER: John Cochran

NUMBER OF POTENTIAL RELEASE SITES SUBJECT TO THIS PERMIT: 36

SUSPECT WASTE: Radionuclides, metals, organic compounds, and explosives

OVERVIEW

This Consolidated Quarterly Report for the SNL/NM Environmental Restoration Project addresses all quarterly reporting requirements pertaining to the Hazardous and Solid Waste Amendments Module of the Resource Conservation and Recovery Act Permit, the Compliance Order on Consent, and the Chemical Waste Landfill Closure Plan. The following entities and reporting periods are addressed as follows:

SECTION I

Environmental Restoration Project Quarterly Report, reporting period:
August through October 2010

SECTION II

Chemical Waste Landfill Progress Report, reporting period:
August through October 2010

SECTION III

Perchlorate Screening Semiannual Report, reporting period:
July through September 2010

ABBREVIATIONS AND ACRONYMS

AOC	Area of Concern
BSG	Burn Site Groundwater
BW	background well
CAC	Corrective Action Complete
CAMU	Corrective Action Management Unit
CFR	Code of Federal Regulations
CME	Corrective Measures Evaluation
CMI	Corrective Measures Implementation
COA	certificates of analyses
CSS	CWL sanitary sewer
CWL	Chemical Waste Landfill
CY	Calendar Year
CYN	Canyons (Burn Site)
DO	dissolved oxygen
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ET	evapotranspirative
FOP	Field Operating Procedure
GEL	GEL Laboratories, LLC
GWPP	Groundwater Protection Program
HI	hazard index
HQ	hazard quotient
HWMF	Hazardous Waste Management Facility
lbs	pounds
LE	Landfill Excavation
LTES	Long-Term Environmental Stewardship
LWDS	Liquid Waste Disposal System
MDL	method detection limit
µg/L	microgram per liter
MW	monitoring well
MWL	Mixed Waste Landfill
ND	nondetect
NMED	New Mexico Environment Department
NOD	Notice of Disapproval
ORP	oxidation-reduction potential
pH	potential of hydrogen

PPE	personal protective equipment
QC	quality control
RCRA	Resource Conservation and Recovery Act
Sandia	Sandia Corporation
SAP	Sampling and Analysis Plan
SC	specific conductance
SNL/NM	Sandia National Laboratories, New Mexico
SWMU	Solid Waste Management Unit
TA	Technical Area
TAG	Tijeras Arroyo Groundwater
TSCA	Toxic Substances Control Act
VCM	Voluntary Corrective Measure
VZMS	Vadose Zone Monitoring System

SECTION I
TABLE OF CONTENTS

ENVIRONMENTAL RESTORATION CONSOLIDATED QUARTERLY REPORT	3
1.0 Introduction	3
2.0 ER Work Completed	3
2.1 Mixed Waste Landfill Investigation Activities	3
2.2 Project Management and Site Closure	4
2.2.1 Permit Modification Request Submitted in March 2006	4
2.2.2 Permit Modification Request Submitted in January 2008	4
2.2.3 Status of Permit Modification Requests Submitted in March 2006 and January 2008	5
2.3 Site-Wide Hydrogeologic Characterization	6
2.3.1 Technical Area III/V Groundwater	6
2.3.2 Burn Site Groundwater.....	7
2.3.3 Tijeras Arroyo Groundwater	7
2.3.4 Mixed Waste Landfill Groundwater	7
2.3.5 Chemical Waste Landfill Groundwater.....	7
2.3.6 SWMUs 8/58 Groundwater.....	8
2.3.7 SWMU 68 Groundwater	8
2.3.8 SWMU 149 Groundwater	8
2.3.9 SWMU 154 Groundwater	8
2.4 ER Documents Submitted to the NMED Pending Regulatory Review and Approval.....	9
3.0 Long-Term Environmental Stewardship/ER Work Completed this Quarter	10
3.1 Corrective Action Management Unit	10
3.1.1 Previous CAMU Waste Management Activities – Corrections for the May through July 2010 Reporting Period	11
3.1.2 CAMU Waste Management Activities – August through October Reporting Period	12
3.1.3 CAMU Regulatory Activities.....	12
3.2 Solid Waste Management Unit 81: Long-Term Environmental Stewardship Site 1, Cable Debris Site	12
3.3 LTES Site Documents Submitted to the NMED Pending Regulatory Review and Approval	13
4.0 References	13

This page intentionally left blank.

SECTION I

ENVIRONMENTAL RESTORATION CONSOLIDATED QUARTERLY REPORT

1.0 Introduction

This Environmental Restoration Consolidated Quarterly Report (ER Quarterly Report) discusses ongoing corrective actions being implemented by the Sandia National Laboratories, New Mexico (SNL/NM) Environmental Restoration (ER) Project. The status of regulatory closure activities is outlined in the following sections. In this section, “the Quarter” refers to the August through October 2010 quarterly reporting period.

2.0 ER Work Completed

2.1 Mixed Waste Landfill Investigation Activities

- In April 2010, the U.S. Department of Energy and Sandia Corporation (DOE/Sandia) received a letter from the New Mexico Environment Department (NMED) entitled, “Toluene Detections in Groundwater,” requiring further investigation to determine the source of toluene in the groundwater samples collected from monitoring wells at the Mixed Waste Landfill (MWL) (NMED April 2010a). As part of the investigation, the NMED required conducting a purging/sampling study of the groundwater as well as any other studies necessary to determine the toluene source (NMED April 2010a). DOE/Sandia submitted the MWL Toluene Investigation Report in August 2010 (SNL/NM August 2010) and received a Notice of Disapproval (NOD) with two comments from the NMED in September 2010 (NMED September 2010). The DOE/Sandia NOD response was submitted in October 2010 (SNL/NM October 2010) and included a revised version of the report.
- Groundwater monitoring activities at the MWL for the fourth quarter of Fiscal Year 2010 were completed in early July 2010. The July sampling event included quarterly sampling of MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9. The requirement for eight consecutive quarters of groundwater sampling at MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9 has been completed, and the sampling frequency for all existing MWL monitoring wells will be annual hereafter in accordance with Table XI-1 of the Compliance Order on Consent (NMED April 2004). All Calendar Year (CY) 2010 groundwater monitoring results will be presented in the MWL Annual Groundwater Monitoring Report for CY 2010 (anticipated delivery to the NMED by spring 2011).

2.2 **Project Management and Site Closure**

ER sites undergoing regulatory and administrative closure activities are presently addressed under project management. Two permit modification requests are currently in progress with the NMED and are summarized in this section. The sites, listed in Section 2.2.1, were discussed with the NMED and public stakeholders in June 2009 as part of the comment resolution process for the renewal of the SNL/NM Resource Conservation and Recovery Act (RCRA) Permit. The NMED verbally outlined their decisions about these sites at this meeting. In April 2010, DOE/Sandia received official written communication from the NMED regarding their decisions on these sites (NMED April 2010b). The decisions, presented in the NMED letter dated April 8, 2010, are summarized in this section.

2.2.1 **Permit Modification Request Submitted in March 2006**

- Twenty-six sites were submitted to the NMED for the final determination of Corrective Action Complete (CAC) in March 2006. The sites included 19 Solid Waste Management Units (SWMUs) and 7 Areas of Concern (AOCs). The NMED issued a Notice of Public Comment Period and Intent to Approve a Class 3 Permit Modification of the RCRA Permit for SNL/NM for these 26 sites in December 2007 (NMED December 2007). The NMED public review and comment period ended in February 2008. The SWMUs and AOCs included in this permit modification request are listed as follows:
 - SWMUs 4, 5, 46, 49, 52, 68, 91, 101, 116, 138, 140, 147, 149, 150, 154, 161, 196, 233, and 234
 - AOCs 1090, 1094, 1095, 1114, 1115, 1116, and 1117

2.2.2 **Permit Modification Request Submitted in January 2008**

- Five sites were submitted for the final regulatory determination of CAC in a permit modification request in January 2008 (Wagner January 2008). This permit modification included all remaining SNL/NM ER sites with the exception of three active sites (SWMUs 83, 84, and 240), three groundwater investigation sites (Tijeras Arroyo, Technical Area [TA]-V, and Burn Site), and the MWL (SWMU 76). The final report of the Corrective Measures Implementation (CMI) for the MWL was submitted in January 2010 (SNL/NM January 2010) and is pending NMED approval. The MWL is addressed separately in Section 2.1 of this ER Quarterly Report. The four SWMUs and one AOC included in the January 2008 permit modification request are listed as follows:

- SWMUs 8, 28-2, 58, and 105
- AOC 1101

2.2.3 **Status of Permit Modification Requests Submitted in March 2006 and January 2008**

- In April 2010, DOE/Sandia received a letter from the NMED entitled, “Class 3 Permit Modification Requests for Granting Corrective Action Complete Status for 26 SWMUs/AOCs (Request of March 1, 2006) and 5 Other SWMUs/AOCs (Request of January 7, 2008), Sandia National Laboratories, EPA ID# NM5890110518, HWB-SNL-06-007 and HWB-SNL-08-001” (NMED April 2010b). This letter included four main sections: “SWMUs Requiring Corrective Action,” “SWMUs/AOCs to be Subject to Groundwater Monitoring Controls,” “SWMUs/AOCs to be Restricted to Industrial Land Use,” and “SWMUs/AOCs that do not Require Corrective Action.” The NMED requirements stated in this letter are summarized as follows:
 - The section titled, “SWMUs Requiring Corrective Action,” specifies additional characterization requirements for SNL/NM SWMUs 68 (Old Burn Site), 149 (Building 9930 Septic System), 154 (Building 9960 Septic System and Seepage Pits), and 8/58 (Open Dump [Coyote Canyon Blast Area]/Coyote Canyon Blast Area). Activities associated with these requirements are summarized in Section 2.3 of this ER Quarterly Report.
 - The section titled, “SWMUs/AOCs to be Subject to Groundwater Monitoring Controls,” specifies that annual groundwater monitoring is to be conducted at SWMUs 49 and 116.
 - The section titled, “SWMUs/AOCs to be Restricted to Industrial Land Use,” indicates that the NMED intends to restrict the future land use of the following SWMUs/AOCs to industrial:
 1. SWMU 4 – Liquid Waste Disposal System Surface Impoundments
 2. SWMU 46 – Old Acid Waste Line Outfall
 3. SWMU 196 – Building 6597 Cistern (Technical Area [TA]-V)
 4. SWMU 234 – Storm Drain System Outfall
 5. AOC 1090 – Building 6721 Septic System (TA-III)

- The section titled, “SWMUs/AOCs that do not Require Corrective Action,” includes the following SWMUs/AOCs:

1. SWMU 4 – Liquid Waste Disposal System Surface Impoundments
2. SWMU 5 – Liquid Waste Disposal System Drainfield
3. SWMU 28-2 – Mine Shaft
4. SWMU 46 – Old Acid Waste Line Outfall
5. SWMU 49 – Building 9820 Drains (Lurance Canyon)
6. SWMU 91 – Lead Firing Site
7. SWMU 101 – Building 9926/9926A Septic System and Seepage Pit (Coyote Test Field)
8. SWMU 105 – Mercury Spill (Building 6536)
9. SWMU 116 – Building 9990 Septic System (Coyote Test Field)
10. SWMU 138 – Building 6630 Septic Systems (TA-III)
11. SWMU 140 – Building 9965 Septic System and Drywell (Thunder Range)
12. SWMU 147 – Building 9925 Septic Systems (Coyote Test Field)
13. SWMU 150 – Building 9939/9939A Septic System and Drainfield (Coyote Test Field)
14. SWMU 161 – Building 6636 Septic System (TA-III)
15. SWMU 196 – Building 6597 Cistern (TA-V)
16. SWMU 233 – Storm Drain System Outfall
17. SWMU 234 – Storm Drain System Outfall
18. AOC 1090 – Building 6721 Septic System (TA-III)
19. AOC 1094 – Live Fire Range East Septic System (Lurance Canyon)
20. AOC 1095 – Building 9938 Seepage Pit (Coyote Test Field)
21. AOC 1101 – Building 885 Septic System
22. AOC 1114 – Building 9978 Drywell (Coyote Test Field)
23. AOC 1115 – Former Offices Septic System (Solar Tower Complex)
24. AOC 1116 – Building 9981A Seepage Pit (Solar Tower Complex)
25. AOC 1117 – Building 9982 Drywell (Solar Tower Complex)

2.3 **Site-Wide Hydrogeologic Characterization**

The following sections provide site-wide hydrogeological characterization activities at three groundwater investigation sites, the Chemical Waste Landfill (CWL), and the 5 SWMU’s subject to groundwater monitoring controls as discussed in Section 2.2 of this ER Quarterly Report.

2.3.1 **Technical Area III/V Groundwater**

- Groundwater sampling in TA-III/V was completed in August and September 2010. Analytical results will be discussed in the CY 2010 Groundwater Protection Program (GWPP) Annual Groundwater Monitoring Report (anticipated submittal to the NMED in summer 2011).

- In October 2010, DOE/Sandia began implementing the work plan attached to the DOE/Sandia response to the NMED's third NOD on the TA-V Corrective Measures Evaluation (CME) Report (SNL/NM July 2005).

2.3.2 **Burn Site Groundwater**

- Groundwater sampling for the Burn Site Groundwater (BSG) was completed in September 2010. Results of perchlorate analysis are discussed in Section III of this ER Quarterly Report, and other analytical results will be discussed in the CY 2010 GWPP Annual Groundwater Monitoring Report (anticipated submittal to the NMED in summer 2011).
- In August 2010, DOE/Sandia began preparing a report describing the fieldwork performed in accordance with the BSG Characterization Work Plan.

2.3.3 **Tijeras Arroyo Groundwater**

- Groundwater sampling for the Tijeras Arroyo Groundwater (TAG) investigation was completed in August 2010. Results of perchlorate analysis are discussed in Section III of this ER Quarterly Report, and other analytical results will be discussed in the CY 2010 GWPP Annual Groundwater Monitoring Report (anticipated submittal to the NMED in summer 2011).

2.3.4 **Mixed Waste Landfill Groundwater**

- No MWL groundwater monitoring activities were performed during this reporting period (August through October 2010). The final CY 2010 groundwater sampling event at the MWL was performed in July 2010. Results from all CY 2010 groundwater sampling events will be presented in the MWL Annual Groundwater Monitoring Report for CY 2010 (anticipated submittal to the NMED in early 2011).

2.3.5 **Chemical Waste Landfill Groundwater**

- No CWL groundwater monitoring activities were performed during this reporting period (August through October 2010).
- Land surveying and final reporting for the four new groundwater monitoring wells (CWL-BW5, CWL-MW9, CWL-MW10, and CWL-MW11) installed in June 2010 and the four groundwater monitoring wells decommissioned at that time (CWL-BW4A, CWL-MW4, CWL-MW5U/L, and CWL-MW6U/L) were completed during August and

September 2010, respectively. The Well Installation and Decommissioning Report was included as Appendix F of the Final RCRA Closure Report (SNL/NM September 2010a) submitted to the NMED on September 27, 2010, in accordance with the requirements of the CWL Closure Plan (NMED October 2009).

2.3.6 **SWMUs 8/58 Groundwater**

- In September, DOE/Sandia submitted to the NMED a “Groundwater Characterization Work Plan for SWMU 8 – Open Dump (Coyote Canyon Blast Area) and SWMU 58 – Coyote Canyon Blast Area, Foothills Test Area,” as Attachment B to *SWMU 68 and SWMUs 8/58 Groundwater Characterization Work Plans –DOE/Sandia Responses to the New Mexico Environment Department Letter of April 8, 2010 entitled, “Class 3 Permit Modification Requests for Granting Corrective Action Complete Status for 26 SWMUs/AOCs (request of March 1, 2006) and 5 Other SWMUs/AOCs (request of January 7, 2008)”* (SNL/NM September 2010b).

2.3.7 **SWMU 68 Groundwater**

- In September, DOE/Sandia submitted to the NMED a “Groundwater Characterization Work Plan for SWMU 68, Old Burn Site,” as Attachment A to *SWMU 68 and SWMUs 8/58 Groundwater Characterization Work Plans –DOE/Sandia Responses to the New Mexico Environment Department Letter of April 8, 2010 entitled, “Class 3 Permit Modification Requests for Granting Corrective Action Complete Status for 26 SWMUs/AOCs (request of March 1, 2006) and 5 Other SWMUs/AOCs (request of January 7, 2008)”* (SNL/NM September 2010b).

2.3.8 **SWMU 149 Groundwater**

No groundwater monitoring activities were performed at SWMU 149 during this reporting period (August through October 2010).

2.3.9 **SWMU 154 Groundwater**

No groundwater monitoring activities were performed at SWMU 154 during this reporting period (August through October 2010).

2.4 **ER Documents Submitted to the NMED Pending Regulatory Review and Approval**

The following section lists the documents that have been submitted to the NMED that as of this reporting period are still pending approval.

- The TA-V Groundwater CME Work Plan was submitted to the NMED on May 11, 2004 (SNL/NM April 2004).
- The BSG Interim Measures Work Plan was submitted to the NMED on May 26, 2005 (SNL/NM May 2005).
- The CME Report for the TAG Investigation was submitted to the NMED on September 1, 2005 (SNL/NM August 2005).
- The BSG CME Work Plan was submitted to the NMED on April 9, 2008 (SNL/NM March 2008a).
- The BSG Current Conceptual Model of Groundwater Flow and Contaminant Transport was submitted to the NMED on April 9, 2008 (SNL/NM March 2008b).
- The MWL CMI Report was submitted to the NMED on January 26, 2010 (SNL/NM January 2010).
- A Sampling and Analysis Plan (SAP) for Monitoring Well CTF-MW2 located near SWMU 154 was submitted to the NMED on June 24, 2010 (SNL/NM June 2010).
- A SAP for Monitoring Well CTF-MW3 located near SWMU 149 was submitted to the NMED on June 24, 2010 (SNL/NM June 2010).
- The MWL Toluene Investigation Report was submitted to the NMED on August 18, 2010 (SNL/NM August 2010). DOE/Sandia submitted the response to the NMED NOD on September 23, 2010 (SNL/NM October 2010), with a revised MWL Toluene Investigation Report (SNL/NM October 2010).
- The CWL Final RCRA Closure Report was submitted to the NMED on September 27, 2010 (SNL/NM September 2010a)

3.0 **Long-Term Environmental Stewardship/ER Work Completed this Quarter**

3.1 **Corrective Action Management Unit**

Corrective Action Management Unit (CAMU) post-closure care operations consist of vadose-zone monitoring, leachate removal, and post-closure inspections, as required in the Post-Closure Care Permit. Activities for this reporting period include the following:

- Weekly pumping of leachate from the leachate collection and removal system.
- Weekly inspection of the less-than-90-day accumulation area.
- Quarterly inspection of the site was performed on September 21, 2010, that included the containment cell cover, storm water diversion structures, security fences, gates, signs, and benchmarks:
 - During site inspection activities, 18 four-wing saltbush plants were identified growing on the cover. Because these plants can develop extensive root systems that could damage the high-density polyethylene fabric that is part of the cover system, they were removed on October 29, 2010.
 - On November 22, 2010, a request was submitted to SNL/NM Facilities for the removal of tumbleweeds and excess vegetation around the containment cell.
- Quarterly monitoring of the Vadose Zone Monitoring System (VZMS) was conducted in September 2010. The results will be presented in the 2011 CAMU VZMS Annual Monitoring Results report (anticipated submittal to the NMED in September 2011). Waste management associated with the leachate collection and removal system was conducted and is outlined in Section 3.1.2.
- Composite leachate sampling for waste characterization was conducted on August 31, 2010.
- Additional nonroutine activities performed during this reporting period include installing a liner in the sanitary sewer line that parallels the east side of the CAMU containment cell at a distance of approximately 50 feet. Installation was completed on September 1, 2010. The newly installed liner will prevent leakage from the CWL sanitary sewer (CSS) that might affect soil moisture levels at the CSS-1 through CSS-6 monitoring locations.

In September 2005 it was first noticed that soil moisture values were increasing at the CSS-2 12- and 16-foot monitoring depths. The increased values below the CSS line indicated that a leak might exist in the sanitary sewer line near the CSS-2 location (SNL/NM September 2007). Soil moisture values have increased at the CSS-3 12-foot depth since March 2007 and have remained stable at the 16-foot depth (SNL/NM September 2009). Soil moisture values have currently stabilized at both CSS-2 and CSS-3 monitoring locations. Future quarterly soil moisture monitoring of the CSS locations will monitor the effectiveness of the liner.

3.1.1 **Previous CAMU Waste Management Activities – Corrections for the May through July 2010 Reporting Period**

Reporting errors for CAMU Waste Management Activities were identified in the September 2010 ER Quarterly Report. The corrected waste management data for this previous reporting period (May through July 2010) is reported as follows:

- Waste stored on site at the beginning of this period:
 - 131 gallons of leachate
 - 2 gallons of rinsate
 - 2 pounds (lbs) personal protective equipment (PPE)

- Waste generated on-site during the period:
 - 114 gallons of leachate
 - 2 gallons of rinsate
 - 5 lbs PPE, paper wipes, plastic drum pump

- Waste removed from the site by the Hazardous Waste Management Facility (HWMF):
 - 109 gallons of leachate on May 3, 2010
 - 93 gallons of leachate on June 30, 2010
 - 4 gallons of rinsate on June 30, 2010
 - 5 lbs PPE, paper wipes, plastic drum pump on June 30, 2010

- Waste remaining on site at the end of this period:
 - 43 gallons of leachate
 - 0 gallons of rinsate
 - 2 lbs PPE

3.1.2 **CAMU Waste Management Activities – August through October Reporting Period**

During the reporting period (August through October 2010), the following waste management data for the CAMU were reported:

- Waste stored on site at the beginning of this period:
 - 43 gallons of leachate
 - 0 gallons of rinsate
 - 2 lbs PPE

- Waste generated on-site during the period:
 - 125 gallons of leachate
 - 2 gallons of rinsate
 - 5 lbs PPE, paper wipes, plastic drum pump

- Waste removed from the site by the HWMF:
 - 85 gallons of leachate on September 7, 2010
 - 2 gallons of rinsate on September 7, 2010
 - 5 lbs PPE, paper wipes, plastic drum pump on September 7, 2010

- Waste remaining on site at the end of this period:
 - 83 gallons of leachate
 - 0 gallons of rinsate
 - 2 lbs PPE

3.1.3 **CAMU Regulatory Activities**

The 2010 CAMU VZMS Annual Monitoring Results Report was submitted to the NMED on September 23, 2010 (SNL/NM September 2010c).

3.2 **Solid Waste Management Unit 81: Long-Term Environmental Stewardship Site 1, Cable Debris Site**

In August, 2010, the NMED issued a Notice of Approval for the Investigation Report and Proposal for Corrective Action Complete; Long-Term Environmental Stewardship (LTES) Site 1 Cable Debris Site (NMED August 2010).

3.3 **LTES Site Documents Submitted to the NMED Pending Regulatory Review and Approval**

No LTES Site documents submitted to the NMED are pending regulatory review and approval.

4.0 **References**

New Mexico Environment Department (NMED), April 2004. "Compliance Order on Consent, Pursuant to the New Mexico Hazardous Waste Act, § 74-4-10," New Mexico Environment Department, Santa Fe, New Mexico. April 29, 2004.

New Mexico Environment Department (NMED), December 2007. "Notice of Public Comment Period and Intent to Approve a Class 3 Permit Modification of the RCRA Permit for Sandia National Laboratories," New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico. December 10, 2007.

New Mexico Environment Department (NMED), October 2009. "Notice of Approval, Final Remedy and Closure Plan Amendment, Chemical Waste Landfill Sandia National Laboratories, EPA ID No. NM5890110518, NMED-HWB-05-016," New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico. October 16, 2009.

New Mexico Environment Department (NMED), April 2010a. Letter to P. Wagner (U.S. Department of Energy) and M. Walck (Sandia Corporation), "Toluene Detections in Groundwater, Sandia National Laboratories Mixed Waste Landfill," New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico. April 30, 2010.

New Mexico Environment Department (NMED), April 2010b. Letter to K. Davis (U.S. Department of Energy) and M. Walck (Sandia Corporation). "Class 3 Permit Modification Requests for Granting Corrective Action Complete Status for 26 SWMUs/AOCs (Request of March 1, 2006) and 5 Other SWMUs/AOCs (Request of January 7, 2008), Sandia National Laboratories, EPA ID# NM5890110518, HWB-SNL-06-007 and HWB-SNL-08-001," New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico. April 8, 2010.

New Mexico Environment Department (NMED), August 2010. Letter to P. Wagner (U.S. Department of Energy) and M. Walck (Sandia Corporation). "Notice of Approval. Investigation Report and Proposal for Corrective Action Complete, Long-Term Environmental Stewardship (LTES) Site 1 – Cable Debris Site," New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico. August 26, 2010.

New Mexico Environment Department (NMED), September 2010. Letter to P. Wagner (U.S. Department of Energy) and M. Walck (Sandia Corporation). "Notice of Disapproval Mixed Waste Landfill Toluene Investigation Report, August 2010," New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico. September 30, 2010.

NMED, see New Mexico Environment Department

Sandia National Laboratories/New Mexico (SNL/NM), April 2004. "Corrective Measures Evaluation Work Plan, Technical Area V Groundwater," Sandia National Laboratories, Albuquerque, New Mexico. May 11, 2004.

Sandia National Laboratories/New Mexico (SNL/NM), May 2005. "Burn Site Groundwater Interim Measures Work Plan," Sandia National Laboratories, Albuquerque, New Mexico. May 26, 2005.

Sandia National Laboratories/New Mexico (SNL/NM), July 2005. "Corrective Measures Evaluation Report for Technical Area-V Groundwater," Sandia National Laboratories, Albuquerque, New Mexico. July 21, 2005.

Sandia National Laboratories/New Mexico (SNL/NM), August 2005. "Corrective Measures Evaluation Report for Tijeras Arroyo Groundwater," Sandia National Laboratories, Albuquerque, New Mexico. September 1, 2005.

Sandia National Laboratories/New Mexico (SNL/NM), September 2007. "Corrective Action Management Unit Vadose Zone Monitoring System Annual Monitoring Results Report," Sandia National Laboratories, Albuquerque, New Mexico. September 26, 2007.

Sandia National Laboratories/New Mexico (SNL/NM), March 2008a "Corrective Measures Evaluation Work Plan, Burn Site Groundwater," Sandia National Laboratories, Albuquerque, New Mexico. April 9, 2008.

Sandia National Laboratories/New Mexico (SNL/NM), March 2008b. "Current Conceptual Model of Groundwater Flow and Contaminant Transport at Sandia National Laboratories/New Mexico Burn Site," Sandia National Laboratories, Albuquerque, New Mexico. April 9, 2008.

Sandia National Laboratories/New Mexico (SNL/NM), September 2009. "Corrective Action Management Unit Vadose Zone Monitoring System Annual Monitoring Results Report," Sandia National Laboratories, Albuquerque, New Mexico. September 30, 2009.

Sandia National Laboratories/New Mexico (SNL/NM), January 2010. "Mixed Waste Landfill Corrective Measures Implementation Report," Sandia National Laboratories, Albuquerque, New Mexico. January 26, 2010.

Sandia National Laboratories/New Mexico (SNL/NM), June 2010. Sampling and Analysis Plans for Monitoring Wells CTF-MW2 and CTF-MW3 in “U.S. Department of Energy/Sandia Corporation Response to the New Mexico Environment Department Letter of April 8, 2010, entitled, *Class 3 Permit Modification Requests for Granting Corrective Action Complete Status for 26 SWMUs/AOCs (Request of March 1, 2006) and 5 Other SWMUs/AOCs (Request of January 7, 2008)*,” Sandia National Laboratories, Albuquerque, New Mexico. June 24, 2010.

Sandia National Laboratories/New Mexico (SNL/NM), August 2010. “Mixed Waste Landfill Toluene Investigation Report,” Sandia National Laboratories, Albuquerque, New Mexico. August 18, 2010, revised October 2010.

Sandia National Laboratories/New Mexico (SNL/NM), September 2010a. “Chemical Waste Landfill Final Resource Conservation and Recovery Act Closure Report,” Sandia National Laboratories, Albuquerque, New Mexico. September 27, 2010.

Sandia National Laboratories/New Mexico (SNL/NM), September 2010b. “Groundwater Characterization Work Plan for SWMU 68, Old Burn Site,” Attachment A in SWMU 68 and SWMUs 8/58 Groundwater Characterization Work Plans – DOE/Sandia Responses to the New Mexico Environment Department Letter of April 8, 2010, entitled, *Class 3 Permit Modification Requests for Granting Corrective Action Complete Status for 26 SWMUs/AOCs (request of March 1, 2006) and 5 Other SWMUs/AOCs (request of January 7, 2008)*,” Sandia National Laboratories, Albuquerque, New Mexico. September 23, 2010.

Sandia National Laboratories/New Mexico (SNL/NM), September 2010c. “Corrective Action Management Unit Vadose Zone Monitoring System Annual Monitoring Results Report,” Sandia National Laboratories, Albuquerque, New Mexico. September 23, 2010.

Sandia National Laboratories/New Mexico (SNL/NM), October 2010. DOE/Sandia Responses to NMED’s “Notice of Disapproval: Mixed Waste Landfill Toluene Investigation Report, August 2010,” Sandia National Laboratories, Albuquerque, New Mexico. September 23, 2010.

SNL/NM, see Sandia National Laboratories/New Mexico.

Wagner, P. (U.S. Department of Energy), January 2008. Letter to J.P. Bearzi (New Mexico Environment Department) initiating a Class 3 Modification for the Designation of four (4) Solid Waste Management Units (SWMUs) and one (1) Area of Concern (AOC) as “approved for No Further Action.” January 7, 2008.

SECTION II
TABLE OF CONTENTS

CHEMICAL WASTE LANDFILL QUARTERLY PROGRESS REPORT3

1.0 Introduction3

2.0 Status of Closure4

3.0 Groundwater and Soil-Gas Monitoring.....5

4.0 Projected Activities for the Upcoming Quarter.....5

5.0 References5

This page intentionally left blank.

SECTION II

CHEMICAL WASTE LANDFILL QUARTERLY PROGRESS REPORT

This Quarterly Closure Progress Report for the Sandia National Laboratories, New Mexico Chemical Waste Landfill (CWL) has been prepared pursuant to the CWL Final Closure Plan and Post-Closure Care Permit Application (Closure Plan) (SNL/NM December 1992). This section documents activities at the CWL for the reporting period from August through October 2010. No groundwater sampling events occurred at the CWL during this reporting period.

1.0 Introduction

All Voluntary Corrective Measure (VCM) activities for the CWL have been completed. The CWL Landfill Excavation (LE) VCM Final Report was submitted to the New Mexico Environment Department (NMED) in April 2003 (SNL/NM April 2003) and approved by the NMED in December 2003 (Moats December 2003). The Site Operational Boundary Closure Addendum to the LE VCM Final Report was submitted to the NMED in August 2005 (SNL/NM August 2005) and approved by the NMED on October 25, 2005 (Bearzi October 2005). With the submittal of the Waste Management Addendum to the LE VCM Final Report in the February 22, 2006 CWL Quarterly Closure Progress Report (SNL/NM February 2006) as Appendix B, all LE VCM regulatory deliverables have been submitted. With the completion of the VCMs, technical meetings will be held on an as-needed basis. The public will continue to be informed of significant events through the Environmental Restoration Project public meeting process.

Installation of the cover as an interim measure was requested in April 2004 (Wagner April 2004) and approved with conditions in September 2004 (Kieling September 2004). The cover was completed in September 2005 in accordance with the conditions of approval. All field activities have been completed at the CWL, including the installation of new groundwater monitoring wells CWL-BW5, CWL-MW9, CWL-MW10, and CWL-MW11 and decommissioning of groundwater monitoring wells CWL-BW4A, CWL-MW4, MW5U/L, and MW6U/L. Long-term monitoring under the NMED-approved CWL Post-Closure Care Permit (NMED October 2009a) will commence after NMED approval of final closure.

2.0 **Status of Closure**

The Final Toxic Substances Control Act (TSCA) Closure Report documents the completion of all closure activities specified in the “Risk-Based Approval Request, 40 CFR [Code of Federal Regulations] 761.61(c) Risk-Based Method for Management of PCB [Polychlorinated Biphenyl] Materials” (SNL/NM October 2001), approved by the U.S. Environmental Protection Agency (EPA) in June 2002 (Cooke June 2002). The Final TSCA Closure Report was submitted to the EPA and NMED on November 2, 2006 (SNL/NM November 2006).

The Final Resource Conservation and Recovery Act (RCRA) Closure Report documenting closure in accordance with all CWL Closure Plan requirements was submitted to the NMED on September 27, 2010. The required 40 CFR 265.116 (survey plat) and 40 CFR 265.119 (notation on property deed) notices were submitted to the Bernalillo County Zoning Commission and County Clerk, respectively, as well as the NMED in early September 2010 in accordance with the Closure Plan. These notices were also included as an appendix in the Final RCRA Closure Report (SNL/NM September 2010), which documents the backfilling of the former CWL, installation of the at-grade evapotranspirative (ET) cover, ET cover revegetation activities, installation of the four new groundwater monitoring wells, and the final end-state conditions and cumulative risk assessment.

Fieldwork associated with the installation of the four new groundwater monitoring wells (CWL-BW5, CWL-MW9, CWL-MW10, and CWL-MW11) and decommissioning of groundwater monitoring wells CWL-BW4A, CWL-MW4, CWL-MW5U/L, and CWL-MW6U/L was completed in August 2010 with the final land survey of the new wells. The Well Installation and Decommissioning Report was submitted as an appendix of the Final RCRA Closure Report, in accordance with the requirements of the CWL Closure Plan.

All required closure actions have now been completed in accordance with the CWL Closure Plan and the 2008 through 2009 negotiations that covered the CWL Closure Plan Amendment As Changed (revisions to Chapter 12 and to Appendix G), the CWL Post-Closure Care Permit, and the CWL Corrective Measures Study Report and Final Remedy. These negotiations were completed on October 15, 2009, and documented in the settlement agreement and Final Order In the Matter of Application for a Post-Closure Care Hazardous Waste Permit for the Chemical Waste Landfill, Sandia National Laboratories No. NM5890110518 (Final Order) (NMED October 2009a), which also included the final Post-Closure Care Permit. The NMED issued a “Notice of Approval, Final Remedy and Closure Plan Amendment, Chemical Waste Landfill” on October 16, 2009 (NMED October 2009b). The October 16, 2009, NMED approval included the final versions of two revisions

to the Closure Plan that were part of the Closure Plan Amendment as Changed; Chapter 12; and Appendix G, Revision 4, Section 1.0.

3.0 **Groundwater and Soil-Gas Monitoring**

No CWL groundwater monitoring activities were performed for the reporting period from August through October 2010.

No soil-gas sampling was performed at the CWL during this reporting period. Soil-gas sampling is not required under the Closure Plan but will be a requirement under the CWL Post-Closure Care Permit (NMED October 2009a).

4.0 **Projected Activities for the Upcoming Quarter**

The CWL ET Cover maintenance will be performed in November to remove undesired annual plant species, including Russian thistle and four-wing saltbush.

After NMED approval of the Final RCRA Closure Report, the Closure Plan will no longer be in effect, and the CWL Post-Closure Care Permit (NMED October 2009a) will become the sole source of operating conditions.

5.0 **References**

Bearzi, J.P. (New Mexico Environment Department), October 2005. Letter to P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Notice of Approval: Chemical Waste Landfill Site Operational Boundary Closure Addendum to the Landfill Excavation Corrective Measure Final Report; August 2005, Sandia National Laboratories, NM5890110518, HWB-SNL-05-021." October 25, 2005.

Cooke, G. (U.S. Environmental Protection Agency Region 6), June 2002. Letter to M.J. Zamorski (U.S. Department of Energy), "Approval of the TSCA Risk-Based Approach Request for the CWL." June 26, 2002.

Kieling, J.E. (New Mexico Environment Department), September 2004. Letter to P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Approval With Conditions of the Landfill Cover Interim Measure at the Chemical Waste Landfill, Sandia National Laboratories, NM5890110518, HWB-SNL-03-013." September 22, 2004.

Moats, W.P. (New Mexico Environment Department), December 2003. Letter to K.L. Boardman (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), “Final Approval, Landfill Excavation Voluntary Corrective Measures, Final Report, April 2003, Sandia National Laboratories, NM5890110518 HWB-SNL-03-012.” December 16, 2003.

New Mexico Environment Department (NMED), October 2009a. “Final Permit Decision and Response to Comments, Post-Closure Care Permit for the Chemical Waste Landfill, Sandia National Laboratories, EPA ID# NM5890110518, SNL-06-002.” New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico, October 15, 2009.

New Mexico Environment Department (NMED), October 2009b. “Notice of Approval, Final Remedy and Closure Plan Amendment, Chemical Waste Landfill, Sandia National Laboratories, EPA# NM5890110518, NMED-HWB-05-016.” New Mexico Environment Department Hazardous Waste Bureau, Santa Fe, New Mexico, October 16, 2009.

NMED, see New Mexico Environment Department.

Sandia National Laboratories/New Mexico (SNL/NM), December 1992. “The Chemical Waste Landfill Final Closure Plan and Postclosure Permit Application,” Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), October 2001. “Risk-Based Approval Request, 40 CFR 761.61 (c) Risk-Based Method for Management of PCB Materials,” Chemical Waste Landfill Remediation and Corrective Action Management Unit, Sandia National Laboratories, Albuquerque, New Mexico. October 24, 2001.

Sandia National Laboratories/New Mexico (SNL/NM), April 2003. “Chemical Waste Landfill – Landfill Excavation Voluntary Corrective Measure – Final Report,” Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), August 2005. “Chemical Waste Landfill Site Operational Boundary Closure Addendum to the Landfill Excavation Voluntary Corrective Measure Final Report,” Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), February 2006. “Chemical Waste Landfill Quarterly Closure Progress Report,” Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), November 2006. “Chemical Waste Landfill Toxic Substances Control Act Final Report.” Sandia National Laboratories, Albuquerque, New Mexico. November 2, 2006.

Sandia National Laboratories/New Mexico (SNL/NM), September 2010. “Chemical Waste Landfill Final Resource Conservation and Recovery Act Closure Report,” Sandia National Laboratories, Albuquerque, New Mexico. September 27, 2010.

SNL/NM, see Sandia National Laboratories/New Mexico.

Wagner, P. (U.S. Department of Energy), April 2004. Letter to J. Kieling (New Mexico Environment Department) requesting approval of “an interim measure (cover) at the Chemical Waste Landfill.” April 19, 2004.

SECTION III

PERCHLORATE SCREENING QUARTERLY MONITORING REPORT, THIRD QUARTER CALENDAR YEAR 2010 (JULY, AUGUST, AND SEPTEMBER 2010)

EXECUTIVE SUMMARY

Section IV.B of the Compliance Order on Consent (the Order), between the New Mexico Environment Department (NMED), the U.S. Department of Energy (DOE), and Sandia Corporation (Sandia) for Sandia National Laboratories, New Mexico, effective on April 29, 2004, stipulates that a select group of groundwater monitoring wells be sampled for perchlorate at SNL/NM (NMED April 2004). This report summarizes the perchlorate monitoring completed during the third quarter of Calendar Year (CY) 2010 (July, August, and September 2010) in response to the requirements of the Order. During the third quarter of CY 2010, groundwater samples were collected from CYN-MW6, CYN-MW9, CYN-MW10, CYN-MW11, CYN-MW12, and TA1-W-03.

CYN-MW6 is one of the 11 wells in the Burn Site Groundwater (BSG) monitoring well network and has been sampled for perchlorate 15 times. CYN-MW9, CYN-MW10, CYN-MW11, and CYN-MW12 are recently installed BSG monitoring wells that were sampled for the first time. TA1-W-03 is located in the Tijeras Arroyo Groundwater Investigation study area and was required to be sampled for perchlorate based on NMED requirements (NMED April 2009). This well was sampled for the third time during this reporting period.

All samples were submitted to GEL Laboratories, LLC for perchlorate analysis using U.S. Environmental Protection Agency Method 314.0 (EPA November 1999). No perchlorate was detected in the environmental samples from CYN-MW9, CYN-MW10, CYN-MW11, CYN-MW12, or TA1-W-03 at a method detection limit of 4 micrograms per liter. In September 2010, the environmental sample from CYN-MW6 revealed perchlorate at a concentration of 6.14 µg/L. The source for the perchlorate in the groundwater at CYN-MW6 is unknown, although a natural source may be present.

Because perchlorate concentrations in monitoring well CYN-MW6 have exceeded the screening level since March 2006, DOE/Sandia had initiated a negotiation process with the NMED (SNL/NM March 2007) to determine the frequency of continued monitoring. In November 2008, DOE/Sandia received approval from the NMED to discontinue quarterly monitoring and proceed with semiannual sampling for perchlorate at CYN-MW6 (NMED November 2008).

SECTION III
TABLE OF CONTENTS

PERCHLORATE SCREENING QUARTERLY MONITORING REPORT, THIRD QUARTER
CALENDAR YEAR 2010 (JULY, AUGUST, AND SEPTEMBER 2010).....3

1.0 Introduction3

2.0 Scope of Activities4

3.0 Regulatory Criteria8

4.0 Monitoring Results10

5.0 Summary and Conclusions17

6.0 References18

LIST OF FIGURES

Figure	Title	
1	Sandia National Laboratories, New Mexico Current Perchlorate-Screening Monitoring-Well Network (July, August, and September 2010).....	5
2	Perchlorate Concentrations (µg/L) over Time in CYN-MW6	14
3	Groundwater Elevations over Time at CYN-MW6	15

LIST OF TABLES

Table	Title	
1	Current Perchlorate-Screening Monitoring Well Network, Third Quarter, CY 2010 (July, August, and September 2010).....	6
2	Sample Details for Third Quarter, CY 2010 Perchlorate Sampling.....	8
3	Summary of Perchlorate Screening Analytical Results for the Current Monitoring Well Network as of Third Quarter, CY 2010.....	11
4	Perchlorate Screening Groundwater Monitoring Field Water Quality Measurements, Third Quarter, CY 2010.....	16

APPENDICES

Appendix A. Analytical Laboratory Certificates of Analysis for the Perchlorate Data

Appendix B. Data Validation Sample Findings Summary Sheets for the Perchlorate Data

SECTION III

PERCHLORATE SCREENING QUARTERLY MONITORING REPORT, THIRD QUARTER CALENDAR YEAR 2010 (JULY, AUGUST, AND SEPTEMBER 2010)

1.0 Introduction

Section IV.B of the Compliance Order on Consent (the Order), between the New Mexico Environment Department (NMED), the U.S. Department of Energy (DOE), and Sandia Corporation (Sandia) for Sandia National Laboratories, New Mexico (SNL/NM), effective on April 29, 2004, stipulates that a select group of groundwater monitoring wells be sampled for perchlorate at SNL/NM (NMED April 2004). This report summarizes the perchlorate screening monitoring completed during the third quarter of Calendar Year (CY) 2010 (July, August, and September 2010) in response to the requirements of the Order. The outline of this report is based on the required elements of a “Periodic Monitoring Report” described in Section X.D. of the Order (NMED April 2004).

In November 2005, DOE/Sandia submitted a letter report on the status of perchlorate screening in groundwater at SNL/NM monitoring wells (SNL/NM November 2005). The purpose of the letter report was to summarize previous correspondence and sampling results and to outline proposed future work to comply with NMED requirements for perchlorate screening in groundwater. As specified in the letter report, quarterly reports will be submitted for wells active in the perchlorate-screening monitoring well network.

Based on the NMED response (NMED January 2006), DOE/Sandia will submit each quarterly report within 90 days following the quarter that the data represent. In November 2008, DOE/Sandia received approval from the NMED to proceed to semiannual reporting (NMED November 2008); however, upon further consideration, the NMED once more required quarterly reporting (NMED April 2009). This did not alter the previously negotiated frequency for CYN-MW6, an existing Burn Site Groundwater (BSG) study area well that has been under the sampling and reporting requirements of the Order since the well was installed, and which will remain at a semiannual frequency for sampling and reporting.

This report is the nineteenth to be submitted since the November 2005 letter report; the previous reports were submitted for Fourth Quarter of CY 2005 through the Second Quarter of CY 2010 (SNL/NM February 2006, June 2006, September 2006, December 2006, March 2007, June 2007, September 2007, December 2007, March 2008, June 2008, September 2008, December 2008, June 2009, September 2009, December 2009, March 2010, June 2010a, and September 2010).

Groundwater sampling for well CYN-MW6 has now been done 15 times; Tijeras Arroyo Groundwater (TAG) well TA1-W-03 has been sampled for three consecutive quarters; and BSG wells CYN-MW9, CYN-MW10, CYN-MW11, and CYN-MW12 have been sampled once (Figure 1). The Order requires that new wells be sampled for perchlorate for a minimum of four quarters (NMED April 2004). Reporting will continue as long as groundwater monitoring wells remain active in the perchlorate-screening monitoring well network unless negotiated otherwise with the NMED.

2.0 **Scope of Activities**

This report provides perchlorate screening results for the third quarter of CY 2010 (July, August, and September 2010) for the wells currently active in the perchlorate-screening program as shown in Figure 1 and listed in Table 1. It should be noted that CYN-MW6 is currently being sampled on a semiannual basis, and all other wells are being sampled quarterly. In accordance with the requirements of Table XI-1 of the Order, a well with four consecutive quarters of nondetects (NDs) at the screening level/method detection limit (MDL) of 4 micrograms per liter ($\mu\text{g/L}$) is removed from the requirement of continued monitoring for perchlorate. Data from numerous wells identified in the Order have satisfied this requirement; therefore, these wells have been removed from the perchlorate-screening program. Data for these wells were provided in previous reports and are not discussed in this current report. Wells discussed in previous perchlorate-screening reports include the following: CYN-MW1D, CYN-MW5, CYN-MW7, CYN-MW8, LWDS-MW1, MRN-2, MRN-3D, MWL-BW1, MWL-BW2, MWL-MW1, MWL-MW7, MWL-MW8, MWL-MW9, NWT A3-MW2, SWTA3-MW4, TA1-W-06, TA1-W-08, TA2-W-01, and TA2-W-27.

DOE/Sandia performed groundwater sampling at six wells on the dates listed in Table 1. CYN-MW6, CYN-MW9, CYN-MW10, CYN-MW11, and CYN-MW12 were installed after the Order was finalized and were therefore required to be sampled for perchlorate as a “new” well; sampling at TA1-W-03 was specifically required by the NMED’s April 2009 letter (NMED April 2009). Groundwater sampling activities were conducted in conformance with procedures outlined in the investigation-specific sampling and analysis plans (SAPs) entitled:

- “Tijeras Arroyo Groundwater Investigation, Mini-SAP for FY10, 4th Quarter Sampling, July/August 2010” (SNL/NM June 2010b), and
- “Burn Site Groundwater Monitoring, Mini-SAP for Fourth Quarter, Fiscal Year 2010” (SNL/NM August 2010).

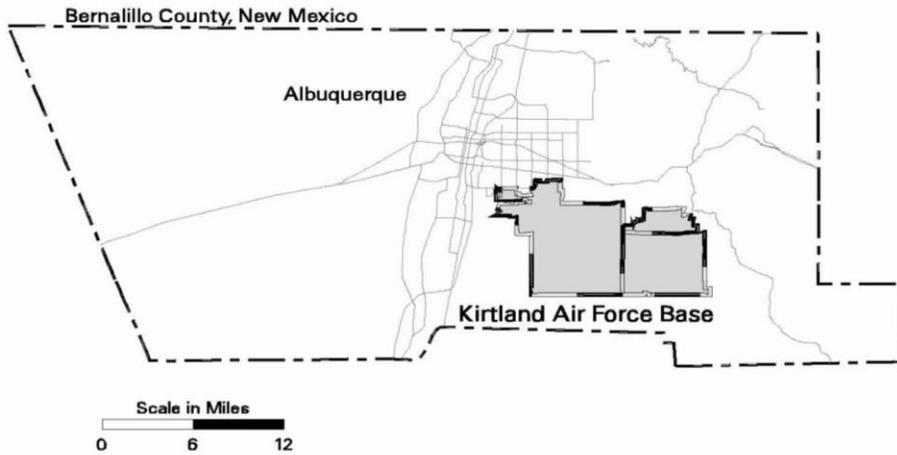
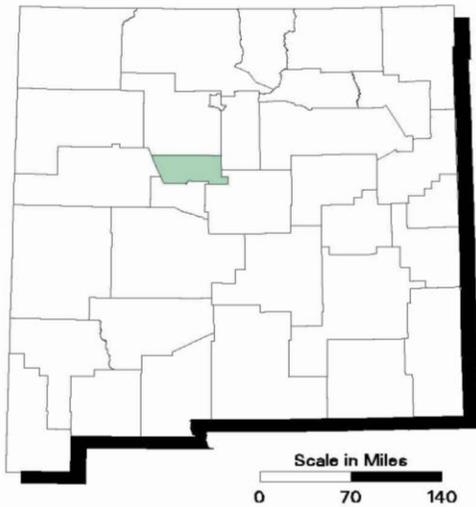


Figure 1
Sandia National Laboratories
New Mexico
Current Perchlorate-Screening
Monitoring-Well Network
(July, August, and September 2010)

Bernalillo County, New Mexico



Sandia National Laboratories
(Shaded Areas)

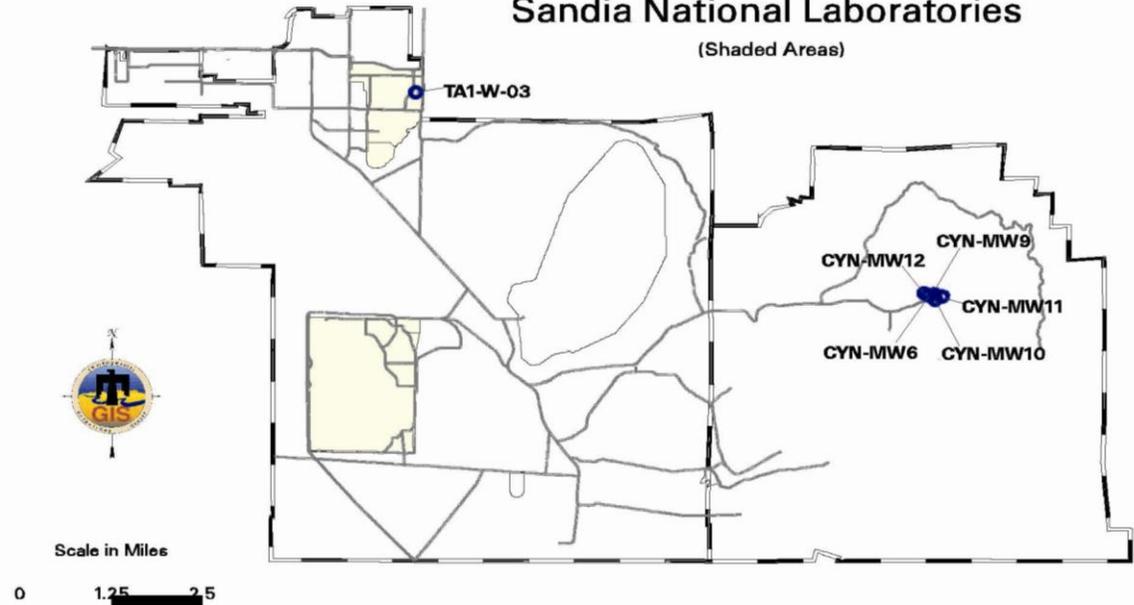


Table 1
Current Perchlorate-Screening Monitoring Well Network
Third Quarter, CY 2010
(July, August, and September 2010)

Well	Date Sampled	Number of Consecutive Sampling Events ^a	Remaining Number of Sampling Events ^b	Sampling Equipment
CYN-MW6	20-Sep-2010	15	TBD ^c	Bennett™ Pump
CYN-MW9	28-Sep-2010	1	3	Bennett™ Pump
CYN-MW10	27-Sep-2010	1	3	Bennett™ Pump
CYN-MW11	29-Sep-2010	1	3	Bennett™ Pump
CYN-MW12	23-Sep-2010	1	3	Bennett™ Pump
TA1-W-03	22-Jul-2010	3	1	Bennett™ Pump

Notes

^a Includes this sampling event.

^b Per the requirements of Table XI-1 of the Order (NMED April 2004), a well will be removed from the perchlorate-screening monitoring well network after four quarters unless perchlorate is detected above the screening level/MDL of 4 µg/L. If perchlorate is detected above the screening level/MDL in a specific well, monitoring will continue at that well at a frequency negotiated with the NMED.

^c TBD = To be determined. This well has been sampled for the required initial four quarters. Because perchlorate concentrations in this well have exceeded the screening level, DOE/Sandia and the NMED have agreed to further characterization requirements in the BSG study area (NMED February 2010).

As described in the Mini-SAPs, groundwater sampling was performed in conformance with current SNL/NM Environmental Management, Long-Term Environmental Stewardship (LTES) Project field operating procedures (FOPs). A portable Bennett™ groundwater sampling system was used to collect the groundwater samples. The sampling pump and tubing bundle were decontaminated prior to installation into monitoring wells in accordance with procedures described in FOP 05-03, “LTES Groundwater Sampling Equipment Decontamination” (SNL/NM August 2007a). Wells CYN-MW9, CYN-MW10, CYN-MW11, CYN-MW12, and TA1-W-03 were purged a minimum of one saturated screen volume before sampling in conformance with FOP 05-01, “LTES Groundwater Monitoring Well Sampling and Field Analytical Measurements” (SNL/NM August 2007b). Well CYN-MW6 is a low-yield monitoring well and was purged dry and allowed to recover before sampling to ensure a representative groundwater sample.

Field water-quality measurements for turbidity, potential of hydrogen (pH), temperature, specific conductance (SC), oxidation-reduction potential (ORP), and dissolved oxygen (DO) were obtained from the well prior to collecting groundwater samples. Groundwater temperature, SC, ORP, DO, and pH were measured with a YSI™ Model 620 Water Quality Meter. Turbidity was measured with a HACH™ Model 2100P turbidity meter. Purging continued until four stable measurements for turbidity, pH, temperature, and SC were obtained. Groundwater stability is considered acceptable when:

- Turbidity measurements are within 10 percent, or less than 5 nephelometric turbidity units (NTUs)
- pH is within 0.1 units
- Temperature is within 1.0 degrees Celsius
- SC is within 5 percent

Field Measurement Logs documenting details of well purging and water quality measurements have been submitted to the SNL/NM Customer Funded Records Center.

The groundwater samples were submitted to GEL Laboratories, LLC (GEL) for chemical analysis for perchlorate using U.S. Environmental Protection Agency Method 314.0 (EPA November 1999). The sample identification, Analysis Request/Chain-of-Custody (AR/COC) form number, and the associated groundwater investigation are provided in Table 2. The analytical report from GEL, including certificates of analyses (COA) (Appendix A), analytical methods, MDLs, practical quantitation limits, dates of analyses, results of quality control (QC) analyses, and data validation findings (Appendix B) have been submitted to the SNL/NM Customer Funded Records Center.

Table 2
Sample Details for Third Quarter, CY 2010 Perchlorate Sampling

Well	Sample Identification	AR/COC Number	Associated Groundwater Investigation
CYN-MW6	089659-020	613279	BSG
CYN-MW9	089672-020 089673-020	613285	BSG
CYN-MW10	089668-020	613283	BSG
CYN-MW11	089675-020	613286	BSG
CYN-MW12	089665-020	613282	BSG
TA1-W-03	089435-020 089436-020	613171	TAG

Notes

AR/COC = Analysis request/chain of custody.
BSG = Burn Site Groundwater.
TAG = Tijeras Arroyo Groundwater.

3.0 **Regulatory Criteria**

In a given monitoring well, four consecutive NDs using the screening level/MDL of 4 µg/L are considered by the NMED to be evidence of the absence of perchlorate, such that additional monitoring for perchlorate in that well is not required. If perchlorate is detected using the screening level/MDL of 4 µg/L in a specific well, then monitoring will continue at that well at a frequency negotiated with the NMED. The Order (NMED April 2004) also requires that for detections equal to or greater than 4 µg/L, the DOE/Sandia will evaluate the nature and extent of perchlorate contamination, based on a screening level/MDL of 4 µg/L, and requires that the results of this evaluation be incorporated into a Corrective Measures Evaluation (CME). Section VII.C of the Order clarifies that the CME process will be initiated where there was a release to the environment and where corrective measures are necessary to protect human health or the environment.

In March 2007, DOE/Sandia received a letter from the NMED stating the requirement that DOE/Sandia “determine the nature and extent of the contamination and complete a Corrective Measures Evaluation for the perchlorate-impacted groundwater in the vicinity of CYN-MW6” (NMED March 2007). As this was based solely on the four quarters of monitoring results, DOE/Sandia submitted a letter to the NMED in April 2007 (SNL/NM April 2007) that recommended further characterization through continued quarterly monitoring of CYN-MW6 for four additional quarters, ending in December 2007, to ensure

appropriate characterization of this well. In January 2008, DOE/Sandia requested a meeting with the NMED to discuss the need for continued monitoring or additional characterization work, and potentially, a CME.

In preparation for discussing the perchlorate-impacted groundwater in the vicinity of CYN-MW6 and to show that the requirement “to determine the nature and extent of contamination” (NMED March 2007) has been met, DOE/Sandia provided supporting information to the NMED (SNL/NM March 2008). Perchlorate in surface soils has been characterized at Solid Waste Management Units in the study area (SNL/NM June 2006; SNL/NM March 2008–Appendix C). Based upon these data, DOE/Sandia consider that the nature and extent of perchlorate in groundwater at the Burn Site has been sufficiently characterized. Since 2004, four other monitoring wells in the vicinity of the Burn Site have been sampled and analyzed for perchlorate, including CYN-MW1D, CYN-MW5, CYN-MW7, and CYN-MW8. All of these wells were sampled for four quarters and all results were ND for perchlorate (SNL/NM March 2008–Appendix D).

According to the requirements of Section VI.K.1.b of the Order (NMED April 2004), a human health risk assessment has been performed to evaluate the potential for adverse health effects from the concentrations of perchlorate detected in CYN-MW6 groundwater (SNL/NM March 2008–Appendix E). The maximum concentration of perchlorate in CYN-MW6 to date (8.93 µg/L) was used in the assessment. The calculated hazard quotient (HQ) of 0.35 is less than the NMED target level of a hazard index (HI) (the sum of all HQs) of 1.0 (NMED June 2006).

Because perchlorate concentrations in monitoring well CYN-MW6 have exceeded the screening level, DOE/Sandia initiated a negotiation process with the NMED (SNL/NM March 2007) to determine the frequency of continued monitoring. In November 2008, DOE/Sandia received approval from the NMED to proceed with semiannual monitoring of perchlorate in CYN-MW6 and proceed with semiannual reporting of all perchlorate results (NMED November 2008). Upon further consideration, the NMED once more required that DOE/Sandia resume quarterly reporting of perchlorate results with the exception of CYN-MW6 (NMED April 2009).

In April 2009, DOE/Sandia received a letter from the NMED requiring DOE/Sandia to characterize the nature and extent of the perchlorate contamination in soil and groundwater in the BSG study area (NMED April 2009). A characterization work plan was prepared and submitted to the NMED (SNL/NM November 2009), approved by the NMED (NMED February 2010), and implemented in July 2010. In the April 2009 letter, the NMED had also requested that DOE/Sandia monitor perchlorate concentrations for a minimum of four quarters at several TAG and Technical Area V monitoring wells, including TA1-W-03 (NMED April 2009).

4.0 **Monitoring Results**

Table 3 summarizes current and historical perchlorate results for wells currently in the perchlorate-screening monitoring network. The analytical laboratory COA for the third quarter of CY 2010 perchlorate data is included as Appendix A. Perchlorate was not detected above the screening level in samples from CYN-MW9, CYN-MW10, CYN-MW11, and CYN-MW12. Consistent with historical analytical results, perchlorate was not detected above the screening level in the sample from TA1-W-03. Also consistent with historical analytical results, perchlorate was detected above the screening level/MDL in the sample from CYN-MW6. As shown in Figure 2, the concentration of perchlorate detected in the sample collected from CYN-MW6 in September 2010 (6.14 µg/L) is consistent with the average concentration found over the life of the well. The hydrograph of CYN-MW6 (Figure 3) shows that the water table is rapidly declining in this well.

Table 4 summarizes field water quality measurements collected immediately before the analytical sample was collected. Field water quality measurements include turbidity, pH, temperature, SC, ORP, and DO.

The analytical data were reviewed and qualified in accordance with Administrative Operating Procedure 00-03 Revision 2, "Data Validation Procedure for Chemical and Radiochemical Data" (SNL/NM July 2007). No problems were identified with the analytical data that resulted in qualification of the data as unusable. The data are acceptable, and reported QC measures are adequate. The data validation sample findings summary sheets for the perchlorate data are included as Appendix B.

No variances or nonconformances in field activities or field conditions from requirements in the groundwater monitoring mini-SAPs (SNL/NM June 2010b and August 2010) were identified during the third quarter of CY 2010 sampling activities.

Table 3
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring Well Network as of Third Quarter, CY 2010

Well ID	Sample Date	ARCOG No.	Sample No.	Perchlorate Result ^a (µg/L)	MDL ^b (µg/L)	PQL ^c (µg/L)	MCL ^d (µg/L)	Laboratory Qualifier ^e	Validation Qualifier ^f	Analytical Method ^g	Comments
CYN-MW6	23-Mar-06	609578	075985-020	6.92	4.0	12	NE	J		EPA 314.0	
			075986-020	7.44	4.0	12	NE	J		EPA 314.0	Duplicate sample
			075985-R20	6.39	0.50	2.0	NE	Hh	HT, J	EPA 6850M	Verification/Re-analysis
			075986-R20	6.48	0.50	2.0	NE	Hh	HT, J	EPA 6850M	Verification/Re-analysis
	22-Jun-06	609929	078687-020	6.63	4.0	12	NE	J		EPA 314.0	
			078688-020	6.45	4.0	12	NE	J		EPA 314.0	Duplicate sample
			078687-021	6.99	1.0	4.0	NE			EPA 6850M	Verification
			078688-021	6.92	1.0	4.0	NE			EPA 6850M	Verification/Duplicate Sample
	20-Sep-06	610652	081626-020	7.52	4.0	12	NE	J		EPA 314.0	
			081626-R20	6.96	1.0	4.0	NE		P2	EPA 6850M	Verification/Re-analysis
	15-Dec-06	611057	083858-020	8.46	4.0	12	NE	J		EPA 314.0	
			083859-020	8.93	4.0	12	NE	J		EPA 314.0	Duplicate sample
	14-Mar-07	611200	084237-020	8.12	4.0	12	NE	J		EPA 314.0	
	27-Jun-07	611399	084833-020	6.57	4.0	12	NE	J	J-, X1	EPA 314.0	
			084833-R20	5.94	0.5	2.0	NE			EPA 6850M	Verification/Re-analysis
	12-Sep-07	611581	085249-020	7.74	4.0	12	NE	J		EPA 314.0	
			085249-R20	6.46	0.5	2.0	NE	Hh	J	EPA 6850M	Verification/Re-analysis
	18-Dec-07	611668	085446-020	6.20	4.0	12	NE	J		EPA 314.0	
			085447-020	6.56	4.0	12	NE	J		EPA 314.0	Duplicate sample
	10-Mar-08	611749	085661-020	7.25	4.0	12	NE	J		EPA 314.0	
23-Jun-08	611912	086280-020	6.67	4.0	12	NE	J		EPA 314.0		
17-Sep-08	612004	086782-020	6.85	4.0	12	NE	J		EPA 314.0		
02-Mar-09	612120	087047-020	7.24	4.0	12	NE	J		EPA 314.0		
30-Sep-09	612392	087734-020	4.12	4.0	12	NE	J	J-	EPA 314.0		
		087735-020	4.71	4.0	12	NE	J	J-	EPA 314.0	Duplicate sample	
03-Mar-10	612580	088180-020	4.59	4.0	12	NE	J		EPA 314.0		
20-Sep-10	613279	089659-020	6.14	4.0	12	NE	J		EPA 314.0		

Refer to notes at the bottom of table.

Table 3 (continued)
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring Well Network as of Third Quarter, CY 2010

Well ID	Sample Date	ARCO No.	Sample No.	Perchlorate Result ^a (µg/L)	MDL ^b (µg/L)	PQL ^c (µg/L)	MCL ^d (µg/L)	Laboratory Qualifier ^e	Validation Qualifier ^f	Analytical Method ^g	Comments
CYN-MW9	28-Sep-10	613285	089672-020	ND	4.0	12	NE	U		EPA 314.0	
			089673-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
CYN-MW10	27-Sep-10	613283	089668-020	ND	4.0	12	NE	U		EPA 314.0	
CYN-MW11	29-Sep-10	613286	089675-020	ND	4.0	12	NE	U		EPA 314.0	
CYN-MW12	23-Sep-10	613282	089665-020	ND	4.0	12	NE	U		EPA 314.0	
TA1-W-03	26-Feb-10	612604	088220-020	ND	4.0	12	NE	U		EPA 314.0	
	03-May-10	612995	088976-020	ND	4.0	12	NE	U		EPA 314.0	
	22-Jul-10	613171	089435-020	ND	4.0	12	NE	U		EPA 314.0	
			089436-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample

Notes

^aResult

Values in **bold** exceed the screening level/MDL.
 ND = Not detected (at method detection limit).
 µg/L = Micrograms per liter.

^bMDL

Method detection limit. The minimum concentration that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

^cPQL

Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by the indicated method under routine laboratory operating conditions.

^dMCL

Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations [40 CFR 141.11(b)], and subsequent amendments or the New Mexico Environmental Improvement Board in Title 20, Chapter 7, Part 1 of the New Mexico Administrative Code (20.7.1 NMAC).
 NE = Not established.

^eLaboratory Qualifier

H = Analytical holding time was exceeded.
 h = Prep holding time was exceeded.
 J = Amount detected is below the practical quantitation limit.
 U = Analyte is absent or below the method detection limit.

Table 3 (concluded)
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring Well Network as of Third Quarter, CY 2010

Notes (continued)

⁶Validation Qualifier

If cell is blank, then all quality control samples meet acceptance criteria with respect to submitted samples and no qualifier was assigned.

HT = The holding time was exceeded for the associated sample analysis.

J = The associated value is an estimated quantity.

J- = The associated value is an estimated quantity with a suspected negative bias.

P2 = Insufficient quality control data to determine laboratory precision.

X1 = General data quality is suspect.

⁹Analytical Method

EPA 314.0: U.S. Environmental Protection Agency, November 1999, "Perchlorate in Drinking Water Using Ion Chromatography," EPA 815/R-00-014 (EPA November 1999).

EPA 6850M: U.S. Environmental Protection Agency, April 2005, "Perchlorate in Water, Soils, and Solids Using High Performance Liquid Chromatography/Electrospray Ionization/Mass Spectrometry (HPLC/ESI/MS)," draft, Method 6850 (EPA April 2005).

Figure 2. Perchlorate Concentrations ($\mu\text{g/L}$) over Time in CYN-MW6

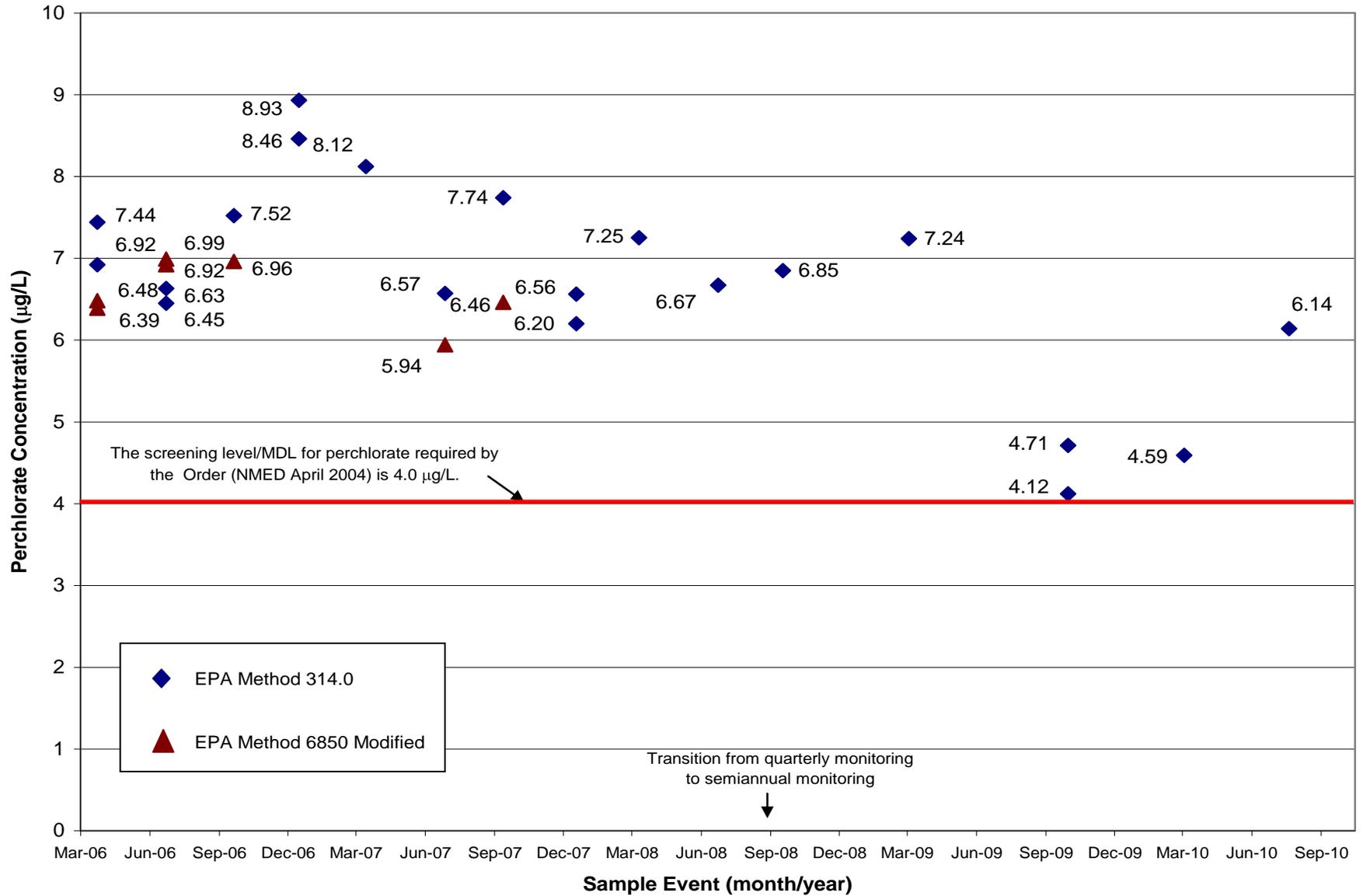


Figure 3. Groundwater Elevations over Time at CYN-MW6

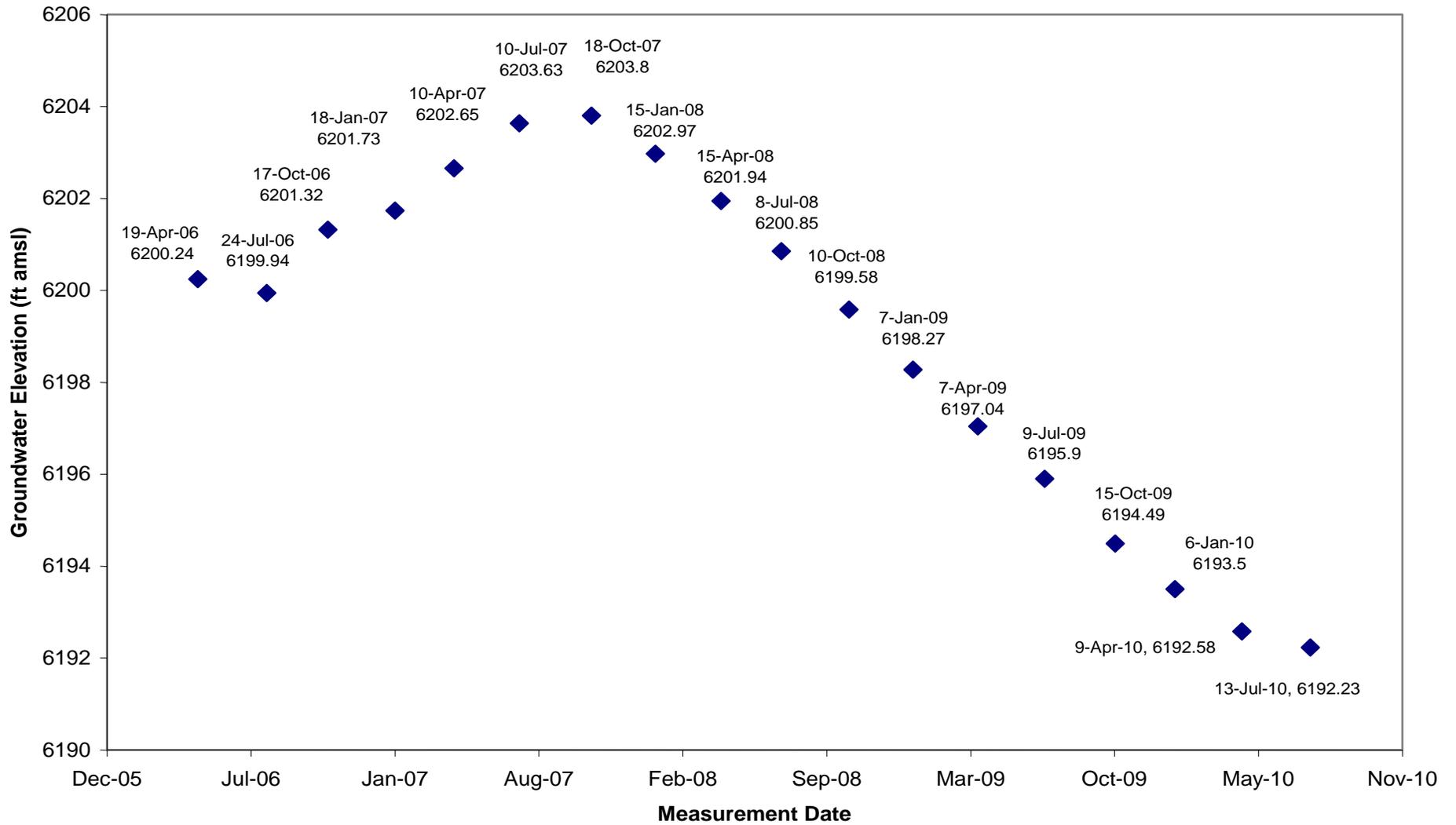


Table 4
Perchlorate Screening Groundwater Monitoring
Field Water Quality Measurements^a, Third Quarter, CY 2010

Well ID	Sample Date	Temperature (°C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (% Sat)	Dissolved Oxygen (mg/L)
CYN-MW6	20-Sep-10	18.53	1059	103.8	7.04	0.37	20.6	1.92
CYN-MW9	28-Sep-10	18.93	1089	197.3	7.03	0.45	48.6	4.50
CYN-MW10	27-Sep-10	19.86	905	145.5	7.33	0.40	71.3	6.49
CYN-MW11	29-Sep-10	21.51	992	58.9	7.27	3.73	5.5	0.51
CYN-MW12	23-Sep-10	18.47	1045	50.8	7.10	0.90	5.4	0.51
TA1-W-03	22-Jul-10	19.53	1588	180.6	7.58	0.21	88.1	8.04

Notes

^aField measurements obtained immediately before the groundwater sample was collected.

°C = Degrees Celsius.

% Sat = Percent saturation.

µmho/cm = Micromhos per centimeter.

mg/L = Milligrams per liter.

mV = Millivolts.

NTU = Nephelometric turbidity units.

pH = Potential of hydrogen (negative logarithm of the hydrogen ion concentration).

5.0 Summary and Conclusions

Based on the analytical data presented in Table 3 and in previous reports, the following statements can be made:

- No perchlorate was detected in the environmental samples from groundwater monitoring wells CYN-MW9, CYN-MW10, CYN-MW11, CYN-MW12, and TA1-W-03 at the screening level/MDL of 4 µg/L.
- Since June 2004 (the start of sampling required by the Order), perchlorate has been detected above the screening level/MDL (4 µg/L) in samples from only one of the wells (CYN-MW6) in the perchlorate-screening monitoring well network.
- The analytical result for the sample from CYN-MW6 for the third quarter of CY 2010 sampling event (6.14 µg/L) is consistent with the average concentration reported since the inception of sampling for perchlorate at CYN-MW6 in March 2006 (Figure 2).
- A human health risk assessment has been performed to evaluate the potential for adverse health effects from the concentrations of perchlorate detected in groundwater samples from CYN-MW6 (SNL/NM March 2008). The maximum concentration of perchlorate in samples from CYN-MW6 to date (8.93 µg/L) was used in the assessment. The calculated HQ of 0.35 is less than the NMED target level of an HI (the sum of all HQs) of 1.0 (NMED June 2006).

DOE/Sandia will continue semiannual monitoring of perchlorate in CYN-MW6, and quarterly monitoring of perchlorate in CYN-MW9, CYN-MW10, CYN-MW11, CYN-MW12, and TA1-W-03.

Based on recent requirements (NMED April 2009), DOE/Sandia has prepared and submitted a work plan that describes efforts to characterize the nature and extent of the perchlorate contamination in soil and groundwater in the BSG study area. In February 2010, the NMED approved the work plan (NMED February 2010), and the activities described in the work plan were implemented during the summer of 2010, including installation of the four new BSG study area wells (CYN-MW9, CYN-MW10, CYN-MW11, and CYN-MW12).

6.0 References

EPA (see US Environmental Protection Agency).

New Mexico Environment Department (NMED), April 2004. "Compliance Order on Consent Pursuant to the New Mexico Hazardous Waste Act 74-4-10: Sandia National Laboratories Consent Order," New Mexico Environment Department, April 24, 2004.

New Mexico Environment Department (NMED), January 2006. "RE: Monitoring Groundwater for Perchlorate, Report of November 22, 2005. Sandia National Laboratories EPA ID# NM5890110518." Letter to P. Wagner (SSO/NNSA) and P. Davies (SNL/NM) from J. Bearzi. January 27, 2006.

New Mexico Environment Department (NMED), June 2006. "Technical Background Document for Development of Soil Screening Levels, Revision 4.0," New Mexico Environment Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, Santa Fe, New Mexico. (NMED 2006, 092513).

New Mexico Environment Department (NMED) March 2007. "RE: Notice of Approval: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2006 (April, May, and June) September 20, 2006. Sandia National Laboratories, EPA ID# NM5890110518. HWB-SNL-06-011" Letter to P. Wagner (SSO/NNSA) and P. Davies (SNL/NM) from J. Bearzi. March 23, 2007.

New Mexico Environment Department (NMED), November 2008. "RE: Perchlorate Issues" Personal Communication (electronic mail) to J. Cochran (SNL/NM) from S. Brandwein (NMED/HWB). November 7, 2008.

New Mexico Environment Department (NMED), April 2009. RE: Perchlorate Contamination in Groundwater, Sandia National Laboratories, EPA ID# NM5890110518." Letter to K. Davis (SSO/NNSA) and F. Nimick (SNL/NM) from J. Bearzi. April 30, 2009.

New Mexico Environment Department (NMED), February 2010. RE: Notice of Conditional Approval, Burn Site Groundwater Characterization Work Plan, November 2009, Sandia National Laboratories, EPA ID# NM5890110518, SNL-09-017." Letter to P. Wagner (SSO/NNSA) and M. Walck (SNL/NM) from J. Bearzi. February 12, 2010.

NMED, see New Mexico Environment Department.

Sandia National Laboratories, New Mexico (SNL/NM), November 2005. Letter Report to J. Bearzi (NMED), "Letter Report on the Status of Perchlorate Screening in Groundwater at Sandia Monitoring Wells," Sandia National Laboratories, New Mexico Environmental Restoration Project. November 22, 2005.

Sandia National Laboratories, New Mexico (SNL/NM), February 2006. "Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2005 (October, November, and December 2005)," Sandia National Laboratories, New Mexico Environmental Restoration Project. February 24, 2006.

Sandia National Laboratories, New Mexico (SNL/NM), June 2006. "Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2006 (January, February, and March 2006)," Sandia National Laboratories, New Mexico Environmental Restoration Project. June 7, 2006.

Sandia National Laboratories, New Mexico (SNL/NM), September 2006. "Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2006 (April, May, and June 2006)," Sandia National Laboratories, New Mexico Environmental Restoration Project. September 20, 2006.

Sandia National Laboratories, New Mexico (SNL/NM), December 2006. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar Year 2006 (July, August, and September 2006)," Environmental Restoration Project, Sandia National Laboratories, New Mexico. December 2006.

Sandia National Laboratories, New Mexico (SNL/NM), March 2007. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2006 (October, November, and December 2006)," Environmental Restoration Project, Sandia National Laboratories, New Mexico. March 27, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), April 2007. Response to March 23, 2007 NMED letter entitled "RE: Notice of Approval: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2006 (April, May, and June) September 20, 2006. Sandia National Laboratories, EPA ID# NM5890110518. HWB-SNL-06-011." Letter to J. Bearzi (NMED HWB) from P. Wagner (SSO/NNSA), Environmental Restoration Project, Sandia National Laboratories, New Mexico. April 19, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), June 2007. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2007 (January, February, and March 2007)," Environmental Restoration Project, Sandia National Laboratories, New Mexico. June 27, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), July 2007. "Data Validation Procedure for Chemical and Radiochemical Data," Administrative Operating Procedure 00-03, Revision 2, Sample Management Office, Sandia National Laboratories, New Mexico. July 16, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), August 2007a. "LTES Groundwater Sampling Equipment Decontamination," Field Operating Procedure 05-03, Revision 02, Long-Term Environmental Stewardship, Environmental Management Department, Sandia National Laboratories, New Mexico. August 16, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), August 2007b. "LTES Groundwater Monitoring Well Sampling and Field Analytical Measurements," Field Operating Procedure 05-01, Revision 02, Long-Term Environmental Stewardship, Environmental Management Department, Sandia National Laboratories, New Mexico. August 16, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), September 2007. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2007 (April, May, and June 2007),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. September 26, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), December 2007. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar Year 2007 (July, August, and September 2007),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. December 27, 2007.

Sandia National Laboratories, New Mexico (SNL/NM), March 2008. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2007 (October, November, and December 2007),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. March 26, 2008.

Sandia National Laboratories, New Mexico (SNL/NM), June 2008. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2008 (January, February, and March 2008),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. June 27, 2008.

Sandia National Laboratories, New Mexico (SNL/NM), September 2008. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2008 (April, May, and June 2008),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. September 23, 2008.

Sandia National Laboratories, New Mexico (SNL/NM), December 2008. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar Year 2008 (July, August, and September 2008),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. December 22, 2008.

Sandia National Laboratories, New Mexico (SNL/NM), June 2009. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2008 and First Quarter of Calendar Year 2009 (October 2008 through March 2009),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. June 18, 2009.

Sandia National Laboratories, New Mexico (SNL/NM), September 2009. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2009 (April 2009 through June 2009),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. September 30, 2009.

Sandia National Laboratories, New Mexico (SNL/NM), November 2009. “Burn Site Groundwater Characterization Work Plan, Installation of Groundwater Monitoring Wells CYN-MW9, CYN-MW10, CYN-MW11, Collection of Subsurface Soil Samples, November 2009”. Environmental Restoration Project, Sandia National Laboratories, New Mexico. November 23, 2009.

Sandia National Laboratories, New Mexico (SNL/NM), December 2009. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar Year 2009 (July 2009 through September 2009),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. December 21, 2009.

Sandia National Laboratories, New Mexico (SNL/NM), March 2010. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2009 (October, November, and December 2009),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. March 31, 2010.

Sandia National Laboratories, New Mexico (SNL/NM), June 2010a. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2010 (January, February, and March 2010),” Environmental Restoration Project, Sandia National Laboratories, New Mexico. June 24, 2010.

Sandia National Laboratories, New Mexico (SNL/NM), June 2010b. “Tijeras Arroyo Groundwater Investigation, Mini-Sampling and Analysis Plan (SAP) for FY10, 4th Quarter Sampling, July/August 2010,” Environmental Restoration Project, Sandia National Laboratories, New Mexico. June 14, 2010.

Sandia National Laboratories, New Mexico (SNL/NM), August 2010. “Burn Site Groundwater Monitoring, Mini-Sampling and Analysis Plan (SAP) for Fourth Quarter, Fiscal Year 2010,” Sandia National Laboratories, New Mexico Environmental Restoration Project. August 23, 2010.

Sandia National Laboratories, New Mexico (SNL/NM), September 2010. “Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2010 (April, May, and June 2010).” Sandia National Laboratories, New Mexico Environmental Restoration Project. September 21, 2010.

SNL/NM, see Sandia National Laboratories/New Mexico.

U.S. Environmental Protection Agency (EPA), November 1999, “Perchlorate in Drinking Water Using Ion Chromatography,” EPA 815/R-00-014. November 1999.

U.S. Environmental Protection Agency (EPA), April 2005, “Perchlorate in Water, Soils, and Solids Using High Performance Liquid Chromatography/Electrospray Ionization/Mass Spectrometry (HPLC/ESI/MS),” Draft, Method 6850.

Appendix A

Analytical Laboratory Certificates of Analysis for the Perchlorate Data

ORLG/MAZ

CONTRACT LABORATORY ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab	Batch No. <i>N/A</i>	AR/COC	613171
Dept. No./Mail Stop:	4133/1126	Waste Characterization	
Project/Task Manager:	Don Schofield	-Send preliminary/copy report to:	
Project Name:	TAG-GWMM	Released by GOC No.:	
Record Center Code:	ER/1306/DAT	Validation Required	
Logbook Ref. No.:	NA	Bill To: Sandia National Labs (Accounts Payable)	
Service Order No.:	CF0# 010-10	P.O. Box 5800 MS 0154	
Location	Tech Area	Abuquerque, NM 87185-0154	
Building	Room	Parameter & Method Requested	
Sample No.-Fraction	ER Sample ID or Sample Location Detail	Depth (ft)	ER Site No.
089435-001	TA1-W-03	358	NA
089435-010	TA1-W-03	358	NA
089435-016	TA1-W-03	358	NA
089435-018	TA1-W-03	358	NA
089435-020	TA1-W-03	358	NA
089435-033	TA1-W-03	358	NA
089435-034	TA1-W-03	358	NA
089435-036	TA1-W-03	358	NA
089436-001	TA1-W-03	358	NA
089436-010	TA1-W-03	358	NA
089436-016	TA1-W-03	358	NA
RMMA	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Ref. No.	Special Instructions/QC Requirements	
Sample Disposal	Return to Client <input checked="" type="checkbox"/> Disposal by lab <input checked="" type="checkbox"/>	EDD <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	
Turnaround Time	7 Day <input type="checkbox"/> 15 Day <input type="checkbox"/> 30 Day <input checked="" type="checkbox"/>	Level D Package <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Return Samples By:	Signature: <i>[Signature]</i> Init: <i>[Init]</i>	*Send report to:	
Sample Team	Name: Robert Lynch	Tim Jackson/ORG.4133/MS.0729/284-2547	
Members	Name: Alfred Samillanes	Gamma Spec. short list (Am-241 Co-60 Cs-137 K-40)	
		Major Anions (Br, Cl, F, SO4)	
		*Please list as separate report.	
1. Relinquished by	Org. <i>4133</i> Date <i>7/22/10</i> Time <i>1005</i>	4. Relinquished by	Org. Date
1. Received by	Org. <i>4133</i> Date <i>7/22/10</i> Time <i>1005</i>	4. Received by	Org. Date
2. Relinquished by	Org. <i>4133</i> Date <i>7/22/10</i> Time <i>1145</i>	5. Relinquished by	Org. Date
2. Received by	Org. <i>62</i> Date <i>7-23-10</i> Time <i>0710</i>	5. Received by	Org. Date
3. Relinquished by	Org. Date	6. Relinquished by	Org. Date
3. Received by	Org. Date	6. Received by	Org. Date

Project/Task No. 146422.10.11.D1
SMO Authorization: *[Signature]*
Contract #: 691436
SMO Use: *500 BOTTLE CAPS*

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Depth (ft)	ER Site No.	Date Collected	Sample Matrix	Container Type	Volume	Preserv. active	Collection Method	Sample Type	Lab Sample ID
089435-001	TA1-W-03	358	NA	07/22/10 0927	GW	G	3x40 ml	HCL	G	SA	027
089435-010	TA1-W-03	358	NA	07/22/10 0928	GW	P	500 ml	HNO3	G	SA	028
089435-016	TA1-W-03	358	NA	07/22/10 0929	GW	P	500 ml	4C	G	SA	029
089435-018	TA1-W-03	358	NA	07/22/10 0930	GW	P	250 ml	H2SO4	G	SA	030
089435-020	TA1-W-03	358	NA	07/22/10 0932	GW	P	500 ml	4C	G	SA	031
089435-033	TA1-W-03	358	NA	07/22/10 0934	GW	P	1 L	HNO3	G	SA	032
089435-034	TA1-W-03	358	NA	07/22/10 0935	GW	P	1 L	HNO3	G	SA	033
089435-036	TA1-W-03	358	NA	07/22/10 0936	GW	AG	250 ml	4C	G	SA	034
089436-001	TA1-W-03	358	NA	07/22/10 0927	GW	G	3x40 ml	HCL	G	DU	035
089436-010	TA1-W-03	358	NA	07/22/10 0928	GW	P	500 ml	HNO3	G	DU	036
089436-016	TA1-W-03	358	NA	07/22/10 0929	GW	P	500 ml	4C	G	DU	037

Reference LOV (available at SMO)
TCL VOC (SW846-8260B) 1
TAL Metals+total Ur (SW846-6020/7470) 2
Major Anions (SW846-9056)+Alkaline (SM2320B) 3
NPN (353.2) 4
Perchlorate (314.0) 8
Gamma Spec (short list) (901.0) 5
Gross Alpha/Beta (900.0) 6
Tritium (906.0) 7
TCL VOC (SW846-8260B) 1
TAL Metals+total Ur (SW846-6020/7470) 2
Major Anions (SW846-9056)+Alkaline (SM2320B) 3

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: August 19, 2010

Client Sample ID: 089435-020
Sample ID: 256756031
Matrix: AQUEOUS
Collect Date: 22-JUL-10 09:32
Receive Date: 23-JUL-10
Collector: Client
Project: SNLSGWater
Client ID: SNLS003
Client Desc.: TA1-W-03
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR108/03/10	1504	1005933	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: August 19, 2010

Client Sample ID: 089436-020
Sample ID: 256756039
Matrix: AQUEOUS
Collect Date: 22-JUL-10 09:32
Receive Date: 23-JUL-10
Collector: Client

Project: SNLSGWater
Client ID: SNLS003
Client Desc.: TA1-W-03
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR108/03/10	1607	1005933	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

Internal Lab

CONTRACT LABORATORY ANALYSIS REQUEST AND CHAIN OF CUSTODY

Batch No. MA		SMO/Use		AR/COC		613279	
Dept. No./Mail Stop: 4133/1126		Date Samples Shipped: 9/20/10		Project/Task No. 146422.10.11.01		Waste Characterization	
Project/Task Manager: Don Schofield		Carrier/Invoice No. 1778368		SMO Authorization: <i>SAH E. Lu</i>		-Send preliminary/copy report to:	
Project Name: Burn Site GMM		Lab Contact: Edie Kent/803-556-8171		Contract #: PO 691436		Released by COC No.:	
Record Center Code: ER/133/DAT		Lab Destination: GEL		SMO Contact/Phone: Pam Plussant/505-844-3185		Validation Required	
Logbook Ref. No.: ER 058		SMO Contact/Phone: Lorraine Herrera/505-844-3199		Send Report to SMO:		Bill To: Sandia National Labs (Accounts Payable)	
Service Order No. CF#058-11		Tech Area		Room		P.O. Box 5800 MS 0154	
Location		Building		Room		Albuquerque, NM 87185-0154	
Sample No.-Fraction		Pump Depth (ft)		ER Site No.		Date/Time Collected	
089659-001		163		NA		0920100849	
089659-005		163		NA		0920100851	
089659-006		163		NA		0920100852	
089659-010		163		NA		0920100853	
089659-016		163		NA		0920100854	
089659-017		163		NA		0920100855	
089659-018		163		NA		0920100856	
089659-020		163		NA		0920100857	
089659-033		163		NA		0920100859	
089659-034		163		NA		0920100900	
RMMA		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Ref. No.		Sample Tracking	
Sample Disposal		Return to Client <input checked="" type="checkbox"/>		Disposal by lab		Date Entered (mm/dd/yyyy)	
Turnaround Time		7 Day <input type="checkbox"/> 15 Day <input type="checkbox"/> 30 Day <input checked="" type="checkbox"/>		Negotiated TAT		Entered by	
Return Samples By:		Name		Signature		Date	
Sample Team		William J Gibson		<i>William J Gibson</i>		Weston/4133/844-4013/239-7367	
Members		Robert Lynch		<i>Robert Lynch</i>		Weston/4133/844-4013/250-7090	
		Alfred Santillanes		<i>Alfred Santillanes</i>		Weston/4133/844-5130/228-0710	
1. Relinquished by		Org.		Date		Time	
1. Received by <i>SAH E. Lu</i>		Org. <i>SMO</i>		Date <i>9/20/10</i>		Time <i>09:48</i>	
2. Relinquished by		Org.		Date		Time	
2. Received by <i>SAH E. Lu</i>		Org. <i>SMO</i>		Date <i>9/20/10</i>		Time <i>09:48</i>	
3. Relinquished by		Org.		Date		Time	
3. Received by <i>SAH E. Lu</i>		Org. <i>SMO</i>		Date <i>9/21/10</i>		Time <i>08:05</i>	
4. Relinquished by		Org.		Date		Time	
4. Received by		Org.		Date		Time	
5. Relinquished by		Org.		Date		Time	
5. Received by		Org.		Date		Time	
6. Relinquished by		Org.		Date		Time	
6. Received by		Org.		Date		Time	
Special Instructions/OC Requirements		Level D Package <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Special Instructions/OC Requirements		Abnormal Conditions on Receipt	
*Send report to:		Tim Jackson/Org. 4133/MS 0756/505-284-2647		No perchlorate verification analysis is required		Lab Use	
		Major Cations/Na,K,Ca,Mg		Major Anions/Br,Cl,F,SO4/SMR46-9056			
		Major Anions/CO3,HCO3/SM2320B		*Please list as separate report.			
Reference LOV (available at SMO)		Container Type		Sample Type		Collector Method	
		Volume		Type		Type	
		3x40 ml		G		SA	
		4x1 L		AG		SA	
		3x40 ml		G		SA	
		500 ml		P		SA	
		1 L		P		SA	
		250 ml		P		SA	
		250 ml		P		SA	
		500 ml		P		SA	
		1 L		P		SA	
		1 L		P		SA	
		TCL VOC (SW846-8260B)		G		SA	
		TPH Diesel (SW846-8015A/B) SVOC		G		SA	
		TPH Gasoline (SW846-8015A/B) VOC		G		SA	
		TAL Metals+Total-U (SW846-60207470)		G		SA	
		Major Anions (SW846-9056)(SM2320B)		G		SA	
		Major Cations (SW846-6020)		G		SA	
		NPN (353.2)		G		SA	
		Perchlorate (314.0)		G		SA	
		Gamma Spec (short list)(901.1)		G		SA	
		Gross Alpha/Beta (900.0)		G		SA	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: Level C, Groundwater Monitoring

Report Date: October 18, 2010

Client Sample ID: 089659-020
Sample ID: 261121008
Matrix: AQUEOUS
Collect Date: 20-SEP-10 08:57
Receive Date: 21-SEP-10
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: CYN-MW6
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	J	0.00614	0.004	0.012	mg/L	1	MAR110/13/10	1829	1029701	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Page 1 of 2

Internal Lab

Batch No. N/A		SMO USES		AR/COC		613282					
Dept. No./Mail Stop: 4133/1126		Project Name: Don Schreffel		Waste Characterization		-Send preliminary/copy report to:					
Lab Contact: Edie Kahn 803-335-3171		Lab Dest/Station: GEL		Released by COC No.:		Validation(s) Requested:					
SMO Contract/Phone: FPM Plus/505-344-9185		Sand Report to SMO: Lomings Refr/204-344-3189		Bill To/Original National Lab (Account Payable):		P.O. Box 600 MS 0154					
Location: Room		Tech Area:		Subsampling Method:		Lab Sample ID:					
Reference LOV (available at SMO)											
Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time Collected	Sample Matrix	Container Type	Volume	Preservative	Collector Method	Sample Type	Analysis Requested
089665-001	CYN-MW12	274	NA	09/23/08 1105	GW	G	3x40 ml	HCl	G	SA	TCL VOC (SW846-8260B)
089665-002	CYN-MW12	274	NA	09/23/08 1108	GW	AG	4x1 L	4C	G	SA	SVOC (SW846-8270)
089665-005	CYN-MW12	274	NA	09/23/08 1110	GW	AG	4x1 L	4C	G	SA	TPH-Diesel (SW846-8015A(B)) SVOC
089665-006	CYN-MW12	274	NA	09/23/08 1111	GW	P	3x40 ml	HCl	G	SA	TPH-Gasoline (SW846-8016A(B)) VOC
089665-010	CYN-MW12	274	NA	09/23/08 1112	GW	P	600 ml	HNO3	G	SA	TAL Metals-Total-U (SW846-80207A7D)
089665-016	CYN-MW12	274	NA	09/23/08 1113	FGW	P	1 L	4C	G	SA	Major Anions (SW846-9056)(SM2320B)
089665-017	CYN-MW12	274	NA	09/23/08 1114	FGW	P	250 ml	HNO3	G	SA	Major Cations (SW846-8020)
089665-018	CYN-MW12	274	NA	09/23/08 1115	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)
089665-020	CYN-MW12	274	NA	09/23/08 1116	GW	P	500 ml	4C	G	SA	Perchlorate (314.0)
089665-024	CYN-MW12	274	NA	09/23/08 1118	GW	AG	4x1 L	4C	G	SA	High Explosives (SW846-8321A)
RMMA		Yes <input type="checkbox"/> No <input type="checkbox"/> Ref. No.		Sample Packaged		Special Instructions/QC Requirements:		EPO <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		Levels (D Package) <input type="checkbox"/> See <input type="checkbox"/> No <input type="checkbox"/>	
Sample Disposal		Return to Client <input checked="" type="checkbox"/>		Date/Time Disposed		Signature		Signature		Signature	
Turnaround Time		7 Day <input type="checkbox"/> 15 Day <input type="checkbox"/> 30 Day <input checked="" type="checkbox"/>		Negotiated TAT		Company/Qualification/Phone/Cellular		Company/Qualification/Phone/Cellular		Company/Qualification/Phone/Cellular	
Return Samples By:		Name		Signature		Signature		Signature		Signature	
Sample Team		William J Gibson		Robert Lynch		Allred Santillanes		Tim Jackson/204-4133/MS 0756/505-284-2642		If Perchlorate detected, perform verification analysis using SW846-8890M Major Cations (Ca, Mg, K, Na) Major Anions (Br, Cl, F, SO4) (SW846-9056) (CO3, HCO3) (SM2320B)	
Members		Date		Date		Date		Date		Date	
1. Relinquished by		Date		Date		Date		Date		Date	
2. Relinquished by		Date		Date		Date		Date		Date	
3. Relinquished by		Date		Date		Date		Date		Date	
4. Relinquished by		Date		Date		Date		Date		Date	
5. Relinquished by		Date		Date		Date		Date		Date	
6. Relinquished by		Date		Date		Date		Date		Date	

Lab Use

Lab Use

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: Level C, Groundwater Monitoring

Report Date: October 18, 2010

Client Sample ID: 089665-020
Sample ID: 261121046
Matrix: AQUEOUS
Collect Date: 23-SEP-10 11:16
Receive Date: 24-SEP-10
Collector: Client

Project: SNLSGWater
Client ID: SNLS003
Client Desc.: CYN-MW12
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR110/14/10	0735	1029701	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab		Batch No. <i>N/A</i>		Date Samples Shipped: <i>9/27/10</i>		Project/Task No. <i>146422-10-11-01</i>		SMO Use		AR/COG		613283			
Dept. No./Mail Stop: <i>4133/1126</i>		Carrier/Waybill No.:		SMO Authorization: <i>2444</i>		Contract #.: <i>PO 681436</i>		Waste Characterization		-Send preliminary/copy report to:					
Project/Task Manager: <i>Don Schofield</i>		Lab Contact: <i>Edie Kent/803-556-8171</i>		GEL		SNO		Released by COC No.:		Validation Required					
Project Name: <i>Burn Site GWM</i>		Lab Destination: <i>Pam Puissant/505-844-3185</i>		Lorraine Herrera/505-844-3199		Send Report to SMO:		Bill To: <i>Sandia National Labs (Accounts Payable)</i>		P.O. Box <i>6900 MS 0154</i>		<i>261560</i>			
Record Center Code: <i>ER/1333/DAT</i>		SMO Contract/Phone:		Reference LOV (available at SMO)		Container		Preservative		Collection Method		Sample Type			
Logbook Ref. No.: <i>ER 058</i>		Send Report to SMO:		Date/Time Collected		Sample Matrix		Volume		Method		Parameter & Method Requested			
Service Order No.:		Tech Area		ER Site No.		Date/Time Collected		Type		Sample Type		Lab Sample ID			
Building		Room		Pump Depth (ft)		Date/Time Collected		Type		Sample Type		Lab Sample ID			
Sample No.-Fraction		ER Sample ID or Sample Location Detail		Pump Depth (ft)		Date/Time Collected		Type		Sample Type		Lab Sample ID			
089668-001		CYN-MW10		171		0927101045		G		3x40 ml		SA		TCL VOC (SW846-8260B)	
089668-002		CYN-MW10		171		0927101047		AG		4x1 L		4C		SVOC (SW846-8270)	
089668-005		CYN-MW10		171		0927101049		AG		4x1 L		4C		TPH Diesel (SW846-8015A/B) SVOC	
089668-006		CYN-MW10		171		0927101050		P		3x40 ml		HCL		TPH Gasoline (SW846-8015A/B) VOC	
089668-010		CYN-MW10		171		0927101051		P		500 ml		HNO3		TAL Metals+Total-U (SW846-6020/7470)	
089668-016		CYN-MW10		171		0927101052		P		1 L		4C		Major Anions (SW846-9056)(SM2320B)	
089668-017		CYN-MW10		171		0927101053		P		250 ml		HNO3		Major Cations (SW846-6020)	
089668-018		CYN-MW10		171		0927101054		P		250 ml		H2SO4		NPN (353.2)	
089668-020		CYN-MW10		171		0927101055		P		500 ml		4C		Perchlorate (314.0)	
089668-024		CYN-MW10		171		0927101057		AG		4x1 L		4C		High Explosives (SW846-8921A)	
RMMA		Ref. No.		Sample Tracking		Date Entered (mm/dd/yy)		Sample Use		Special Instructions/QC Requirements		EDD		Level D Package	
Sample Disposal		Return to Client		Date Entered (mm/dd/yy)		Date Entered (mm/dd/yy)		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:	
Turnaround Time		7 Day		15 Day		30 Day		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:	
Return Samples By:		Negotiated TAT		Signature		Company/Organization/Phone/Cellular		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:	
Name		Signature		Company/Organization/Phone/Cellular		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:		Abnormal Conditions on Receipts	
William J Gibson		<i>William J Gibson</i>		Weston/4133/844-4013/239-7387		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:		Lab Use	
Robert Lynch		<i>Robert Lynch</i>		Weston/4133/844-4013/250-7080		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:			
Alfred Santillanes		<i>Alfred Santillanes</i>		Weston/4133/844-5130/228-0710		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:			
Sample Team Members		Signature		Company/Organization/Phone/Cellular		Special Instructions/QC Requirements		EDD		Level D Package		*Send report to:			
1. Relinquished by <i>William J Gibson</i>		Date <i>9/27/10</i>		Time <i>1132</i>		4. Relinquished by		Date		Time		Date		Time	
1. Received by <i>William J Gibson</i>		Date <i>9/27/10</i>		Time <i>1132</i>		4. Received by		Date		Time		Date		Time	
2. Relinquished by <i>William J Gibson</i>		Date <i>9/27/10</i>		Time <i>1230</i>		5. Relinquished by		Date		Time		Date		Time	
2. Received by <i>William J Gibson</i>		Date <i>9/27/10</i>		Time <i>0705</i>		5. Received by		Date		Time		Date		Time	
3. Relinquished by		Date		Time		6. Relinquished by		Date		Time		Date		Time	
3. Received by		Date		Time		6. Received by		Date		Time		Date		Time	

Special Instructions/QC Requirements
EDD Yes No
Level D Package Yes No
*Send report to:
Tim Jackson/Org. 4133/MS 0756/505-284-2847
If Perchlorate detected, perform verification analysis using SW846-6850M
Major Cations (Ca, Mg, K, Na)
Major Anions (Br, Cl, F, SO4, SW846-9056) (CO3, HCO3, SM2320B)
*Please list as separate report.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: Level C, Groundwater Monitoring

Report Date: October 22, 2010

Client Sample ID: 089668-020
Sample ID: 261560009
Matrix: AQUEOUS
Collect Date: 27-SEP-10 10:55
Receive Date: 28-SEP-10
Collector: Client

Project: SNLSGWater
Client ID: SNLS003
Client Desc.: CYN-MW10
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
<i>EPA 314.0 Perchlorate by IC "As Received"</i>											
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR11	10/13/10	2024	1029701	1

The following Analytical Methods were performed

Method	Description	Analyst	Comments
1	EPA 314.0 DOE-AL		

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Batch No. <i>NA</i>	SMO #/use		AR/COC	613285
Dept. No./Mail Stop: 4133/1126	Project/Task No.: 146422-10-11-01	Waste Characterization		
Project/Task Manager: Don Schofield	SMO Authorization: <i>Edie Kent</i>	-Send preliminary/copy report to:		
Project Name: Burn Site GWM	Contract #: PO 691436	Released by COC No.: _____		
Record Center Code: ER1333/DAT	Lab Contact: Edie Kent/803-356-8171	Validation Required <input checked="" type="checkbox"/>		
Logbook Ref. No.: ER 058	Lab Destination: GEL	Bill To: Sandia National Labs (Accounts Payable)		
Service Order No. CF#058-11	SMO Contact/Phone: Pam Puissant/505-844-3185	P.O. Box 5800 MS 0154		
Location	Send Report to SMO: Lorraine Herrera/505-844-3198	Albuquerque, NM 87165-0154		
Building	Room	Parameter & Method Requested		
Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Lab Sample ID
089672-001	CYN-MW9	196	NA	TCL VOC (SW846-8260B) 031
089672-002	CYN-MW9	196	NA	SVOC (SW846-8270) 032
089672-005	CYN-MW9	196	NA	TPH Diesel (SW846-8015A/B) SVOC 033
089672-006	CYN-MW9	196	NA	TPH Gasoline (SW846-8015A/B) VOC 034
089672-010	CYN-MW9	196	NA	TAL Metals+Total-U (SW846-6020/7470) 035
089672-016	CYN-MW9	196	NA	Major Anions (SW846-9056)(SM2320B)) 036
089672-017	CYN-MW9	196	NA	Major Cations (SW846-6020) 037
089672-018	CYN-MW9	196	NA	NPN (353.2) 038
089672-020	CYN-MW9	196	NA	Perchlorate (314.0) 039
089672-024	CYN-MW9	196	NA	High Explosives (SW846-8321A) 040
RMMA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. _____ <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Abnormal Conditions on Receipt	
Sample Disposal	Turnaround Time	Return Samples By:	Special Instructions/QC Requirements	
	7 Day <input type="checkbox"/> 15 Day <input type="checkbox"/> 30 Day <input checked="" type="checkbox"/>	7 Day <input type="checkbox"/> 15 Day <input type="checkbox"/> 30 Day <input checked="" type="checkbox"/>	EDD <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No	
Name	Signature	Company/Organization/Phone/Cellular	*Send report to:	
William J Gibson	<i>William J Gibson</i>	Weston/4133/844-401/3239-7367	Tim Jackson/Org.4133/MS 0756/505-284-2547	
Robert Lynch	<i>Robert Lynch</i>	Weston/4133/844-401/3250-7090	If Perchlorate detected, perform verification analysis using SW846-6850M	
Alfred Santillanes	<i>Alfred Santillanes</i>	Weston/4133/844-5130/228-0710	Major Cations (Ca, Mg, K, Na)	
			Major Anions (B, Cl, F, SO4, SV846-9056)(CO3, HCO3, SM2320B)	
			*Please list as separate report.	
1. Relinquished by	Org. Date	Time	4. Relinquished by	Date
<i>William J Gibson</i>	Org. 9/13/03	Time 17:00		
1. Received by	Org. Date	Time	4. Received by	Date
<i>William J Gibson</i>	Org. 9/13/03	Time 17:00		
2. Relinquished by	Org. Date	Time	5. Relinquished by	Date
<i>William J Gibson</i>	Org. 9/13/03	Time 12:45		
2. Received by	Org. Date	Time	5. Received by	Date
<i>William J Gibson</i>	Org. 9/13/03	Time 07:40		
3. Relinquished by	Org. Date	Time	8. Relinquished by	Date
3. Received by	Org. Date	Time	6. Received by	Date

OFF-SITE LABORATORY
Analysis Request And Chain Of Custody (Continuation)

Page 2 of 2
613285

AR/COC-

Project Name: Burn Site GWM		Project/Task Manager: Don Schofield		Project/Task No.: 146422.10.11.01		Reference LOV (available at SMO)		Lab use					
Location	Room	ER Sample ID or Sample Location detail	Pump Depth (ft)	ER Site No.	Date/Time Collected	Sample Matrix	Container Type	Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
089672-033	CYN-MW9		196	NA	092810\1107	GW	P	1 L	HNO3	G	SA	Gamma Spec (short list)(901.1)	041
089672-034	CYN-MW9		196	NA	092810\1109	GW	P	1 L	HNO3	G	SA	Gross Alpha/Beta (900.0)	042
089672-035	CYN-MW9		196	NA	092810\1111	GW	P	1 L	HNO3	G	SA	Isotopic-U (ASTM D3972-09M)	043
089672-036	CYN-MW9		196	NA	092810\1113	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	044
089673-001	CYN-MW9		196	NA	092810\1048	GW	G	3x40 ml	HCL	G	DU	TCL VOC (SW846-8260B)	045
089673-002	CYN-MW9		196	NA	092810\1050	GW	AG	4x1 L	4C	G	DU	SVOC (SW846-8270)	046
089673-005	CYN-MW9		196	NA	092810\1053	GW	AG	4x1 L	4C	G	DU	TPH Diesel (SW846-8015A/B) SVOC	047
089673-006	CYN-MW9		196	NA	092810\1056	GW	P	3x40 ml	HCL	G	DU	TPH Gasoline (SW846-8015A/B) VOC	048
089673-010	CYN-MW9		196	NA	092810\1058	GW	P	500 ml	HNO3	G	DU	TAL Metals+ Total-U (SW846-6020/7470)	049
089673-016	CYN-MW9		196	NA	092810\1059	FGW	P	1 L	4C	G	DU	Major Anions (SW846-9056)(SM2320B))	050
089673-017	CYN-MW9		196	NA	092810\1101	FGW	P	250 ml	HNO3	G	DU	Major Cations (SW846-6020)	051
089673-018	CYN-MW9		196	NA	092810\1102	GW	P	250 ml	H2SO4	G	DU	NPN (353.2)	052
089673-020	CYN-MW9		196	NA	092810\1103	GW	P	500 ml	4C	G	DU	Perchlorate (314.0)	053
089673-024	CYN-MW9		196	NA	092810\1104	GW	AG	4x1 L	4C	G	DU	High Explosives (SW846-8321A)	054
089673-033	CYN-MW9		196	NA	092810\1107	GW	P	1 L	HNO3	G	DU	Gamma Spec (short list)(901.1)	055
089673-034	CYN-MW9		196	NA	092810\1109	GW	P	1 L	HNO3	G	DU	Gross Alpha/Beta (900.0)	056
089673-035	CYN-MW9		196	NA	092810\1111	GW	P	1 L	HNO3	G	DU	Isotopic-U (ASTM D3972-09M)	057
089673-036	CYN-MW9		196	NA	092810\1113	GW	AG	250 ml	4C	G	DU	Tritium (906.0)	058
089674-001	CYN-TB11		NA	NA	092810\1048	DIW	G	3x40 ml	HCL	G	TB	TCL VOC (SW846-8260B) 261560077	059

Abnormal Conditions on Receipt
Recipient Initials: *AK*

LAB USE

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: Level C, Groundwater Monitoring

Report Date: October 22, 2010

Client Sample ID: 089672-020
Sample ID: 261560039
Matrix: AQUEOUS
Collect Date: 28-SEP-10 11:03
Receive Date: 29-SEP-10
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: CYN-MW9
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR110/13/10	2102	1029701	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: Level C, Groundwater Monitoring

Report Date: October 22, 2010

Client Sample ID: 089673-020
Sample ID: 261560053
Matrix: AQUEOUS
Collect Date: 28-SEP-10 11:03
Receive Date: 29-SEP-10
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: CYN-MW9
Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR110/13/10	2121	1029701	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. 111A		SMO Use		AR/COG		613286																																																																																																																																																
Dept. No./Mail Stop: 4133/1126		Date Samples Shipped: 9/29/08		Project/Task No.: 146422.10.11.01		Waste Characterization																																																																																																																																																
Project/Task Manager: Don Schofield		Carrier/Waybill No.:		SMO Authorization: <i>Ray W. Jones</i>		-Send preliminary/copy report to:																																																																																																																																																
Project Name: Burn Site GWM		Lab Contact: Edie Kent/803-556-8171		Contract #: PO 691436		<input type="checkbox"/> Released by COC No.:																																																																																																																																																
Record Center Code: ER/1333/DAT		Lab Destination: GEL		P.O. Box 5900 MS 0154		<input checked="" type="checkbox"/> Validation Required																																																																																																																																																
Logbook Ref. No.:		SMO Contact/Phone: Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable)		261560																																																																																																																																																
Service Order No. CF#058-11		Send Report to SMO: Lorraine Herrera/505-844-3199		Albuquerque, NM 87185-0154																																																																																																																																																		
<p>Location</p> <p>Building: _____</p> <p>Room: _____</p>																																																																																																																																																						
<p>Reference LOV (available at SMO)</p> <table border="1"> <thead> <tr> <th>Sample No.-Fraction</th> <th>ER Sample ID or Sample Location Detail</th> <th>Pump Depth (ft)</th> <th>ER Site No.</th> <th>Date/Time Collected</th> <th>Sample Matrix</th> <th>Container Type</th> <th>Volume</th> <th>Preservative</th> <th>Collection Method</th> <th>Sample Type</th> <th>Parameter & Method Requested</th> <th>Lab Sample ID</th> </tr> </thead> <tbody> <tr> <td>089675-001</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101106</td> <td>GW</td> <td>G</td> <td>3x40 ml</td> <td>HCL</td> <td>G</td> <td>SA</td> <td>TCL VOC (SW846-8260B)</td> <td>060</td> </tr> <tr> <td>089675-002</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101108</td> <td>GW</td> <td>AG</td> <td>4x1 L</td> <td>4C</td> <td>G</td> <td>SA</td> <td>SVOC (SW846-8270)</td> <td>061</td> </tr> <tr> <td>089675-005</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101110</td> <td>GW</td> <td>AG</td> <td>4x1 L</td> <td>4C</td> <td>G</td> <td>SA</td> <td>TPH Diesel (SW846-8015A/B) SVOC</td> <td>062</td> </tr> <tr> <td>089675-006</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101111</td> <td>GW</td> <td>P</td> <td>3x40 ml</td> <td>HCL</td> <td>G</td> <td>SA</td> <td>TPH Gasoline (SW846-8015A/B) VOC</td> <td>063</td> </tr> <tr> <td>089675-010</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101112</td> <td>GW</td> <td>P</td> <td>500 ml</td> <td>HNO3</td> <td>G</td> <td>SA</td> <td>TAL Metals+Total-U (SW846-6020/7470)</td> <td>064</td> </tr> <tr> <td>089675-016</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101113</td> <td>FGW</td> <td>P</td> <td>1 L</td> <td>4C</td> <td>G</td> <td>SA</td> <td>Major Anions (SW846-9056)(SM2320B)</td> <td>065</td> </tr> <tr> <td>089675-017</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101114</td> <td>FGW</td> <td>P</td> <td>250 ml</td> <td>HNO3</td> <td>G</td> <td>SA</td> <td>Major Cations (SW846-6020)</td> <td>066</td> </tr> <tr> <td>089675-018</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101115</td> <td>GW</td> <td>P</td> <td>250 ml</td> <td>H2SO4</td> <td>G</td> <td>SA</td> <td>NPN (353.2)</td> <td>067</td> </tr> <tr> <td>089675-020</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101116</td> <td>GW</td> <td>P</td> <td>500 ml</td> <td>4C</td> <td>G</td> <td>SA</td> <td>Perchlorate (314.0)</td> <td>068</td> </tr> <tr> <td>089675-024</td> <td>CYN-MW11</td> <td>255</td> <td>NA</td> <td>0929101118</td> <td>GW</td> <td>AG</td> <td>4x1 L</td> <td>4C</td> <td>G</td> <td>SA</td> <td>High Explosives (SW846-8321A)</td> <td>069</td> </tr> </tbody> </table>								Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time Collected	Sample Matrix	Container Type	Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID	089675-001	CYN-MW11	255	NA	0929101106	GW	G	3x40 ml	HCL	G	SA	TCL VOC (SW846-8260B)	060	089675-002	CYN-MW11	255	NA	0929101108	GW	AG	4x1 L	4C	G	SA	SVOC (SW846-8270)	061	089675-005	CYN-MW11	255	NA	0929101110	GW	AG	4x1 L	4C	G	SA	TPH Diesel (SW846-8015A/B) SVOC	062	089675-006	CYN-MW11	255	NA	0929101111	GW	P	3x40 ml	HCL	G	SA	TPH Gasoline (SW846-8015A/B) VOC	063	089675-010	CYN-MW11	255	NA	0929101112	GW	P	500 ml	HNO3	G	SA	TAL Metals+Total-U (SW846-6020/7470)	064	089675-016	CYN-MW11	255	NA	0929101113	FGW	P	1 L	4C	G	SA	Major Anions (SW846-9056)(SM2320B)	065	089675-017	CYN-MW11	255	NA	0929101114	FGW	P	250 ml	HNO3	G	SA	Major Cations (SW846-6020)	066	089675-018	CYN-MW11	255	NA	0929101115	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	067	089675-020	CYN-MW11	255	NA	0929101116	GW	P	500 ml	4C	G	SA	Perchlorate (314.0)	068	089675-024	CYN-MW11	255	NA	0929101118	GW	AG	4x1 L	4C	G	SA	High Explosives (SW846-8321A)	069
Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time Collected	Sample Matrix	Container Type	Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID																																																																																																																																										
089675-001	CYN-MW11	255	NA	0929101106	GW	G	3x40 ml	HCL	G	SA	TCL VOC (SW846-8260B)	060																																																																																																																																										
089675-002	CYN-MW11	255	NA	0929101108	GW	AG	4x1 L	4C	G	SA	SVOC (SW846-8270)	061																																																																																																																																										
089675-005	CYN-MW11	255	NA	0929101110	GW	AG	4x1 L	4C	G	SA	TPH Diesel (SW846-8015A/B) SVOC	062																																																																																																																																										
089675-006	CYN-MW11	255	NA	0929101111	GW	P	3x40 ml	HCL	G	SA	TPH Gasoline (SW846-8015A/B) VOC	063																																																																																																																																										
089675-010	CYN-MW11	255	NA	0929101112	GW	P	500 ml	HNO3	G	SA	TAL Metals+Total-U (SW846-6020/7470)	064																																																																																																																																										
089675-016	CYN-MW11	255	NA	0929101113	FGW	P	1 L	4C	G	SA	Major Anions (SW846-9056)(SM2320B)	065																																																																																																																																										
089675-017	CYN-MW11	255	NA	0929101114	FGW	P	250 ml	HNO3	G	SA	Major Cations (SW846-6020)	066																																																																																																																																										
089675-018	CYN-MW11	255	NA	0929101115	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	067																																																																																																																																										
089675-020	CYN-MW11	255	NA	0929101116	GW	P	500 ml	4C	G	SA	Perchlorate (314.0)	068																																																																																																																																										
089675-024	CYN-MW11	255	NA	0929101118	GW	AG	4x1 L	4C	G	SA	High Explosives (SW846-8321A)	069																																																																																																																																										
<p>RMMA</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No.</p> <p>Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab</p> <p>Turnaround Time <input type="checkbox"/> 7 Day <input type="checkbox"/> 15 Day <input checked="" type="checkbox"/> 30 Day</p>		<p>Special Instructions/QC Requirements</p> <p>EDD <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Level D Package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>		<p>Abnormal Conditions on Receipt</p>		<p>Lab Use</p>																																																																																																																																																
<p>Return Samples By:</p> <p>Name: _____</p> <p>Signature: _____</p> <p>Company/Organization/Phone/Cellular: _____</p>		<p>Sample Tracking</p> <p>Date Entered: _____</p> <p>QC Initials: _____</p>		<p>*Send report to:</p> <p>Tim Jackson/Org. 4133/MS 0755/505-284-2547</p> <p>If Perchlorate detected, perform verification analysis using SW846-6850M</p> <p>Major Cations (Ca, Mg, K, Na)</p> <p>Major Anions (Br, Cl, F, SO4, SW846-9056)(CO3, HCO3, SM2320B)</p> <p>*Please list as separate report.</p>		<p>Lab Use</p>																																																																																																																																																
<p>Sample Team Members</p> <p>William J Gibson</p> <p>Robert Lynch</p> <p>Alfred Santillanes</p>		<p>Relinquished by</p> <p>1. Received by</p> <p>2. Relinquished by</p> <p>3. Relinquished by</p>		<p>1. Relinquished by</p> <p>4. Relinquished by</p> <p>5. Relinquished by</p> <p>6. Relinquished by</p>		<p>Date</p> <p>Time</p>																																																																																																																																																

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company :	Sandia National Laboratories	Report Date: October 22, 2010
Address :	MS-0756, Org. 06765, Bldg. 823/Rm. 4276	
	1515 Eubank SE	
	Albuquerque, New Mexico 87123	
Contact:	Ms. Pamela M. Puissant	
Project:	Level C, Groundwater Monitoring	

Client Sample ID: 089675-020	Project: SNLSGWater
Sample ID: 261560068	Client ID: SNLS003
Matrix: AQUEOUS	
Collect Date: 29-SEP-10 11:16	
Receive Date: 30-SEP-10	Client Desc.: CYN-MW11
Collector: Client	Vol. Recv.:

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography										
<i>EPA 314.0 Perchlorate by IC "As Received"</i>										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR110/13/10	2140	1029701	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

Appendix B

Data Validation Sample Findings Summary Sheets for the Perchlorate Data

Memorandum

Date: September 2, 2010

To: File

From: Kevin Lambert

Subject: Inorganic Data Review and Validation – SNL
Site: Tijeras Arroyo GWM
AR/COC: 613167, 613169, 613170, and 613171
SDG: 256756
Laboratory: GEL
Project/Task: 146422.10.11.01
Analysis: General Chemistry

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

Five samples were prepared and analyzed with accepted procedures using methods EPA 353.2 (nitrate/nitrite by Cd reduction), EPA 9056 (anions by Ion Chromatography), and SM 2320B (alkalinity). Three samples were prepared and analyzed with accepted procedures using methods EPA 314.0 (perchlorate). Data were reported for all required analytes. Problems were identified with the data package that results in the qualification of data.

1. Alkalinity:

Alkalinity was detected in the method blank (MB) at a concentration \geq the practical quantitation limit (PQL). The alkalinity result for sample 256756-020 was a detect $<5X$ the MB result and will be **qualified "7.9UJ,B"** at $5X$ the MB value (mg/L). The other associated sample results were detects $\geq 5X$ the MB result and will not be qualified.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times and Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All initial and continuing calibration QC acceptance criteria were met.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section and as follows.

Alkalinity:

Alkalinity was detected in the equipment blank (EB), sample -020, associated with samples -029 and -037, at a concentration \geq the PQL. However, it should be noted that the alkalinity result for the EB has already been qualified non-detect due to MB contamination and, thus, does not affect the associated field sample results.

Nitrate/Nitrite:

Nitrate/Nitrite was detected in the EB, sample -021, associated with samples -030 and -038, at a concentration \geq the method detection limit (MDL) but $<$ the PQL. The associated sample result were detects $\geq 5X$ the EB result and will not be qualified.

Laboratory Control Sample (LCS)

All LCS recoveries met QC acceptance criteria.

Matrix Spike (MS)

All MS recoveries met QC acceptance criteria

Laboratory Replicate

The replicate met all QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported.

Ion Chromatography:

Samples -003 and -012 were diluted 5X for sulfate and samples -029 and -037 were diluted 25X for chloride and sulfate due to high concentration for this analysis.

Nitrate/Nitrite:

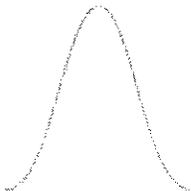
Samples -004, -013, and -021 were diluted 5X and samples -030 and -038 were diluted 25X due to high concentration for this analysis or matrix interference.

All associated batch QC samples were analyzed at dilution factors that resulted in relative dilution factors to the sample that were $\leq 5X$. No sample data will be qualified as a result.

Other QC

EBs and a field duplicate pair were submitted on the AR/COC(s). There are no “required” review criteria for field duplicate analyses comparability; no data will be qualified as a result.

No other specific issues that affect data quality were identified.



Memorandum

DATE: November 10, 2010

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: Burn Site GWM
AR/COC(s): 613279, 613280, 613281, and 613282
SDG: 261121
Laboratory: GEL
Project/Task No: 146422.10.11.01

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA 314.0 (perchlorate), EPA 353.2 (nitrate/nitrite by Cd reduction), EPA 9056 (anions by Ion Chromatography), and SM 2320B (alkalinity). No problems were identified with the data package that result in the qualification of data.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except the following. Nitrate/nitrite was detected in the method blank (MB) at a concentration > the method detection limit (MDL) but ≤ the practical quantitation limit (PQL). All associated sample results were detects >5X the MB concentration and will not be qualified.

Alkalinity Analysis: No target analytes were detected in the blanks, except the following. Bicarbonate alkalinity was detected in the MB at a concentration > the MDL but \leq the PQL. All associated sample results were detects >5X the MB concentration and will not be qualified.

All Other Analyses: No target analytes were detected in the blanks.

Laboratory Control Sample (LCS)

All Analyses: All LCS QC acceptance criteria were met.

Matrix Spike

All Analyses: All MS QC acceptance criteria were met.

Laboratory Replicates

All Analyses: All replicate QC acceptance criteria were met.

Detection Limits/Dilutions

Anions Analysis: All detection limits were properly reported. All samples were diluted either 5X or 10X for chloride and sulfate due to high concentrations of the target analytes. All associated batch QC samples were analyzed at dilution factors that resulted in relative dilution factors to the samples that were \leq 5X. No sample data will be qualified as a result.

Nitrate/nitrite Analysis: All detection limits were properly reported. Sample 261121-007 was diluted 50X and all other samples were diluted either 25X for nitrate/nitrite due to high concentration of the target analyte. All associated batch QC samples were analyzed at dilution factors that resulted in relative dilution factors to the samples that were \leq 5X. No sample data will be qualified as a result

All Other Analyses: All detection limits were properly reported. No samples required dilution

Other QC

All Analyses: No equipment blanks (EBs), field blanks (FBs), or field duplicates (FDs) were submitted on the AR/COC(s).

No other specific issues were identified that affect data quality.



Sample Findings Summary



AR/COC: 613279, 613280, 613281, 613282

Page 1 of 2

Analytical Method	Sample ID	Analyte Name (CAS#)	Qualifier, RC
DOE EML HASL-300, U-02-RC			
	089659-035/CYN-MW6	Uranium-235/236 (13982-70-2)	J, RP2
	089661-035/CYN-MW1D	Uranium-235/236 (13982-70-2)	J, FR7,RP2
	089663-035/CYN-MW3	Uranium-235/236 (13982-70-2)	J, RP2
	089665-035/CYN-MW12	Uranium-235/236 (13982-70-2)	J, RP2
EPA 900.0/SW846 9310			
	089659-034/CYN-MW6	BETA (12587-47-2)	J, FR7
	089661-034/CYN-MW1D	ALPHA (12587-46-1)	J, FR7
	089661-034/CYN-MW1D	BETA (12587-47-2)	J, FR7
	089663-034/CYN-MW3	BETA (12587-47-2)	J, FR7
	089665-034/CYN-MW12	BETA (12587-47-2)	J, FR7
EPA 901.1			
	089659-033/CYN-MW6	Americium-241 (14596-10-2)	BD, FR3
	089659-033/CYN-MW6	Cesium-137 (10045-97-3)	BD, FR3
	089659-033/CYN-MW6	Cobalt-60 (10198-40-0)	BD, FR3
	089659-033/CYN-MW6	Potassium-40 (13966-00-2)	BD, FR3
	089661-033/CYN-MW1D	Americium-241 (14596-10-2)	BD, FR3
	089661-033/CYN-MW1D	Cesium-137 (10045-97-3)	BD, FR3
	089661-033/CYN-MW1D	Cobalt-60 (10198-40-0)	BD, FR3
	089661-033/CYN-MW1D	Potassium-40 (13966-00-2)	BD, FR3
	089663-033/CYN-MW3	Americium-241 (14596-10-2)	BD, FR3
	089663-033/CYN-MW3	Cesium-137 (10045-97-3)	BD, FR3
	089663-033/CYN-MW3	Cobalt-60 (10198-40-0)	BD, FR3
	089663-033/CYN-MW3	Potassium-40 (13966-00-2)	BD, FR3
	089665-033/CYN-MW12	Americium-241 (14596-10-2)	BD, FR3
	089665-033/CYN-MW12	Cesium-137 (10045-97-3)	BD, FR3
	089665-033/CYN-MW12	Cobalt-60 (10198-40-0)	BD, FR3
	089665-033/CYN-MW12	Potassium-40 (13966-00-2)	BD, FR3

Analytical Method	Sample ID	Analyte Name (CAS#)	Qualifier, RC
EPA 906.0 Modified			
	089659-036/CYN-MW6	Tritium (10028-17-8)	BD, FR3
	089661-036/CYN-MW1D	Tritium (10028-17-8)	BD, FR3
	089663-036/CYN-MW3	Tritium (10028-17-8)	BD, FR3
	089665-036/CYN-MW12	Tritium (10028-17-8)	BD, FR3
SW846 3005/6020 DOE-AL			
	089659-010/CYN-MW6	Cadmium (7440-43-9)	J+, CK2
	089659-010/CYN-MW6	Cobalt (7440-48-4)	J+, CK2
	089659-010/CYN-MW6	Manganese (7439-96-5)	J+, CK2
	089663-010/CYN-MW3	Cobalt (7440-48-4)	J+, CK2
	089665-010/CYN-MW12	Cobalt (7440-48-4)	J+, CK2
SW846 3535/8321A Modifie			
	089665-024/CYN-MW12	m-Nitrotoluene (99-08-1)	UJ, I4
	089665-024/CYN-MW12	o-Nitrotoluene (88-72-2)	UJ, I4
	089665-024/CYN-MW12	p-Nitrotoluene (99-99-0)	UJ, I4
SW846 8270C			
	089665-002/CYN-MW12	3,3'-Dichlorobenzidine (91-94-1)	UJ, MS5

All other analyses met QC acceptance criteria; no further data should be qualified.



Memorandum

Date: November 12, 2010

To: File

From: Kevin Lambert

Subject: Inorganic Data Review and Validation – SNL
Site: Burn Site GWM
AR/COC: 613283, 613284, 613285, and 613286
SDG: 261560
Laboratory: GEL
Project/Task: 146422.10.11.01
Analysis: General Chemistry

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

Five samples were prepared and analyzed with accepted procedures using methods EPA 353.2 (nitrate/nitrite by Cd reduction), EPA 9056 (Anions by Ion Chromatography), EPA 314.0 (perchlorate), and SM 2320B (alkalinity). Data were reported for all required analytes. Problems were identified with the data package that results in the qualification of data.

1. Alkalinity:

Bicarbonate alkalinity was detected in the method blanks (MBs) at concentrations \geq the practical quantitation limit (PQL). The bicarbonate alkalinity result for sample 261560-021 was a detect $<5X$ the MB result and will be **qualified “7.8UJ,B”** at $5X$ the MB value (mg/L). The other associated sample results were detects $\geq 5X$ the MB result and will not be qualified.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times and Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All initial and continuing calibration QC acceptance criteria were met.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section and as follows.

Anions by Ion Chromatography:

Chloride was detected in the equipment blank (EB), sample -021, associated with samples -036 and -050, at a concentration \geq the PQL. The associated sample results were detected $\geq 5X$ the EB result and will not be qualified.

Alkalinity:

Bicarbonate alkalinity was detected in the EB, sample -021, associated with samples -036 and -050, at a concentration \geq the PQL. However, it should be noted that the bicarbonate alkalinity result for the EB has already been qualified non-detect due to MB contamination and, thus, does not affect the associated field sample results.

Laboratory Control Sample (LCS)

All LCS recoveries met QC acceptance criteria.

Matrix Spike (MS)

All MS recoveries met QC acceptance criteria.

Perchlorate:

It should be noted that the MS analyses were performed on a SNL sample from another SDG. No sample data will be qualified as a result.

Laboratory Replicate

The replicate met all QC acceptance criteria.

Perchlorate:

It should be noted that the replicate analyses were performed on a SNL sample from another SDG. No sample data will be qualified as a result.

Detection Limits/Dilutions

All detection limits were properly reported. No samples were diluted except as follows.

Nitrate/Nitrite:

Samples were diluted 5X, 25X and 50X due to high concentration or matrix interference.

All associated batch QC samples were analyzed at dilution factors that resulted in relative dilution factors to the samples that were $\leq 5X$. No sample data will be qualified as a result.

Anions by Ion Chromatography:

Several samples were diluted 10X for chloride and sulfate due to high concentration for this analysis.

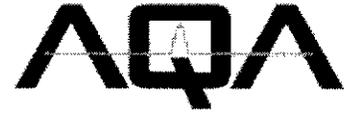
All associated batch QC samples were analyzed at dilution factors that resulted in relative dilution factors to the sample that were $\leq 5X$. No sample data will be qualified as a result.

Other QC

EBs and a field duplicate pair were submitted on the AR/COC(s). There are no “required” review criteria for field duplicate analyses comparability; no data will be qualified as a result.

No other specific issues that affect data quality were identified.

Sample Findings Summary



AR/COC: 613283, 613284, 613285, 613286

Page 1 of 4

Analytical Method	Sample ID	Analyte Name (CAS#)	Qualifier, RC
DOE EML HASL-300, U-02-RC			
	089668-035/CYN-MW10	Uranium-235/236 (13982-70-2)	J, FR7,RP2
	089670-035/CYN-EB2	Uranium-233/234 ()	BD, FR3
	089670-035/CYN-EB2	Uranium-235/236 (13982-70-2)	BD, FR3,RP2
	089670-035/CYN-EB2	Uranium-238 (7440-61-1)	BD, FR3
	089672-035/CYN-MW9	Uranium-235/236 (13982-70-2)	J, RP2
	089673-035/CYN-MW9	Uranium-235/236 (13982-70-2)	J, RP2
	089675-035/CYN-MW11	Uranium-235/236 (13982-70-2)	J, RP2
EPA 900.0/SW846 9310			
	089668-034/CYN-MW10	BETA (12587-47-2)	J, FR7
	089670-034/CYN-EB2	ALPHA (12587-46-1)	BD, FR3
	089670-034/CYN-EB2	BETA (12587-47-2)	BD, FR3
	089672-034/CYN-MW9	BETA (12587-47-2)	J, FR7
	089673-034/CYN-MW9	BETA (12587-47-2)	J, FR7
	089675-034/CYN-MW11	ALPHA (12587-46-1)	J, FR7
	089675-034/CYN-MW11	BETA (12587-47-2)	J, FR7
EPA 901.1			
	089668-033/CYN-MW10	Americium-241 (14596-10-2)	BD, FR3
	089668-033/CYN-MW10	Cesium-137 (10045-97-3)	BD, FR3
	089668-033/CYN-MW10	Cobalt-60 (10198-40-0)	BD, FR3
	089668-033/CYN-MW10	Potassium-40 (13966-00-2)	BD, FR3
	089670-033/CYN-EB2	Americium-241 (14596-10-2)	BD, FR3
	089670-033/CYN-EB2	Cesium-137 (10045-97-3)	BD, FR3
	089670-033/CYN-EB2	Cobalt-60 (10198-40-0)	BD, FR3
	089670-033/CYN-EB2	Potassium-40 (13966-00-2)	BD, FR3
	089672-033/CYN-MW9	Americium-241 (14596-10-2)	BD, FR3
	089672-033/CYN-MW9	Cesium-137 (10045-97-3)	BD, FR3
	089672-033/CYN-MW9	Cobalt-60 (10198-40-0)	BD, FR3
	089672-033/CYN-MW9	Potassium-40 (13966-00-2)	BD, FR3

Analytical Method	Sample ID	Analyte Name (CAS#)	Qualifier, RC
	089673-033/CYN-MW9	Americium-241 (14596-10-2)	BD, FR3
	089673-033/CYN-MW9	Cesium-137 (10045-97-3)	BD, FR3
	089673-033/CYN-MW9	Cobalt-60 (10198-40-0)	BD, FR3
	089673-033/CYN-MW9	Potassium-40 (13966-00-2)	BD, FR3
	089675-033/CYN-MW11	Americium-241 (14596-10-2)	BD, FR3
	089675-033/CYN-MW11	Cesium-137 (10045-97-3)	BD, FR3
	089675-033/CYN-MW11	Cobalt-60 (10198-40-0)	BD, FR3
	089675-033/CYN-MW11	Potassium-40 (13966-00-2)	BD, FR3
EPA 906.0 Modified			
	089668-036/CYN-MW10	Tritium (10028-17-8)	BD, FR3
	089670-036/CYN-EB2	Tritium (10028-17-8)	BD, FR3
	089672-036/CYN-MW9	Tritium (10028-17-8)	BD, FR3
	089673-036/CYN-MW9	Tritium (10028-17-8)	BD, FR3
	089675-036/CYN-MW11	Tritium (10028-17-8)	BD, FR3
SM 2320B			
	089670-016/CYN-EB2	Bicarbonate alkalinity (CaCO3) (7	7.8UJ, B
SW846 3005/6020 DOE-AL			
	089668-010/CYN-MW10	Cobalt (7440-48-4)	J+, CK2
	089668-010/CYN-MW10	Manganese (7439-96-5)	J+, CK2
	089668-010/CYN-MW10	Nickel (7440-02-0)	J+, CK2
	089668-010/CYN-MW10	Thallium (7440-28-0)	0.0031U, B,B3
	089668-010/CYN-MW10	Zinc (7440-66-6)	J+, CK2
	089668-017/CYN-MW10	Calcium (7440-70-2)	J, MS1,RP1
	089672-010/CYN-MW9	Calcium (7440-70-2)	J, MS1,RP1
	089672-010/CYN-MW9	Cobalt (7440-48-4)	J+, CK2
	089672-010/CYN-MW9	Copper (7440-50-8)	0.0098UJ, B2
	089672-010/CYN-MW9	Manganese (7439-96-5)	J+, CK2
	089672-010/CYN-MW9	Nickel (7440-02-0)	J+, CK2
	089672-010/CYN-MW9	Zinc (7440-66-6)	J+, CK2
	089672-017/CYN-MW9	Calcium (7440-70-2)	J, MS1,RP1
	089673-010/CYN-MW9	Calcium (7440-70-2)	J, MS1,RP1
	089673-010/CYN-MW9	Cobalt (7440-48-4)	J+, CK2

Analytical Method	Sample ID	Analyte Name (CAS#)	Qualifier, RC
	089673-010/CYN-MW9	Copper (7440-50-8)	0.0098UJ, B2
	089673-010/CYN-MW9	Manganese (7439-96-5)	J+, CK2
	089673-010/CYN-MW9	Nickel (7440-02-0)	J+, CK2
	089673-010/CYN-MW9	Zinc (7440-66-6)	J+, CK2
	089673-017/CYN-MW9	Calcium (7440-70-2)	J, MS1,RP1
	089675-010/CYN-MW11	Calcium (7440-70-2)	J, MS1,RP1
	089675-010/CYN-MW11	Cobalt (7440-48-4)	J+, CK2
	089675-010/CYN-MW11	Nickel (7440-02-0)	J+, CK2
	089675-017/CYN-MW11	Calcium (7440-70-2)	J, MS1,RP1
SW846 3535/8321A Modifie			
	089668-024/CYN-MW10	2-Amino-4,6-dinitrotoluene (355	UJ, I4
	089668-024/CYN-MW10	o-Nitrotoluene (88-72-2)	UJ, I4
	089668-024/CYN-MW10	PETN (78-11-5)	UJ, I4
	089668-024/CYN-MW10	p-Nitrotoluene (99-99-0)	UJ, I4
	089670-024/CYN-EB2	2-Amino-4,6-dinitrotoluene (355	UJ, I4
	089670-024/CYN-EB2	o-Nitrotoluene (88-72-2)	UJ, I4
	089670-024/CYN-EB2	PETN (78-11-5)	UJ, I4
	089670-024/CYN-EB2	p-Nitrotoluene (99-99-0)	UJ, I4
	089672-024/CYN-MW9	2-Amino-4,6-dinitrotoluene (355	UJ, I4
	089672-024/CYN-MW9	o-Nitrotoluene (88-72-2)	UJ, I4
	089672-024/CYN-MW9	PETN (78-11-5)	UJ, I4
	089672-024/CYN-MW9	p-Nitrotoluene (99-99-0)	UJ, I4
	089673-024/CYN-MW9	2-Amino-4,6-dinitrotoluene (355	UJ, I4
	089673-024/CYN-MW9	o-Nitrotoluene (88-72-2)	UJ, I4
	089673-024/CYN-MW9	PETN (78-11-5)	UJ, I4
	089673-024/CYN-MW9	p-Nitrotoluene (99-99-0)	UJ, I4
	089675-024/CYN-MW11	2-Amino-4,6-dinitrotoluene (355	UJ, I4
	089675-024/CYN-MW11	o-Nitrotoluene (88-72-2)	UJ, I4
	089675-024/CYN-MW11	PETN (78-11-5)	UJ, I4
	089675-024/CYN-MW11	p-Nitrotoluene (99-99-0)	UJ, I4
SW846 8015A/B VOC			
	089668-006/CYN-MW10	Gasoline Range Organics ()	50U, B1

Analytical Method	Sample ID	Analyte Name (CAS#)	Qualifier, RC
	089670-006/CYN-EB2	Gasoline Range Organics ()	50U, B1
	089672-006/CYN-MW9	Gasoline Range Organics ()	50U, B1
	089673-006/CYN-MW9	Gasoline Range Organics ()	50U, B1
	089675-006/CYN-MW11	Gasoline Range Organics ()	50U, B1

All other analyses met QC acceptance criteria; no further data should be qualified.
