



National Nuclear Security Administration

Sandia Site Office

P.O. Box 5400

Albuquerque, New Mexico 87185-5400

JUN 25 2008



CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. James Bearzi,
Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Road East, Bldg. 1
Santa Fe, NM 87505



Dear Mr. Bearzi:

On behalf of the Department of Energy (DOE) and Sandia Corporation (Sandia), DOE is submitting the June 2008 Consolidated Quarterly Report for the Environmental Restoration Project that addresses all quarterly reporting (from February through April 2008) required under the Hazardous and Solid Waste Amendments (HSWA) Module of the Resource Conservation and Recovery Act (RCRA) Permit, the Compliance Order on Consent and the Chemical Waste Landfill (CWL) Closure Plan for Sandia National Laboratories/New Mexico (SNL/NM), EPA No. 5890110518.

The results of the perchlorate screening show detectable concentrations (above 4.0 micrograms/liter) continue to be found at monitoring well CYN-MW6 (located at the Burn Site groundwater area). We have completed nine quarters of perchlorate monitoring at this well. We request a meeting at your earliest convenience to discuss our assessment of perchlorate concentrations and a plan for continued monitoring at CYN-MW6.

If you have any questions regarding this project quarterly report please contact me at (505) 845-6036, or Mike McFadden of my staff at (505) 845-6473. For perchlorate, or CWL groundwater related items, please contact Dan Pellegrino, also of my staff, at (505) 854-5398.

Sincerely,

Kimberly A. Davis
Patty Wagner
Manager

Enclosure

cc w/enclosure:

W. Moats, NMED-HWB

L. King, EPA, Region 6

T. Skibitski, NMED-OB

B. Birch, NMED-OB

Zimmerman Library, UNM

JUN 25 2008

James Bearzi

(2)

cc w/o enclosure:

A. Blumberg, SNL/NM, Org. 11100, MS-0141

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P. Freshour, SNL/NM, Org. 6765, MS-1089

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CERTIFICATION STATEMENT FOR APPROVAL AND FINAL RELEASE OF DOCUMENTS

Document title: Consolidated EPA Quarterly Report, June 2008

Document author: Paul Freshour, 06765

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

Signature: Francis B. Nimick
Fran B. Nimick
Deputy Director to the
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5/29/08
Date

and

Signature: Kimberly A. Davis
Patty Wagner
Manager
U.S. Department of Energy
National Nuclear Security Administration
Sandia Site Office
Owner and Co-Operator

6/25/08
Date



Sandia National Laboratories, New Mexico (SNL/NM)

Environmental Restoration Project

A Department of Energy Environmental Cleanup Program

**CONSOLIDATED
Quarterly Report**

February-March-April

June 2008



United States Department of Energy
Sandia Site Office

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

CONSOLIDATED QUARTERLY REPORT

June 2008

SANDIA NATIONAL LABORATORIES/NEW MEXICO (SNL/NM) ENVIRONMENTAL RESTORATION PROJECT

DOE: SANDIA SITE OFFICE
CONTRACTOR: SANDIA CORPORATION
PROJECT MANAGER: J. PAUL FRESHOUR

NUMBER OF POTENTIAL RELEASE SITES SUBJECT TO THIS PERMIT: 36
SUSPECT WASTE: radionuclides, metals, organics, and explosives

OVERVIEW

This Consolidated Quarterly Report for the Sandia National Laboratories Environmental Project addresses all quarterly reporting requirements required under the Hazardous and Solid Waste Amendments (HSWA) Module of the Resource Conservation and Recovery Act (RCRA) Permit, the Compliance Order on Consent (Consent Order), and the Chemical Waste Landfill (CWL) Closure Plan. This Quarterly Report covers the periods from February 2008 through April 2008. The following entities are addressed in these Sections:

SECTION I

Environmental Restoration Quarterly Report

SECTION II

Chemical Waste Landfill Quarterly Closure Progress Report

SECTION III

Perchlorate Screening Quarterly Report

SECTION I: ENVIRONMENTAL RESTORATION QUARTERLY REPORT

1.0 Introduction

This report discusses ongoing corrective actions for the Sandia National Laboratories (SNL) Environmental Restoration (ER) Project. The status of regulatory closure activities, specifically permit modifications for final corrective action complete approval, and status of documents pending regulatory approval are also included.

2.0 Work Completed in This Quarter (February 2008 through April 2008)

2.1 Mixed Waste Landfill (MWL)

- On February 14 and 27, 2008, routine neutron moisture logging of the MWL vadose zone was conducted to obtain baseline data regarding moisture content profiles with depth beneath the landfill.
- On February 12, 2008, the New Mexico Environmental Department (NMED) Hazardous Waste Bureau (HWB) approved the installation and location of replacement of three groundwater monitoring wells. The installation plan for two of the wells (MWL-MW7, and -MW8) had been submitted to the NMED and the location of these wells was approved in this letter. The NMED requested the installation plan for the third well (MWL-MW9).
- On February 15, 2008 the NMED issued a *Notice of Approval and Response to Public Comment on Soil-Vapor Sampling and Analysis Plan U.S. Department of Energy/ Sandia National Laboratories' Mixed Waste Landfill*.
- On February 21, 2008 DOE/Sandia submitted to the NMED the *MWL Annual Groundwater Monitoring Report, Spring 2007*. This report presented the results from the annual sampling event in 2007.
- On March 6, 2008, DOE/Sandia submitted a *Monitoring Well Plug and Abandonment Plan and Replacement Well Construction Plan; Decommissioning of Groundwater Monitoring Well MWL-MW2, Installation of Replacement Groundwater Monitoring Well MWL-MW9*.
- On March 21, 2008, the NMED issued a Notice of Approval for the plan for the installation of groundwater monitoring well MWL-MW9 (above).
- On April 23, 2008, DOE/Sandia submitted to the NMED the Summary Report for the MWL Well Plug and Abandonment and Installation: Decommissioning of Groundwater Monitoring Well MWL-BW1 and Installation of Groundwater Monitoring Well MWL-BW2.
- In April, the annual groundwater sampling event took place at the MWL. Four groundwater monitoring wells (MWL-BW2, -MW4, -MW5, and -MW6) were sampled for volatile organic constituents (VOCs), semivolatile organic constituents (SVOCs), metals, nitrate plus nitrite,

major anions, total alkalinity, total dissolved solids, radionuclides by gamma spectroscopy, gross alpha and beta, and tritium. Monitoring wells MWL-MW1, -MW2, and -MW3 were not sampled as they were in the process of being decommissioned.

- In April, MWL-BW2 was sampled for perchlorate as the first of eight required quarters of sampling for new wells.
- In April, DOE/Sandia started the field activities associated with the MWL Soil-Vapor Sampling and Analysis Plan (see above February 15, 2008). These activities are ongoing.
- In April, DOE/Sandia started field activities associated with the installation and replacement of groundwater monitoring wells at the MWL (see above). These activities are ongoing.

MWL Documents submitted to NMED pending regulatory approval:

- Corrective Measure Implementation Plan (CMIP), submitted November 2005; CMIP Notice of Disapproval (NOD) Part 1 response, submitted December 15, 2006; CMIP NOD Part 2 response submitted January 19, 2007.
- Long-term Monitoring and Maintenance Plan (LTMMP) submitted September 2007, the extended NMED public review and comment period ended January 31, 2007.

2.2 Project Management Site Closure

Operable units with only regulatory and administrative closure activities remaining have been closed and those activities will be managed under project management. Two permit modification requests are currently in progress with the New Mexico Environment Department (NMED), and a third was approved and completed in February.

Permit Modification Request submitted in September 2005

Twenty-eight sites were submitted for final regulatory approval of corrective action complete (CAC) in September 2005 including nine Solid Waste Management Units (SWMUs) and nineteen Areas of Concern (AOCs). NMED issued a final decision on February 21, 2008 that approved the permit modification request for the SWMUs and AOCs included in this permit modification request as listed below.

SWMUs – 1, 3, 45, 78, 137, 146, 148, 152, and 153

AOCs – 276, 1004, 1031, 1034, 1035, 1036, 1052, 1078, 1079, 1080, 1081, 1084, 1087, 1092, 1098, 1102, 1104, 1113, and 1120.

Permit Modification Request submitted in March 2006

Twenty-six sites were submitted for final regulatory approval of CAC in March 2006 including nineteen SWMUs and seven AOCs. The NMED issued a Notice of Public Comment Period and Intent to Approve a Class 3 Permit Modification of the RCRA Permit for Sandia National Laboratories for

these 26 sites on December 10, 2007. The NMED public review and comment period ended on February 8, 2008. The SWMUs and AOCs included in this permit modification request are listed below.

SWMUs – 4, 5, 46, 49, 52, 68, 91, 101, 116, 138, 140, 147, 149, 150, 154, 161, 196, 233, 234
AOCs – 1090, 1094, 1095, 1114, 1115, 1116, and 1117.

Permit Modification Request submitted in January 2008

Five sites were submitted for final regulatory approval of CAC in a permit modification request in January 2008. The Sandia/DOE public review and comment period ended on March 14, 2008; Sandia/DOE received no public comments. This permit modification included all remaining SNL ER sites with the exception of the Mixed Waste Landfill which is pending Corrective Measure Implementation and the Chemical Waste Landfill which is pending final regulatory approval of a post-closure permit. The MWL is addressed separately in Section 2.1 of this ER Quarterly Report. The CWL Quarterly Report is presented in Section II of this consolidated quarterly report. The four SWMUs and one AOC included in the January 2008 permit modification request are listed below.

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

2.3 Site-Wide Hydrogeologic Characterization

TA-3/5 Groundwater

- Quarterly sampling was completed in February. Results will be reported in the SNL Groundwater Protection Program (GWPP) Annual Groundwater Monitoring Report.

Burn Site Groundwater

- Quarterly sampling was performed in March. Results will be reported in the SNL GWPP Annual Groundwater Monitoring Report. Perchlorate results are reported in the quarterly Perchlorate Screening Quarterly Monitoring Report in Section III of this report.
- The Current Conceptual Model of Groundwater Flow and Contaminant Transport at Sandia National Laboratories/New Mexico Burn Site was submitted to the NMED on April 9, 2008.
- The Corrective Measures Evaluation Work Plan Burn Site Groundwater was also submitted to the NMED on April 9, 2008.

Tijeras Arroyo Groundwater

- Groundwater sampling was performed in April and will continue into May. Results will be reported in the SNL GWPP Annual Groundwater Monitoring Report.

Mixed Waste Landfill Groundwater

- Groundwater sampling was performed in April. Results from the 2008 MWL sampling events are reported in the next Mixed Waste Landfill Annual Groundwater Monitoring Report.
- The well completion report for the installation of groundwater monitoring well MWL-BW2, and the plug and abandoned groundwater monitoring well MWL-BW1 was submitted to NMED.

Chemical Waste Landfill Groundwater

- No groundwater sampling was performed this period.

Groundwater Documents submitted to the NMED pending regulatory review and approval:

- Technical Area V (TA-V) Groundwater (GW) Corrective Measure Evaluation (CME) Work Plan, submitted April 2004.
- Tijeras Arroyo GW (TAG) CME Work plan, submitted July 2004.
- Burn Site GW (BSGW) Interim Measures Work Plan (IMWP), submitted May 2005.
- Well Plug and Abandonment Plan, Decommissioning of Environmental Restoration Project Soil-Vapor Monitoring Wells, submitted December 2007.
- The Current Conceptual Model of Groundwater Flow and Contaminant Transport at Sandia National Laboratories/New Mexico Burn Site, submitted March 2008.
- The Corrective Measures Evaluation Work Plan Burn Site Groundwater, submitted March 2008.

2.4 Corrective Action Management Unit (CAMU)

CAMU Post-Closure Care Operations

- Vadose-zone monitoring, leachate removal, and post-closure inspections continued as required in the permit. Activities included the following:
 - Weekly pumping of leachate from the leachate collection and removal system.
 - Weekly inspection of the less-than-90-day area.
 - Quarterly inspection of the site (March), including containment cell cover, storm water diversion structures, security fences, gates, and signs. Approximately 20 four-wing saltbush plants were identified growing on the cover. These plants can develop extensive root systems that could damage the high-density polyethylene cover. They were removed on March 28, 2008.

- Quarterly monitoring of the VZMS was conducted in March. Results will be posted in the annual CAMU report.
- Waste management associated with the leachate collection was conducted (see below).
- Composite leachate sampling for waste characterization was conducted on March 4, 2008.

CAMU Waste Management Activities

- A calculation error was made in the November 2007 – January 2008 report for total gallons of leachate waste remaining on-site at the end of period. 63 gallons was reported when the actual total was 67 gallons.

For this Quarter (February 2008 – April 2008).

- Waste stored on site at the beginning of this period:
 - 67 gallons of leachate.
 - 5 lbs PPE.
- Waste generated on-site during the period:
 - 210 gallons of leachate.
 - 2 gallons of rinsate.
 - 16 lbs PPE, paper wipes, metal/glass flow meter.
- Waste removed from site by the Hazardous Waste Management Facility:
 - 155 gallons of leachate on March 10, 2008.
 - 2 gallons of rinsate on March 10, 2008.
 - 20 lbs PPE, paper wipes, plastic drum pump, metal/glass flow meter on March 10, 2008.
- Waste remaining on site at the end of this period:
 - 122 gallons of leachate.
 - 1 lb PPE.

CAMU Regulatory Activities

There were no regulatory activities during this quarter.

SECTION II. CHEMICAL WASTE LANDFILL QUARTERLY PROGRESS REPORT

This Sandia National Laboratories/New Mexico (SNL/NM) Chemical Waste Landfill (CWL) Quarterly Closure Progress Report has been prepared pursuant to the CWL Final Closure Plan and Post-closure Permit Application (Closure Plan) (SNL/NM December 1992). This section documents activities at the CWL for the time period of January through April 2008.

1.0 Introduction

All voluntary corrective measures (VCMs) activities for the CWL have been completed. The CWL LE VCM Final Report was submitted to the 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 VC 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 (ER) Project public meeting process.

Installation of the cover as an interim measure was requested in April 2004 (SNL/NM 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, with the exception of long-term monitoring, have been completed at the CWL.

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 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).

Upcoming CWL Closure Plan reporting activities include revising and submitting the Final Resource Conservation and Recovery Act (RCRA) Closure Report, to be submitted after NMED approval of the CMS Report has been received. The Final RCRA Closure Report will document both the backfilling of the former CWL and installation of the cover.

On May 21, 2007, the NMED issued, for public comment, the draft post-closure care permit for the CWL. Also included in the public notices were the Corrective Measures Study Report and the Closure Plan amendment (changes to Chapter 12 revising the closure process). On July 19, 2007, DOE and Sandia responded in opposition to the issuance of the CWL post-closure care permit as drafted and offered a number of comments, the most important of which were related to groundwater and vadose zone monitoring. In addition, DOE and Sandia requested that a public hearing be scheduled to address these outstanding issues.

3.0 Water Monitoring Assessment

No groundwater samples were collected during the period between January and April 2008. CWL semi-annual groundwater monitoring activities are tentatively scheduled to be completed in May and June 2008.

No soil-gas sampling was performed at the CWL during this reporting period. Soil-gas sampling is not required under the Closure Plan but is expected to be a requirement for post-closure care (Kieling, December 2003).

4.0 Projected Activities for the Upcoming Quarter

DOE and Sandia have requested a hearing on the CWL post-closure care permit, and it is anticipated that a resolution conference with the NMED will be arranged with the intent of resolving comments.

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), December 2003. Letter to K.L. Boardman (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Chemical Waste Landfill Corrective Measures Study, May 2003, Sandia National Laboratories, NM5890110518, HWB-SNL-03-013 " December 12, 2003.

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.

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), April 2004. "Request for Approval to Install the Vegetative Soil Cover Presented in the RAP as an Interim Measure," Sandia National Laboratories, Albuquerque, New Mexico. April 19, 2004.

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.

Section III: Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2008 (January, February, and March 2008)

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 (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 first quarter of Calendar Year 2008 (CY2008) in response to the requirements of the Order.

During the first quarter of CY2008, a groundwater sample was collected from CYN-MW6, the only well currently in the perchlorate-screening monitoring-well network. CYN-MW6 is one of the seven wells in the Burn Site Groundwater monitoring well network. CYN-MW6 was sampled on March 10, 2008, and the sample was submitted to General Engineering Laboratories (GEL) for perchlorate analysis using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999).

The environmental sample from CYN-MW6 revealed perchlorate at a concentration of 7.25 micrograms per liter ($\mu\text{g/L}$). 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, DOE/Sandia initiated a negotiation process with the NMED (SNL/NM March 2007) to determine the frequency of continued monitoring. DOE/Sandia will continue quarterly monitoring perchlorate concentrations in CYN-MW6 until a negotiated sampling schedule is finalized.

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Perchlorate Screening Quarterly Monitoring Report First Quarter of Calendar Year 2008 (January, February, and March 2008)

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 first quarter of Calendar Year 2008 (CY2008) 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 that 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. Per the letter report, quarterly reports will be submitted for wells actively in the perchlorate-screening monitoring-well network. Based on NMED response (NMED January 2006), DOE/Sandia will submit each quarterly report within 90 days following the quarter that the data represent. This quarterly report is the tenth to be submitted since the November 2005 letter report; the previous quarterly reports were submitted in:

1. Fourth Quarter of Calendar Year 2005 (SNL/NM February 2006),
2. First Quarter of Calendar Year 2006 (SNL/NM June 2006),
3. Second Quarter of Calendar Year 2006 (SNL/NM September 2006),
4. Third Quarter of Calendar Year 2006 (SNL/NM December 2006),
5. Fourth Quarter of Calendar Year 2006 (SNL/NM March 2007),
6. First Quarter of Calendar Year 2007 (SNL/NM June 2007),
7. Second Quarter of Calendar Year 2007 (SNL/NM September 2007),
8. Third Quarter of Calendar Year 2007 (SNL/NM December 2007), and
9. Fourth Quarter of Calendar Year 2007 (SNL/NM March 2008).

Because perchlorate concentrations in monitoring well CYN-MW6 (in the Burn Site Groundwater study area) have exceeded the screening level, and because this well had completed the required minimum four quarters of sampling, DOE/Sandia initiated a negotiation process with the NMED (SNL/NM March 2007) to determine the frequency of continued perchlorate monitoring. DOE/Sandia will continue quarterly monitoring perchlorate concentrations in CYN-MW6 until a negotiated sampling schedule is finalized. Recently installed groundwater monitoring well MWL-BW2 (in the Mixed Waste Landfill study area) will be added to the perchlorate screening monitoring well network for a minimum of four quarters. Reporting will continue as long as a groundwater monitoring well remains in the perchlorate-screening monitoring well network unless negotiated otherwise with NMED.

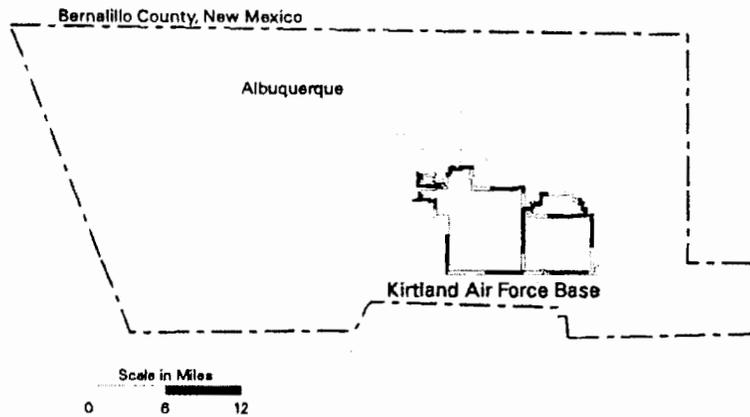
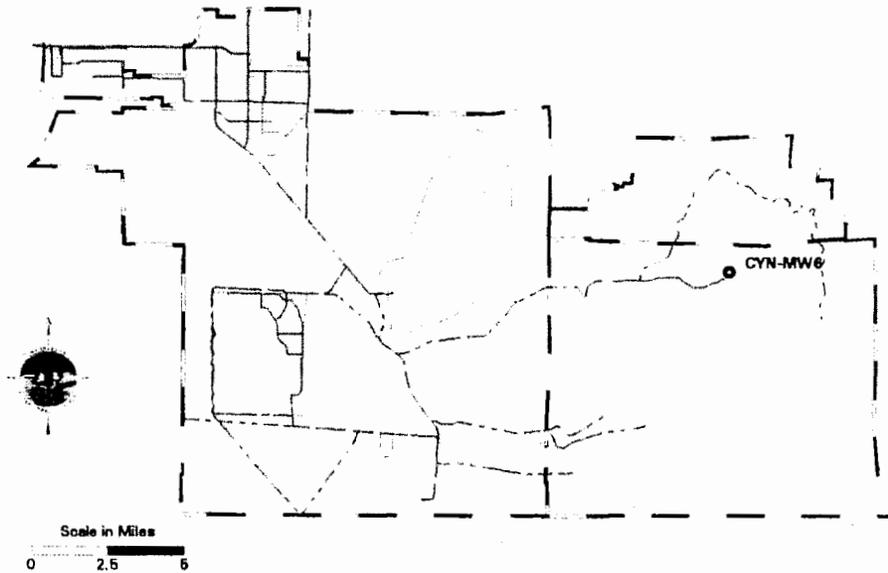
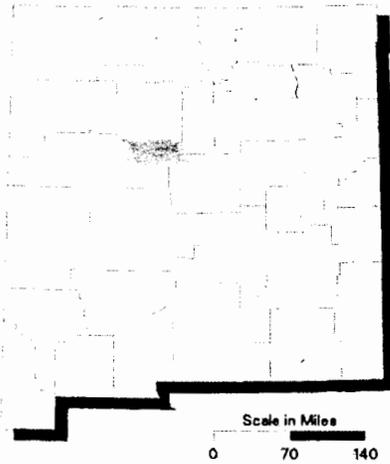


Figure 1
Sandia National Laboratories
New Mexico
Current Perchlorate-Screening
Monitoring-Well Network
(Jan/Feb/Mar 2008)

Bernalillo County, New Mexico



2.0 Scope of Activities

This report provides perchlorate screening results from the first quarter of CY2008 (January, February, and March 2008) for the one well currently active in the perchlorate screening program as shown on Figure 1 and listed in Table 1. Per the requirements of Table XI-1 of the Order, a well with four consecutive quarters of non-detect results 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 several wells identified in the Order have satisfied this requirement and, 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: CYN-MW1D, CYN-MW5, CYN-MW7, CYN-MW8, MRN-2, MRN-3D, MWL-BW1, MWL-MW1, NWT A3-MW2, and SWTA3-MW4.

Table 1
Current Perchlorate-Screening Monitoring-Well Network
First Quarter of CY2008 (January, February, and March)

Well	Date Sampled	Number of Consecutive Sampling Events ^a	Remaining Number of Sampling Events ^b	Sampling Method
CYN-MW6	10-MAR-08	9	TBD ^c	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 $\mu\text{g/L}$. 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 initiated the negotiation process with the NMED to determine the frequency of continued monitoring. DOE/Sandia will continue quarterly monitoring perchlorate concentrations in CYN-MW6 until a negotiated sampling schedule is finalized.

DOE/Sandia performed groundwater sampling at CYN-MW6 on March 10, 2008. This well was installed after the Order was finalized and is required to be sampled for perchlorate as a "new" well. Groundwater sampling activities were conducted in conformance with procedures outlined in the investigation-specific sampling and analysis plan (SAP) entitled, "Burn Site Groundwater Monitoring, Mini-SAP for Second Quarter Fiscal Year 2008" (SNL/NM January 2008).

As described in the Mini-SAP, groundwater sampling was performed in conformance with current Sandia Environmental Management, Long Term Environmental Stewardship (LTES) Project field operating procedures (FOPs). A portable Bennett™ groundwater sampling system was used to collect the groundwater sample. 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 October 2005a). The well was 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 October 2005b).

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 was considered acceptable when measurements were within 10 percent or less than 5 nephelometric turbidity units for turbidity, 0.1 pH units, 1.0 degree Celsius, and SC within 5 percent. Field Measurement Logs documenting details of well purging and water quality measurements were submitted to the Sandia Customer-Funded Records Center.

The groundwater sample was submitted to General Engineering Laboratories (GEL) for chemical analysis for perchlorate using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999). The sample identification, Analysis Request/Chain-of-Custody (AR/COC) form number, and the sample shipment date are provided in Table 2. The analytical report from GEL, including certificates of analyses (COA), analytical methods, MDLs, practical quantitation limits (PQLs), dates of analyses, results of QC analyses, and data validation findings have been submitted to the Sandia Customer-Funded Records Center. The COA is also included in Appendix A.

Table 2
Sample Details for First Quarter of CY2008 Perchlorate Sampling

Well	Sample Identification	AR/COC Number	Date Shipped
CYN-MW6	085661-020	611749	11-MAR-08

Notes:
ARCOOC = Analysis request and chain of custody.

3.0 Regulatory Criteria

In a given monitoring well, four consecutive non-detects (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 above the screening level/MDL in a specific well, monitoring will continue at that well at a frequency negotiated with the NMED. The Order (NMED April 2004) also requires that the DOE/Sandia 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) which recommended further characterization through continued quarterly monitoring of CYN-MW6 for four additional quarters, including for perchlorate, ending in December 2007, to assure appropriate characterization of this well. In January 2008, DOE/Sandia requested a meeting with NMED to discuss the need for continued monitoring or additional characterization work, and potentially, a CME.

To show that the requirement "to determine the nature and extent of contamination" (NMED March 2007) has been met, DOE/Sandia provided supporting information in the last quarterly report (SNL/NM March 2008). Perchlorate in surface soils has been characterized at Solid Waste Management Units (SWMUs) in the study area (SNL/NM June 2006; SNL/NM March 2008--Appendix C). In addition, 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 non-detect for perchlorate (SNL/NM March 2008--Appendix D).

Per 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. The maximum concentration of perchlorate in CYN-MW6 to date (8.93 $\mu\text{g/L}$) was used in the assessment. The calculated hazard quotient (HQ) of 0.35 is less than the NMED target level of a Hazard Index (the sum of all HQs) of 1.0 (NMED June 2006) (SNL/NM March 2008--Appendix E).

4.0 Monitoring Results

Table 3 summarizes current and historical perchlorate results for CYN-MW6. The analytical laboratory COA for the first quarter CY2008 perchlorate data is included as Appendix A. Consistent with historical analytical results, perchlorate was detected above the screening level/MDL in the first quarter of CY2008 in CYN-MW6.

As shown in Figure 2, the concentration of perchlorate found in CYN-MW6 in March 2008 (7.25 $\mu\text{g/L}$) is consistent with concentrations from previous quarters (SNL/NM May 2006, SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, SNL/NM March 2007, SNL/NM June 2007, SNL/NM September 2007, SNL/NM December 2007, and SNL/NM March 2008).

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 AOP 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 the qualification of the data as unusable. The data are acceptable and reported quality control 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 Burn Site Groundwater Monitoring mini-SAP (SNL/NM January 2008) were identified during the first quarter CY2008 sampling activities.

5.0 Summary and Conclusions

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

- Since June 2004 (the start of sampling required by the Order), perchlorate has only been detected above the screening level/MDL in one of the wells (CYN-MW6) in the perchlorate-screening monitoring-well network. Due to the detection of perchlorate in the samples from CYN-MW6 in March 2006, DOE/Sandia submitted the "Notification of Release, Perchlorate at Well CYN-MW6, May 2006" (SNL/NM May 2006) to the NMED. DOE and Sandia were required to notify the NMED of the discovery of a previously unknown release under Section V of the Order (NMED April 2004).
- The concentration from this sampling event (7.25 µg/L) is consistent with the concentrations reported since the inception of sampling for perchlorate at CYN-MW6 in March 2006 (Figure 2) (SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, SNL/NM March 2007, SNL/NM June 2007, SNL/NM September 2007, SNL/NM December 2007, and SNL/NM March 2008).
- As discussed in the previous quarterly reports (SNL/NM June 2006, SNL/NM September 2006), the source for the perchlorate in the groundwater at CYN-MW6 is unknown. Soil sampling completed in 2001 at SWMU 65—Lurance Canyon Explosives Test Site, or SWMU 94—Lurance Canyon Burn Site did not reveal detectable concentrations of perchlorate in site soils (NMED January 2001; Skelly and Griffith January 2003; and SNL/NM June 2006).
- 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 non-detect for perchlorate (SNL/NM March 2008).

**Table 3
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring-Well Network, as of First Quarter CY2008.**

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-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	
	27-Jun-07	611399	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	
12-Sep-07	611581	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		
18-Dec-07	611668	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		

Refer to notes on next page.

Table 3 (concluded)
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring-Well Network, as of First Quarter CY2008.

Notes—

CYN-MW6 was installed in January 2006; this table presents all quarterly data collected at this well.

^aResult

Values in **bold** exceed the screening level/MDL.

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 that 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 (20MAC 7.1).

NE = not established.

^eLab Qualifier

H = Analytical holding time was exceeded.

h = Prep holding time was exceeded.

J = Amount detected is below the practical quantitation limit.

^fValidation 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.

^gAnalytical 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

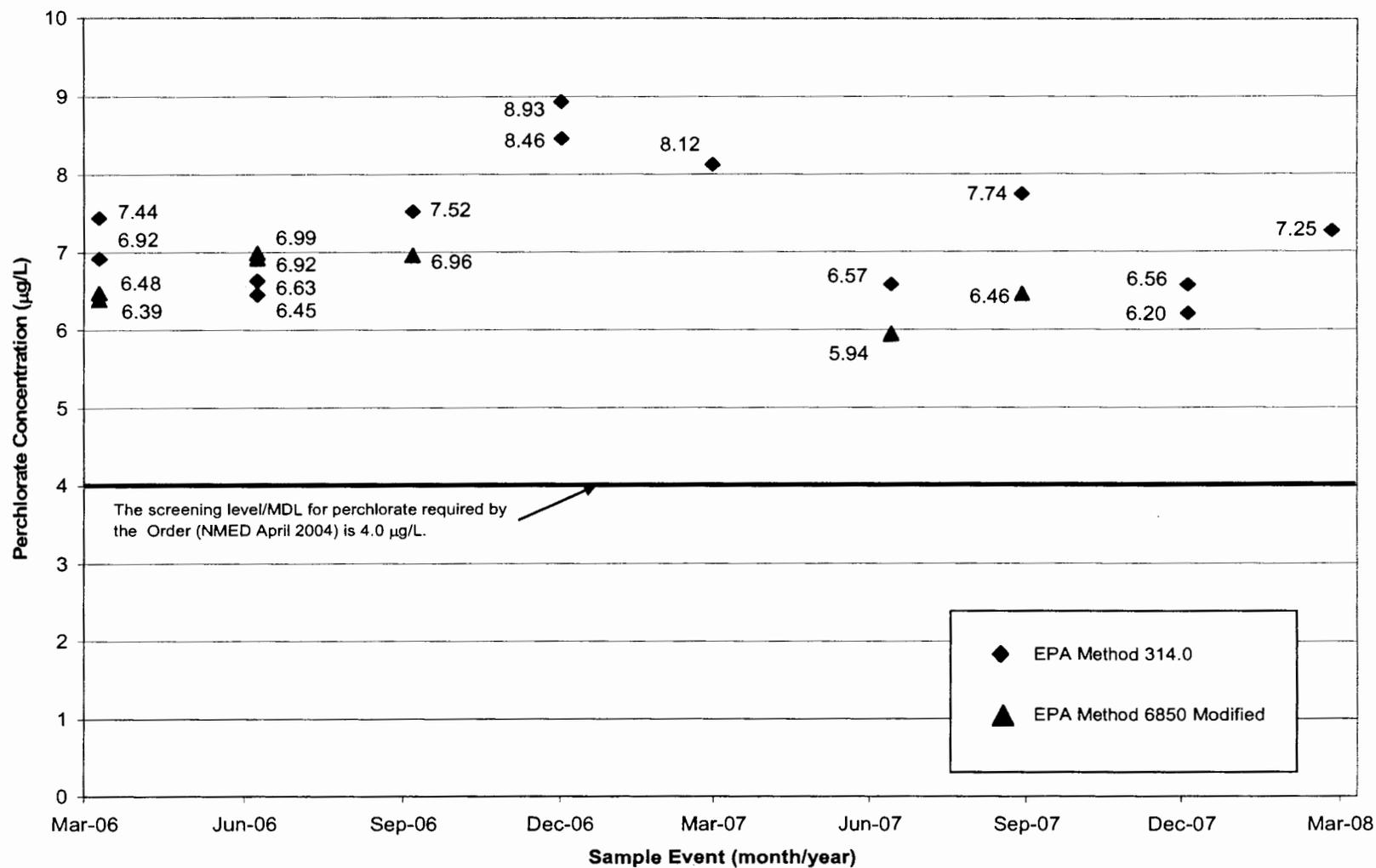


Table 4
Perchlorate Screening Groundwater Monitoring
Field Water Quality Measurements^a, First Quarter of CY2008

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	10-Mar-08	17.24	1094	289.7	7.02	0.67	20.0	1.91

Notes:

- ^aField measurements made 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).

- 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. The maximum concentration of perchlorate in 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 a Hazard Index (the sum of all HQs) of 1.0 (NMED June 2006 and SNL/NM March 2008).

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. DOE/Sandia will continue quarterly monitoring of perchlorate in CYN-MW6 until a negotiated sampling schedule is finalized. In January 2008, DOE/Sandia requested a meeting with NMED to discuss the need for continued monitoring or additional characterization work, and potentially, a CME.

6.0 References

EPA (see US Environmental Protection Agency).

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Appendix A

Analytical Laboratory Certificate of Analysis for the Perchlorate Data

**CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY**

Internal Lab

Batch No. *N/A*

SMO Use

AR/COC

611749

Dept. No./Mail Stop: 6765/1089	Date Samples Shipped: 3-11-08	Project/Task No. 121515.02.01	<input type="checkbox"/> Waste Characterization
Project/Task Manager: Paul Freshour	Carrier/Waybill No. 87485	SMO Authorization: <i>[Signature]</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	<i>SUBBOTTLE ORDER</i>	<input checked="" type="checkbox"/> Validation Required
Logbook Ref. No.: ER 058	SMO Contact/Phone: Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable)
Service Order No: CF#058-08	Send Report to SMO: Lorraine Herrera/505-844-3199		P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time (hr) Collected	Sample Matrix	Container		Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
						Type	Volume					
085661-001	CYN-MW6	163	<i>N/A</i>	031008/1333	GW	G	3x40 ml	HCL	G	SA	VOC (SW846-8260)	001
085661-002	CYN-MW6	163		031008/1334	GW	AG	3x1 L	4C	G	SA	SVOC (SW846-8270)	002
085661-005	CYN-MW6	163		031008/1335	GW	AG	4x1 L	4C	G	SA	TPH Diesel (SW846-8015)	003
085661-006	CYN-MW6	163		031008/1336	GW	G	3x40 ml	HCL	G	SA	TPH Gasoline (SW846-8015)	004
085661-016	CYN-MW6	163		031008/1337	GW	P	250 ml	4C	G	SA	Major Anions (SW846-9056)	005
085661-017	CYN-MW6	163		031008/1338	FGW	P	500 ml	HNO3	G	SA	Major Cations (Sw846-6020)	006
085661-018	CYN-MW6	163		031008/1339	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	007
085661-020	CYN-MW6	163		031008/1340	GW	P	500 ml	4C	G	SA	Perchlorate (314.0)	008
085662-001	CYN-TB1	NA		031008/1333	DIW	G	3x40 ml	HCL	G	TB	VOC (SW846-8260)	009

RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Ref. No.	Sample Tracking	Smo Use	Special Instructions/QC Requirements	Abnormal Conditions on Receipt															
Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab	Date Entered (mm/dd/yy)	Entered by:	Level D Package <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	*Send report to:																
Turnaround Time <input type="checkbox"/> 7 Day <input type="checkbox"/> 15 Day <input checked="" type="checkbox"/> 30 Day	Return Samples By: <input type="checkbox"/> Negotiated TAT <input type="checkbox"/> QC inits.		*Tim Jackson/Org. 4133/MS 1089/505-284-2547																	
Sample Team Members	<table border="1"> <thead> <tr> <th>Name</th> <th>Signature</th> <th>Inlt</th> <th>Company/Organization/Phone/Cellular</th> </tr> </thead> <tbody> <tr> <td>William J Gibson</td> <td><i>[Signature]</i></td> <td><i>[Initials]</i></td> <td>Weston/4133/284-5232/239-7367</td> </tr> <tr> <td>Robert Lynch</td> <td><i>[Signature]</i></td> <td><i>[Initials]</i></td> <td>Weston/4133/844-4013/250-7090</td> </tr> <tr> <td>Alfred Santillanes</td> <td><i>[Signature]</i></td> <td><i>[Initials]</i></td> <td>Weston/4133/844-5130/228-0710</td> </tr> </tbody> </table>		Name	Signature		Inlt	Company/Organization/Phone/Cellular	William J Gibson	<i>[Signature]</i>	<i>[Initials]</i>	Weston/4133/284-5232/239-7367	Robert Lynch	<i>[Signature]</i>	<i>[Initials]</i>	Weston/4133/844-4013/250-7090	Alfred Santillanes	<i>[Signature]</i>	<i>[Initials]</i>	Weston/4133/844-5130/228-0710	*Please list as separate report.
Name	Signature	Inlt	Company/Organization/Phone/Cellular																	
William J Gibson	<i>[Signature]</i>	<i>[Initials]</i>	Weston/4133/284-5232/239-7367																	
Robert Lynch	<i>[Signature]</i>	<i>[Initials]</i>	Weston/4133/844-4013/250-7090																	
Alfred Santillanes	<i>[Signature]</i>	<i>[Initials]</i>	Weston/4133/844-5130/228-0710																	

1. Relinquished by <i>[Signature]</i> Org. 4133 Date 3-10-08 Time 1540	4. Relinquished by	Org.	Date	Time
1. Received by <i>[Signature]</i> Org. 4133 Date 3-10-08 Time 1540	4. Received by	Org.	Date	Time
2. Relinquished by <i>[Signature]</i> Org. 4133 Date 3-11-08 Time 0745	5. Relinquished by	Org.	Date	Time
2. Received by <i>[Signature]</i> Org. Date 3-12-08 Time 0852	5. Received by	Org.	Date	Time
3. Relinquished by	6. Relinquished by	Org.	Date	Time
3. Received by	6. Received by	Org.	Date	Time

5

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: March 27, 2008

Client Sample ID: 085661-020
Sample ID: 204493008
Matrix: Aqueous
Collect Date: 10-MAR-08 13:40
Receive Date: 12-MAR-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: CYN-MW6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal											
<i>EPA 314.0 Perchlorate by IC</i>											
Perchlorate	J	0.00725	0.004	0.012	mg/L	1	MAR103/18/08	1203	735472	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**

Analytical Quality Associates, Inc.

616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: April 21, 2008
TO: File
FROM: David Schwent
SUBJECT: General Chemistry Data Review and Validation - SNL
Site: Burn Site GWM (LTS)
AR/COC: 611748 and 611749
SDG: 204493
Laboratory: GEL
Project/Task No: 121515.02.01

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 EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), and EPA9056 (anions). Problems were identified with the data package that result in the qualification of data.

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the method blank (MB) at a concentrations > the method detection limit (MDL) but < the practical quantitation limit (PQL). The associated result of sample 204493-012 was a detect <5X the MB concentration and will be qualified "0.067U,B" at 5X the value of the MB.

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 as noted above in the summary section and the following. Nitrate/nitrite was detected in the continuing calibration blank (CCB)

analyzed on 3-13-08 and in the MB at concentrations > the MDL but < the PQL. However, the associated result of sample 204493-007 was a detect >5X the CCB and MB concentrations and will not be qualified.

Anions Analysis: No target analytes were detected in the blanks, except the following. Sulfate were detected in the initial calibration blank (ICB) and CCB at concentrations > the MDL but < the PQL. However, the associated result of sample 204493-005 was a detect >5X the highest calibration blank concentration and will not be qualified.

Perchlorate Analysis: No target analytes were detected in the blanks.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 204493-007 was diluted 25X for nitrate/nitrite due to high concentration of the target analyte, sample -012 was diluted 5X for nitrate/nitrite due to matrix interference, and sample -005 was diluted 10X for chloride and sulfate due to high concentrations of the target analytes. All associated batch QC samples were diluted 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. No other samples required dilution.

Other QC

No equipment blanks (EBs), field blanks (FBs), or field duplicates (FDs) were submitted on the AR/COCs.

No other specific issues were identified which affect data quality.

