



DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

EMLA-2021-0181-02-001

March 25, 2021

Mr. Kevin Pierard
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: Monthly Notification of Groundwater Data Reviewed in March 2021

Dear Mr. Pierard:

This letter is the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) written submission in accordance with Section XXVI.D of the 2016 Compliance Order on Consent (2016 Consent Order). Members of EM-LA and N3B met on March 11, 2021, to review groundwater data loaded or released in the Environmental Information Management System (EIM) during the previous calendar month. The enclosed report was prepared by comparing the data against groundwater notification criteria as defined in Section IX of the 2016 Consent Order. These criteria consider New Mexico Water Quality Control Commission (NMWQCC) groundwater standards, U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), New Mexico Environment Department (NMED) screening levels for tap water, EPA regional screening levels for tap water, and NMED-approved background values for hydrogeological zones as set forth in the "Groundwater Background Investigation Report, Revision 5." The EPA tap water standard's carcinogenic risk values were adjusted to 1×10^{-5} , as specified in the 2016 Consent Order.

The enclosed report was prepared using the November 2020 EPA regional screening levels for tap water; the NMWQCC groundwater standards published December 21, 2018; and the June 2019 Table A-1 of "Risk Assessment Guidance for Site Investigations and Remediation" for NMED tap water screening levels.

This report also includes analytical data from samples collected at locations within the Pueblo de San Ildefonso, which are subject to reporting at this time. These data have been reviewed by the Pueblo, as required under the Memorandum of Agreement dated May 28, 2014, between the DOE National Nuclear Security Administration Los Alamos Field Office and the Pueblo de San Ildefonso.

1-Day Notification

One-day notification was not required because there were no cases of a contaminant detected in a well screen interval or spring at a concentration that exceeded a water quality standard for the first time. There were no instances of a contaminant detected at a concentration that exceeded the NMWQCC groundwater standard or federal MCL at locations where contaminants have not previously been detected above the respective standard as defined in the 2016 Consent Order (based on samples collected since June 14, 2007).

Previous Monthly Notifications – Qualified Tin Results

The December 2020 and January 2021 letters reported two tin results that have been updated following the conclusion of a Level 3 data validation. In those letters, both were reported using results from the inductively coupled plasma–atomic emission spectroscopy (ICP-AES), which is the routine EM-LA laboratory method employed for reporting tin results. As part of a larger metals suite, tin is also routinely analyzed concurrently using a secondary method, inductively coupled plasma–mass spectrometry (ICP-MS). In this case, the data validation identified an issue with the ICP-AES instrument tin calibration during the timeframe, resulting in the rejection of ICP-AES results. The results using the secondary method (ICP-MS) have been loaded into EIM as the best-value results to replace the rejected data. Specifically, the two previously reported results that have been updated include the following:

- The October 21, 2020, sample at R-20 screen 1 initially reported as 16.4 µg/L under the XC2scr category has been updated to the ICP-MS result of 1.01 µg/L.
- The December 3, 2020, sample at R-70 screen 2 initially reported as 17.3 µg/L under the XC2scr category has been updated to a nondetection (i.e., < 1 µg/L) result under the ICP-MS method.

Neither of the updated results now qualifies within the XC2scr category (as described in the accompanying summary section).

15-Day Notification

The information required for constituents that meet the five reporting criteria requiring written notification within 15 days is provided in the accompanying report and tables.

If you have questions, please contact Steve Veenis at (505) 309-1362 (steve.veenis@em-la.doe.gov) or Hai Shen at (505) 257-7943 (hai.shen@em.doe.gov).

Sincerely,

Arturo Q. Duran

Digitally signed by Arturo Q.
Duran
Date: 2021.03.22 14:12:21
-06'00'

Arturo Q. Duran
Compliance and Permitting Manager
Environmental Management
Los Alamos Field Office

Enclosures:

1. Summary of Groundwater Data Reviewed in March 2021 That Meet Notification Requirements (EM2021-0183)

CC (letter with CD/DVD enclosure[s]):
 Harry Burgess, Los Alamos County, Los Alamos, NM (2 copies)

CC (letter and enclosure[s] emailed):
 Laurie King, EPA Region 6, Dallas, TX
 Raymond Martinez, San Ildefonso Pueblo, NM
 Dino Chavarria, Santa Clara Pueblo, NM
 David Gomez, Los Alamos County, Los Alamos, NM
 Chris Catechis, NMED-DOE-OB
 Steve Yanicak, NMED-DOE-OB
 Michelle Hunter, NMED-SWQB
 Steve Pullen, NMED-SWQB
 Andrew C. Romero, NMED-SWQB
 Melanie Sandoval, NMED-SWQB
 Jocelyn Buckley, LANL
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 Jennifer Payne, LANL
 Enrique Torres, LANL
 Felicia Aguilar, N3B
 William Alexander, N3B
 Emily Day, N3B
 Mei Ding, N3B
 Zoe Duran, N3B
 Jeff Holland, N3B
 Danny Katzman, N3B
 Kim Lebak, N3B
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 Pamela Maestas, N3B
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 Public Reading Room (EPRR)
 PRS website

Pamela T. Maestas

From: Martinez, Cynthia, NMENV <cynthia.martinez1@state.nm.us>
Sent: Thursday, March 25, 2021 12:12 PM
To: Pamela T. Maestas
Subject: RE: Submittal to NMED on 3/25/2021 of Monthly GW Data Review for March

Hello,
Received...thank you.

From: Pamela T. Maestas <pamela.maestas@em-la.doe.gov>
Sent: Thursday, March 25, 2021 11:04 AM
To: Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>
Cc: Dhawan, Neelam, NMENV <neelam.dhawan@state.nm.us>; Briley, Siona, NMENV <Siona.Briley@state.nm.us>; Catechis, Chris, NMENV <Chris.Catechis@state.nm.us>; Krambis, Christopher, NMENV <Christopher.Krambis@state.nm.us>; Martinez, Cynthia, NMENV <cynthia.martinez1@state.nm.us>; Emily M. Day <Emily.Day@em-la.doe.gov>; Regulatory Documentation <RegDocs@EM-LA.DOE.GOV>; Brinson Willis <Brinson.Willis@em-la.doe.gov>; Zoe A. Duran <zoe.duran@em-la.doe.gov>
Subject: [EXT] Submittal to NMED on 3/25/2021 of Monthly GW Data Review for March

Mr. Pierard,
Attached for submittal is a pdf of the following:

- Monthly Notification of Groundwater Data Reviewed in March 2021 (EMLA-2021-0181-02-001, letter and enclosure)

Please acknowledge receipt of this submittal by responding to this email.
Let me know if you have any questions.
Thank you.

Pamela T. Maestas
Regulatory Documentation Manager
Newport News Nuclear BWXT-Los Alamos, LLC
c. 505-927-7882
regdocs@em-la.doe.gov



1200 Trinity Drive, Suite 150
Los Alamos, NM 87544

SUMMARY OF GROUNDWATER DATA REVIEWED IN MARCH 2021 THAT MEET NOTIFICATION REQUIREMENTS

INTRODUCTION

This report provides information to the New Mexico Environment Department (NMED) concerning recent groundwater monitoring data obtained by Newport News Nuclear BWXT-Los Alamos, LLC (N3B) under the annual “Interim Facility-Wide Groundwater Monitoring Plan” for the 2021 monitoring year and contains results for contaminants and other chemical constituents that meet the five screening criteria described in Section XXVI of the 2016 Compliance Order on Consent, modified February 2017 (2016 Consent Order). The report covers groundwater samples collected from wells or springs (listed in the accompanying tables) that provide surveillance of the hydrogeological zones at Los Alamos National Laboratory, as indicated in the tables.

The report includes two tables. Table 1, NMED 02-2021 Groundwater Report, presents categorical results since June 14, 2007, that met the five reporting criteria as specified in the 2016 Consent Order. Table 2, NMED 02-2021 Groundwater Report Addendum, presents results that exceed the 95th percentile of those results in the data set defined in the “Groundwater Background Investigation Report, Revision 5.” Only the contaminants and other chemical constituents that lack a calculated groundwater background value (i.e., the frequency of detections was too low to calculate a background value at the 95% upper tolerance level) are listed in this table. Table 2 is a voluntary submission by N3B to NMED that identifies the potential risk resulting from contaminants and other chemical constituents that are without defined background values.

These tables include the following:

- Comments on results that appear to be exceptional based on consideration of monitoring data acquired from previous analyses (using statistics described below);
- Supplemental information summarizing monitoring results obtained from previous analyses; and
- Sampling date, name of the well or spring, location of the well or spring, depth of the screened interval, groundwater zone sampled, analytical result, detection limit, values for regulatory standards or screening levels, and analytical and secondary validation qualifiers.

Additional information describing the locations and analytical data is also included. All data have been through secondary validation.

This report was prepared by comparing the data against groundwater notification criteria as defined in Section IX of the 2016 Consent Order. These criteria consider New Mexico Water Quality Control Commission (NMWQCC) groundwater standards, U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), NMED screening levels for tap water, EPA regional screening levels for tap water, and NMED-approved background values for hydrogeological zones as set forth in the “Groundwater Background Investigation Report, Revision 5.” The EPA tap water standard’s carcinogenic risk values were adjusted to 1×10^{-5} , as specified in the 2016 Consent Order. This report was prepared using the November 2020 EPA regional screening levels for tap water; the NMWQCC groundwater standards published December 21, 2018; and the NMED tap water screening levels specified in the June 2019 Table A-1 of “Risk Assessment Guidance for Site Investigations and Remediation.”

Background values applied in Table 1 notification criterion C4 are the background values for hydrogeological zones as set forth in the NMED-approved “Groundwater Background Investigation Report, Revision 5.”

Screening values applied in Table 2 criteria XC2scr and XC4scr are the 95th percentile of the data set used to establish background as defined in the “Groundwater Background Investigation Report, Revision 5.”

DESCRIPTION OF TABLES

1-Day Notification Requirement

The CA value is used in the Criteria Code column of Table 1. The CA value indicates detection of a contaminant in a well screen interval or spring at a concentration that exceeds either the NMWQCC water quality standard or the EPA MCL if that contaminant has not previously exceeded such a water quality standard at that location. N3B, under the U.S. Department of Energy Environmental Management Los Alamos Field Office, notifies NMED orally within 1 business day after review of such analytical data and also includes the data in the 15-day notification table.

15-Day Notification Requirement

Table 1 is divided into separate categories that correspond to the five screening criteria in Section XXVI of the 2016 Consent Order. In several cases, data met more than one of the notification criteria and therefore appear in the table multiple times.

The criteria codes (the “C” stands for criterion) and their definitions are as follows:

- C1. Detection of a contaminant that is an organic compound in a spring or screened interval of a well if that contaminant has not previously been detected in the spring or screened interval
- C2. Detection of a contaminant that is a metal or other inorganic compound at a concentration above the background level in a spring or screened interval of a well if that contaminant has not previously exceeded the background level in the spring or screened interval
- C3. Detection of a contaminant in a spring or screened interval of a well at a concentration that (1) exceeds the lower of either one-half the NMWQCC water quality standard or one-half the federal MCL; or, if there is no such standard for the contaminant, (2) exceeds one-half the tap water screening levels in Table A-1 of NMED's “Risk Assessment Guidance for Site Investigations and Remediation” (June 2019); or, if there is no NMED tap water screening level available for a contaminant, (3) exceeds one-half the EPA regional human health medium-specific screening level for tap water if that contaminant has not previously exceeded one-half such standard or screening level in the spring or screened interval
- C4. Detection of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that exceeds 2 times the background level for the third consecutive sampling of the spring or screened interval
- C5. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the NMWQCC water quality standard or one-half the federal MCL and which has increased for the third consecutive sampling of that spring or screened interval

Table 2 is divided into two categories that correspond to two screening criteria. They mirror criteria C2 and C4 in Table 1, respectively.

The two criteria are as follows:

XC2scr Detection of a contaminant that is a metal or other inorganic compound at a concentration above the 95th percentile in a spring or screened interval of a well if that contaminant has not previously exceeded the 95th percentile of the data set used to establish background in the spring or screened interval as defined in the “Groundwater Background Investigation Report, Revision 5”

XC4scr Detection of a contaminant that is a metal or other inorganic compound in a spring or screened interval of a well at a concentration that for the third consecutive sampling exceeds 2 times the 95th percentile of the data set used to establish background as defined in the “Groundwater Background Investigation Report, Revision 5”

Columns 2 through 8 in both tables provide summary statistics for metals or organic/inorganic compounds by field preparation code (e.g., filtered aluminum) for samples collected since January 1, 2000, including the currently reported data. The statistics include the date of the first sampling event; the number of sampling events and samples analyzed; the number of detections; and the minimum, maximum, and median concentration for detections. This information indicates whether the new result is consistent with the range of earlier data.

The subsequent columns contain location and sampling information as follows:

Canyon—canyon where monitoring location is found

Zone—hydrogeological zone from which the groundwater sample was collected (e.g., alluvial spring)

Location—monitoring location name

Screen Depth—depth of top of well screen in feet (0 for springs, -1 if unknown)

Start Date—date the sample was collected

Fld QC Type Code—identifies regular samples (REG) or field duplicates (FD)

Fld Prep Code—identifies whether samples are filtered (F) or unfiltered (UF)

Lab Sample Type Code—indicates whether result is a primary sample (INIT) or reanalysis (RE)

Anyl Suite Code—analytical suite (such as volatile organic compounds) for analyzed compound

Analyte Desc—name of analyte

Analyte—chemical symbol for analyte or CAS (Chemical Abstracts Service) number for organic compounds

Std Result—analytical result in standard measurement units

Result/Median—ratio of the Std Result to the median of all detections since 2000

LVL Type/Risk Code—type of regulatory standard, screening level, or background value (indicating groundwater zone) used for comparison

Screen Level—value of the LVL Type/Risk Code

Exceedance Ratio—ratio of Std Result to LVL Type/Risk Code. In earlier versions of this report, the ratio was divided by the basis for comparison in the criterion, but that is no longer the case. For example, for a criterion (such as C3) that compares the value with one-half the standard, a value equal to a standard previously had an exceedance ratio of 2. The current report shows this ratio as 1.

Std MDL—method detection limit in standard measurement units

Std UOM—standard units of measurement

Dilution Factor—amount by which the sample was diluted to measure the concentration

Lab Qualifier—analytical laboratory qualifier indicating analytical quality of the sample data

Validation Qualifier—the qualifier that indicates the effects of all processes associated with the sample (i.e., sample collection, additional quality control samples such as field duplicates, etc.) on the quality of the sample data

Validation Reason Code—an explanation of the reason for validation of the qualifiers

Anyl Meth Code—analytical method number

Lab Code—analytical laboratory name

Comment—N3B comment regarding the analytical result

Acronyms and Abbreviations

The tables may include the following acronyms, abbreviations, and analytical laboratory codes and qualifiers:

DOECAP—Department of Energy Consolidated Audit Program

DNX—hexahydro-1,3-dinitro-5-nitro-1,3,5-triazine

EPA MCL—U.S. Environmental Protection Agency maximum contaminant level

GENINORG—General inorganic

HEXP—high explosive

HMX—octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

HRMS—high-resolution mass spectrometry

ICP-AES—inductively coupled plasma atomic emission spectroscopy

ICP-MS—inductively coupled plasma mass spectrometry

LANL Int BG LV—Los Alamos National Laboratory intermediate background level

LANL Reg BG LV—Los Alamos National Laboratory regional background level

LCMS/MS—liquid chromatography mass spectrometry/mass spectrometry

LCS—laboratory control sample

MDL—method detection limit

MNX—hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine

MS—matrix spike

MSD—matrix spike duplicate

n/a—not applicable

NM GW STD—New Mexico Water Quality Control Commission groundwater standard

NMED A1 TAP SCRNLVL—New Mexico Environment Department screening level for tap water

NTU—nephelometric turbidity unit

PETN—pentaerythritol tetranitrate

PFAS—per- and polyfluoroalkyl substances

PQL—practical quantitation limit

RDX—Royal Demolition Explosive (hexahydro-1,3,5-trinitro-1,3,5-triazine)

SIM—selected ion monitoring

SVOC—semivolatile organic compound

TDS—total dissolved solids

TNX—2,4,6-trinitroxylylene

UAL—upper acceptance limit

UOM—unit of measurement

VOC—volatile organic compound

Analytical Laboratory Codes and Qualifiers

* (lab qualifier) - (inorganic)—Duplicate analysis (relative percent difference) is not within control limits.

CFA—Cape Fear Analytical, LLC

BJ (lab qualifier)—Analyte is present in the blank, and the associated numerical value is an estimated quantity.

F—filtered

FD—field duplicate

GELC—GEL Laboratories, LLC, Division of the GEL Group, Charleston, SC

GENINORG—general inorganic

H (lab qualifier)—The required extraction or analysis holding time for this result was exceeded.

HE1a (validation reason code)—The quantitating internal standard area count was below the lower acceptance limit.

HE12a (validation reason code)—The LCS %recovery was less than the lower acceptance limit but greater than 10%.

HJ (lab qualifier)—The required extraction or analysis holding time for this result was exceeded. The associated numerical value is an estimated quantity.

I4a (validation reason code)—The affected analyte is considered estimated and biased high because this analyte was identified in the method blank but was greater than 5 times the concentration of the affected analyte in the sample.

I6b (validation reason code)—The associated matrix spike recovery was above the UAL. Follow the external laboratory limits located within the associated data package.

I9b (validation reason code)—The affected analytes are regarded as rejected because the analytical holding time was exceeded.

INIT—primary sample

J (lab qualifier)—The associated numerical value is an estimated quantity.

J (validation qualifier)—The analyte is classified as detected, but the reported concentration value is expected to be more uncertain than usual.

J- (validation qualifier)—The analyte is classified as detected, but the reported concentration value is expected to be more uncertain than usual with a potential negative bias.

J+ (validation qualifier)—The analyte is classified as detected, but the reported concentration value is expected to be more uncertain than usual with a potential positive bias.

J_LAB (validation reason code)—The analytical laboratory qualified the detected result as estimated (J) because the result was less than the PQL but greater than the MDL.

N (lab qualifier)—Spiked sample recovery is not within control limits.

NQ (validation qualifier)—No validation qualifier flag is associated with this result, and the analyte is classified as detected.

NQ (validation reason code)—The analytical laboratory did not qualify the analyte as not detected and/or with any other standard qualifier. The analyte is detected in the sample.

PE12e (validation reason code)—The MS/MSD percent recovery was >10% but <75%.

RE—reanalysis

REG—regular sample

SV7c (validation reason code)—The percent drift was above acceptance limits in the initial calibration verification (ICV) or continuing calibration verification (CCV).

SwRI—Southwest Research Institute

UF—unfiltered

V9b (validation reason code)—The preserved sample was analyzed outside the 14-day holding time or the unpreserved sample was analyzed outside the 7-day holding time.

Table 1: NMED 2-21 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Canyon	Zone	Location	Screen Depth	Start Date	Fid QC Type Code	Fid Prep Code	Lab Sample Type Code	Anyl Suite Code	Analyte Desc	Analyte	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std MDL	Std UOM	Dilution Factor	Lab Qualifier	Validation Qualifier	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
C4	21	22	09/22/2000	0.409	0.849	0.567	22	Pajarito Canyon	Intermediate Perched	R-19 S2	893.3	01/13/2021	FD	F	INIT	Geninorg	Fluoride	F(-1)	0.617	1.1	LANL Int BG LVL	0	2.6	0.03	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	21	22	09/22/2000	0.409	0.849	0.567	22	Pajarito Canyon	Intermediate Perched	R-19 S2	893.3	01/13/2021	REG	F	INIT	Geninorg	Fluoride	F(-1)	0.618	1.1	LANL Int BG LVL	0	2.6	0.03	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	67	75	08/30/2007	68	408	346	75	Sandia Canyon	Regional Deep	R-35a	1013.1	01/21/2021	REG	F	INIT	Metals	Barium	Ba	344	1.0	LANL Reg BG LVL	38	9.0	1.00	µg/L	1.00	NQ	NQ	SW-846:6010C	GELC		
C4	66	75	08/30/2007	5.97	7.31	6.52	75	Sandia Canyon	Regional Deep	R-35a	1013.1	01/21/2021	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.49	1.0	LANL Reg BG LVL	3	2.4	0.07	mg/L	1.00	J+	I6b	EPA:300.0	GELC		
C4	67	75	08/30/2007	1.20	22.20	7.64	74	Sandia Canyon	Regional Deep	R-35a	1013.1	01/21/2021	REG	F	INIT	Metals	Nickel	Ni	8.79	1.2	LANL Reg BG LVL	3	3.0	0.60	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	66	70	03/05/2009	2.74	6.18	4.43	70	Mortandad Canyon	Regional Deep	R-45 S2	974.9	01/26/2021	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.09	1.4	LANL Reg BG LVL	3	2.3	0.07	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	66	75	03/05/2009	6.1	55.0	22.9	74	Mortandad Canyon	Regional Deep	R-45 S2	974.9	01/26/2021	REG	F	INIT	Metals	Chromium	Cr	48.9	2.1	LANL Reg BG LVL	7	6.5	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	6	7	08/04/2020	17.5	19.3	18.4	7	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	01/21/2021	REG	F	INIT	Geninorg	Chloride	Cl(-1)	17.5	1.0	LANL Reg BG LVL	3	6.5	0.34	mg/L	5.00	J+	I6b	EPA:300.0	GELC		
C4	6	7	08/04/2020	210	272	256	7	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	01/21/2021	REG	F	INIT	Metals	Chromium	Cr	210	0.8	LANL Reg BG LVL	7	28.1	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	6	7	08/04/2020	3.66	4.06	3.92	7	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	01/21/2021	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	3.66	0.9	LANL Reg BG LVL	1	4.8	0.09	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	6	7	08/04/2020	0.812	0.986	0.893	7	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	01/21/2021	REG	F	INIT	LCMS/MS	Perchlorate	ClO4	0.834	0.9	LANL Reg BG LVL	0	2.0	0.05	µg/L	1.00	NQ	NQ	SW-846:6850	GELC		
C4	6	7	08/04/2020	30.1	32.6	31.2	7	Mortandad Canyon	Regional Deep	R-70 S2	1048.0	01/21/2021	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	30.9	1.0	LANL Reg BG LVL	5	6.7	0.67	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	38	45	11/30/2005	64.3	104.0	78.5	45	Sandia Canyon	Regional Top	R-10a	690.0	11/05/2020	REG	F	INIT	Metals	Barium	Ba	76.6	1.0	LANL Reg BG LVL	38	2.0	1.00	µg/L	1.00	NQ	NQ	SW-846:6010C	GELC		
C4	38	45	11/30/2005	5.62	7.09	6.10	45	Sandia Canyon	Regional Top	R-10a	690.0	11/05/2020	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.59	1.1	LANL Reg BG LVL	3	2.4	0.07	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	38	45	11/30/2005	0.53	14	1.6	43	Sandia Canyon	Regional Top	R-10a	690.0	11/05/2020	REG	F	INIT	Metals	Nickel	Ni	7.24	4.5	LANL Reg BG LVL	3	2.5	0.60	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	38	45	11/30/2005	9.4	12.9	10.3	45	Sandia Canyon	Regional Top	R-10a	690.0	11/05/2020	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	10.3	1.0	LANL Reg BG LVL	5	2.2	0.13	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	79	95	05/17/2005	2.27	7.43	5.40	95	Sandia Canyon	Regional Top	R-11	855.0	01/25/2021	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	5.21	1.0	LANL Reg BG LVL	1	6.8	0.17	mg/L	10.00	NQ	NQ	EPA:353.2	GELC		
C4	67	72	02/28/2009	3.0	17.0	5.1	72	Mortandad Canyon	Regional Top	R-45 S1	880.0	01/26/2021	REG	F	INIT	Geninorg	Chloride	Cl(-1)	17.0	3.3	LANL Reg BG LVL	3	6.3	0.13	mg/L	2.00	NQ	NQ	EPA:300.0	GELC		
C4	67	72	02/28/2009	0.26	3.47	2.79	72	Mortandad Canyon	Regional Top	R-45 S1	880.0	01/26/2021	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.50	0.9	LANL Reg BG LVL	1	3.3	0.17	mg/L	10.00	NQ	NQ	EPA:353.2	GELC		
C4	67	72	02/28/2009	4.1	17.2	7.8	72	Mortandad Canyon	Regional Top	R-45 S1	880.0	01/26/2021	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	16.7	2.1	LANL Reg BG LVL	5	3.6	0.13	mg/L	1.00	NQ	NQ	EPA:300.0	GELC		
C4	69	77	03/06/2010	4.7	20.0	9.5	77	Mortandad Canyon	Regional Top	R-50 S1	1077.0	01/20/2021	REG	F	INIT	Geninorg	Chloride	Cl(-1)	20.0	2.1	LANL Reg BG LVL	3	7.4	0.34	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	69	79	03/06/2010	23.2	150.0	84.6	79	Mortandad Canyon	Regional Top	R-50 S1	1077.0	01/20/2021	REG	F	INIT	Metals	Chromium	Cr	24.7	0.3	LANL Reg BG LVL	7	3.3	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	69	77	03/06/2010	1.51	14.60	5.01	77	Mortandad Canyon	Regional Top	R-50 S1	1077.0	01/20/2021	REG	F	INIT	Metals	Nickel	Ni	7.53	1.5	LANL Reg BG LVL	3	2.6	0.60	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	69	78	03/06/2010	0.40	2.94	2.06	78	Mortandad Canyon	Regional Top	R-50 S1	1077.0	01/20/2021	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.60	1.3	LANL Reg BG LVL	1	3.4	0.09	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	69	77	03/06/2010	7.2	20.2	14.0	77	Mortandad Canyon	Regional Top	R-50 S1	1077.0	01/20/2021	REG	F	INIT	Geninorg	Sulfate	SO4(-2)	19.6	1.4	LANL Reg BG LVL	5	4.3	0.67	mg/L	5.00	NQ	NQ	EPA:300.0	GELC		
C4	53	61	05/20/2011	2.0	39.1	21.5	60	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	FD	F	INIT	Metals	Chromium	Cr	34.8	1.6	LANL Reg BG LVL	7	4.7	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	53	61	05/20/2011	2.0	39.1	21.5	60	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	REG	F	INIT	Metals	Chromium	Cr	35.0	1.6	LANL Reg BG LVL	7	4.7	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	53	61	05/20/2011	0.43	2.95	2.18	61	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	FD	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.36	1.1	LANL Reg BG LVL	1	3.1	0.09	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	53	61	05/20/2011	0.43	2.95	2.18	61	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.37	1.1	LANL Reg BG LVL	1	3.1	0.09	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		
C4	52	60	05/20/2011	3.0	16.2	11.9	60	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	FD	F	INIT	LCMS/MS	Perchlorate	ClO4	13.0	1.1	LANL Reg BG LVL	0	31.4	0.50	µg/L	10.00	NQ	NQ	SW-846:6850	GELC		
C4	52	60	05/20/2011	3.0	16.2	11.9	60	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	REG	F	INIT	LCMS/MS	Perchlorate	ClO4	13.2	1.1	LANL Reg BG LVL	0	31.9	0.50	µg/L	10.00	NQ	NQ	SW-846:6850	GELC		

Table 1: NMED 2-21 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Canyon	Zone	Location	Screen Depth	Start Date	Fid QC Type Code	Fid Prep Code	Lab Sample Type Code	AnyI Suite Code	Analyte Desc	Analyte	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std MDL	Std UOM	Dilution Factor	Lab Qualifier	Validation Qualifier	Validation Reason Code	AnyI Meth Code	Lab Code	Comment
C4	6	6	08/04/2020	5.78	7.28	6.12	6	Mortandad Canyon	Regional Top	R-70 S1	963.0	01/22/2021	REG	F	INIT	Geninorg	Chloride	Cl(-1)	6.16	1.0	LANL Reg BG LVL	3	2.3	0.07	mg/L	1.00	J+	I6b	EPA:300.0	GELC		
C4	6	6	08/04/2020	13.5	30.5	23.2	6	Mortandad Canyon	Regional Top	R-70 S1	963.0	01/22/2021	REG	F	INIT	Metals	Chromium	Cr	30.0	1.3	LANL Reg BG LVL	7	4.0	3.00	µg/L	1.00	NQ	NQ	SW-846:6020B	GELC		
C4	6	6	08/04/2020	2.44	2.92	2.73	6	Mortandad Canyon	Regional Top	R-70 S1	963.0	01/22/2021	REG	F	INIT	Geninorg	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.44	0.9	LANL Reg BG LVL	1	3.2	0.09	mg/L	5.00	NQ	NQ	EPA:353.2	GELC		

Table 2: NMED 2-21 Groundwater Report Addendum

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Canyon	Zone	Location	Screen Depth	Start Date	Fid QC Type Code	Fid Prep Code	Lab Sample Type Code	AnyI Suite Code	Analyte Desc	Analyte	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std MDL	Std UOM	Dilution Factor	Lab Qualifier	Validation Qualifier	Validation Reason Code	AnyI Meth Code	Lab Code	Comment
XC2scr	6	6	08/04/2020	12.7	14.8	13.5	4	Mortandad Canyon	Regional Top	R-70 S1	963.0	01/22/2021	REG	F	INIT	Metals	Zinc	Zn	14.8	1.1	Reg-Scr_95	14.4	1.0	3.30	µg/L	1.00	J	J	J_LAB	SW-846:6010C	GELC	
XC4scr	67	75	08/30/2007	20.6	48.2	38.9	69	Sandia Canyon	Regional Deep	R-35a	1013.1	01/21/2021	REG	F	INIT	Metals	Boron	B	41.1	1.1	Reg-Scr_95	18.7	2.2	15.0	µg/L	1.00	J	J	J_LAB	SW-846:6010C	GELC	
XC4scr	69	77	03/06/2010	0.07	0.16	0.10	57	Mortandad Canyon	Regional Top	R-50 S1	1077.0	01/20/2021	REG	F	INIT	Geninorg	Bromide	Br(-1)	0.152	1.6	Reg-Scr_95	0.067	2.3	0.067	mg/L	1.00	J	J	J_LAB	EPA:300.0	GELC	
XC4scr	53	61	05/20/2011	0.053	11.8	0.544	58	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	FD	F	INIT	Geninorg	Total Phosphate as Phosphorus	PO4-P	0.312	0.6	Reg-Scr_95	0.0822	3.8	0.0200	mg/L	1.00	NQ	NQ	EPA:365.4	GELC		
XC4scr	53	61	05/20/2011	0.053	11.8	0.544	58	Mortandad Canyon	Regional Top	R-61 S1	1125.0	01/20/2021	REG	F	INIT	Geninorg	Total Phosphate as Phosphorus	PO4-P	0.299	0.5	Reg-Scr_95	0.0822	3.6	0.0200	mg/L	1.00	NQ	NQ	EPA:365.4	GELC		