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Date: AUG 28 2017
Refer To: ADEM-17-0203
LAUR: 17-27414

John Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Monthly Notification of Groundwater Data Reviewed in August 2017

This letter is Los Alamos National Laboratory's (LANL's) written submission in accordance with Section XXVI of the 2016 Compliance Order on Consent (Consent Order). Members of LANL's Associate Directorate for Environmental Management met on August 14, 2017, to review groundwater data received in July 2017. 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), 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." For comparison with EPA tap water standards, the standard's carcinogenic risk value was adjusted to 1×10^{-5}, as specified in the Consent Order. This report was prepared using the June 2017 EPA regional screening levels for tap water.

1-Day Notification

There were no instances of a contaminant detected at a concentration that exceeded the NMWQCC groundwater standard or federal maximum contaminant level at locations where contaminants have not been previously detected above the respective standard (based on samples collected since June 14, 2007).

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.

15-Day Notification
The required information for the contaminants and other chemical parameters that meet the five reporting criteria requiring written notification within 15 days is given in the accompanying report and tables.

If you have questions, please contact Nita Patel at (505) 665-9273 (npatel@lanl.gov) or Hai Shen at (505) 665-5046 (hai.shen@em.doe.gov).

Sincerely,

Bruce Robinson, Program Director
Environmental Remediation Program
Los Alamos National Laboratory

Sincerely,

David S. Rhodes, Director
Office of Quality and Regulatory Compliance
Los Alamos Environmental Management
Field Office

BR/DR/NP:sm

Enclosure: Two hard copies with electronic files – Summary of Groundwater Data Reviewed in August 2017 That Meet Notification Requirements (EP2017-0126)

Cy: (date-stamped letter and attachment emailed)
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SUMMARY OF GROUNDWATER DATA REVIEWED IN AUGUST 2017
THAT MEET NOTIFICATION REQUIREMENTS

INTRODUCTION

This report provides information to the New Mexico Environment Department (NMED) concerning recent groundwater monitoring data obtained by Los Alamos National Laboratory (the Laboratory) under its annual "Interim Facility-Wide Groundwater Monitoring Plan" for the 2017 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 indicated in the tables.

The report includes two tables. Table 1, NMED 07-17 Groundwater Report, presents results since June 14, 2007, that met the five reporting criteria as specified in the 2016 Consent Order. Table 2, NMED 07-17 Groundwater Report Addendum, presents results that are exceeding the 95th percentile of those results in the data set defined in the "Groundwater Background Investigation Report, Revision 5." Only contaminants and other chemical constituents lacking 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 the Laboratory to NMED to identify the potential risk resulting from contaminants and other chemical constituents 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
- 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." For comparison with EPA tap water standards, the standard's carcinogenic risk value was adjusted to 1×10^{-5}, as specified in the Consent Order. This report was prepared using the June 2017 EPA regional screening levels for tap water.

Background values applied in Table 1 notification criteria C2 and 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 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. Some data met more than one of the notification criteria and appear in the table multiple times.

The criteria 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” (March 2017 or updates, as appropriate), 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 two 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 two through eight in both tables provide summary statistics for metals or 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:

Hdr 1—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—sample date

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

Fld Prep Code—identifies whether samples are filtered or unfiltered

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 Qual Code—analytical laboratory qualifiers indicating analytical quality of the sample

Validation Flag—secondary validation qualifier

Validation Reason Code—concatenated secondary validation codes explaining assignment of qualifiers

Anyl Meth Code—analytical method number

Lab Code—analytical laboratory name

Comment—comment on the analytical result

Table 1: NMED 07-17 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Screen Depth	Start Date	Fld QC Type Code	Fld 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 U_{Om}	Dilution Factor	Lab Qual Code	Validation Flag	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
C4	23	28	6/1/2005	5.78	8.34	6.76	28	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	CdV-16-1(i)	624	6/12/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	8.05	1.2	LANL Int BG LVL	3.11	2.6	0.067	mg/L	1		NQ	NQ	EPA:300.0	GELC	
C4	14	14	8/8/2006	141	296	169.5	14	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Alkalinity-CO3+HCO3	ALK-CO3+HCO3	172	1	LANL Int BG LVL	62	2.8	1.45	mg/L	1		NQ	NQ	EPA:310.1	GELC	
C4	13	13	8/8/2006	95.1	117	111	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	METALS	Barium	Ba	109	1	LANL Int BG LVL	13.5	8.1	1	µg/L	1	E	NQ	NQ	SW-846:6010C	GELC	
C4	13	13	8/8/2006	39.2	53	48.4	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Calcium	Ca	49.1	1	LANL Int BG LVL	10.7	4.6	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	14	14	8/8/2006	42.5	49.9	46.8	14	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	47.9	1	LANL Int BG LVL	3.11	15.4	0.67	mg/L	10		NQ	NQ	EPA:300.0	GELC	
C4	13	13	8/8/2006	141	184	171	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Hardness	HARDNESS	172	1	LANL Int BG LVL	37.8	4.6	0.453	mg/L	1		NQ	NQ	SM:A2340B	GELC	
C4	13	13	8/8/2006	10.4	13.2	12.3	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Magnesium	Mg	12	1	LANL Int BG LVL	3.14	3.8	0.11	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	13	13	8/8/2006	8.46	11.4	9.9	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	METALS	Nickel	Ni	9.2	0.9	LANL Int BG LVL	3.65	2.5	0.6	µg/L	1		NQ	NQ	SW-846:6020	GELC	
C4	15	15	5/7/2005	3.16	7.65	4.8	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	3.35	0.7	LANL Int BG LVL	0.459	7.3	0.085	mg/L	5		NQ	NQ	EPA:353.2	GELC	
C4	13	13	8/8/2006	8.3	9.23	8.78	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Potassium	K	8.87	1	LANL Int BG LVL	2.35	3.8	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	13	13	8/8/2006	42.6	53	45.6	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Sodium	Na	45.6	1	LANL Int BG LVL	18.2	2.5	0.1	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	13	13	8/8/2006	216	269	251	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	METALS	Strontium	Sr	253	1	LANL Int BG LVL	59.6	4.2	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	14	14	8/8/2006	22.5	32.8	28.95	14	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	6/19/2017	REG	F	INIT	GENINORG	Sulfate	SO4(-2)	30.9	1.1	LANL Int BG LVL	7.1	4.4	1.33	mg/L	10		NQ	NQ	EPA:300.0	GELC	
C4	10	10	4/15/2009	2.49	76.5	31.35	10	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	R-26 PZ-2	230	6/7/2017	REG	F	INIT	METALS	Barium	Ba	33.4	1.1	LANL Int BG LVL	13.5	2.5	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	10	10	4/15/2009	22.4	27.3	24.25	10	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	R-26 PZ-2	230	6/7/2017	REG	F	INIT	GENINORG	Calcium	Ca	24.8	1	LANL Int BG LVL	10.7	2.3	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	10	10	4/15/2009	79.1	98.1	86	10	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	R-26 PZ-2	230	6/7/2017	REG	F	INIT	GENINORG	Hardness	HARDNESS	87.2	1	LANL Int BG LVL	37.8	2.3	0.453	mg/L	1		NQ	NQ	SM:A2340B	GELC	
C4	10	10	4/15/2009	125	180	149	10	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	R-26 PZ-2	230	6/7/2017	REG	F	INIT	METALS	Strontium	Sr	152	1	LANL Int BG LVL	59.6	2.6	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	15	17	8/10/2006	150	164	156	17	Pueblo Canyon	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Alkalinity-CO3+HCO3	ALK-CO3+HCO3	164	1.1	LANL Int	62	2.6	1.45	mg/L	1		NQ	NQ	EPA:310.1	GELC	

Table 1: NMED 07-17 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Screen Depth	Start Date	Fld QC Type Code	Fld 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 U_{om}	Dilution Factor	Lab Qual Code	Validation Flag	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
								(includes Acid Canyon)													BG LVL											
C4	14	15	8/10/2006	94.5	107	98.2	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	METALS	Barium	Ba	95.6	1	LANL Int BG LVL	13.5	7.1	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	14	15	8/10/2006	54.8	60	57.8	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Calcium	Ca	56.7	1	LANL Int BG LVL	10.7	5.3	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	15	17	8/10/2006	34.4	44.9	38	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	44	1.2	LANL Int BG LVL	3.11	14.1	0.67	mg/L	10		NQ	NQ	EPA:300.0	GELC	
C4	14	15	8/10/2006	179	219	210	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Hardness	HARDNESS	206	1	LANL Int BG LVL	37.8	5.4	0.453	mg/L	1		NQ	NQ	SM:A2340B	GELC	
C4	14	15	8/10/2006	15.1	16.8	15.8	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Magnesium	Mg	15.6	1	LANL Int BG LVL	3.14	5	0.11	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	15	17	8/10/2006	2.15	7.65	4.35	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	3.54	0.8	LANL Int BG LVL	0.459	7.7	0.085	mg/L	5		NQ	NQ	EPA:353.2	GELC	
C4	15	17	8/10/2006	0.104	3.45	2.3	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Perchlorate	ClO4	1.57	0.7	LANL Int BG LVL	0.27	5.8	0.05	µg/L	1		NQ	NQ	SW-846:6850	GELC	
C4	14	15	8/10/2006	5.32	6.14	5.82	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Potassium	K	5.69	1	LANL Int BG LVL	2.35	2.4	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	14	15	8/10/2006	255	317	273	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	METALS	Strontium	Sr	269	1	LANL Int BG LVL	59.6	4.5	1	ug/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	15	17	8/10/2006	20.1	29.5	25.4	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Sulfate	SO4(-2)	28.5	1.1	LANL Int BG LVL	7.1	4	1.33	mg/L	10		NQ	NQ	EPA:300.0	GELC	
C4	14	15	8/10/2006	7.72	10.2	9.25	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	6/27/2017	REG	F	INIT	GENINORG	Uranium	U	8.95	1	LANL Int BG LVL	0.992	9	0.067	µg/L	1		NQ	NQ	SW-846:6020	GELC	
C4	12	17	4/29/2010	59.2	67.4	62.7	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	METALS	Barium	Ba	63.4	1	LANL Int BG LVL	13.5	4.7	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	12	17	4/29/2010	35.5	43.3	37.4	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	GENINORG	Calcium	Ca	37.4	1	LANL Int BG LVL	10.7	3.5	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	12	17	4/29/2010	40.2	50.8	45.1	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	43.5	1	LANL Int BG LVL	3.11	14	0.67	mg/L	10		NQ	NQ	EPA:300.0	GELC	
C4	12	17	4/29/2010	116	137	122	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	GENINORG	Hardness	HARDNESS	120	1	LANL Int BG LVL	37.8	3.2	0.453	mg/L	1		NQ	NQ	SM:A2340B	GELC	
C4	12	17	4/29/2010	6.33	7.49	7.04	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	GENINORG	Magnesium	Mg	6.33	0.9	LANL Int BG LVL	3.14	2	0.11	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	12	17	4/29/2010	2.49	3.36	2.91	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	GENINORG	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	3.01	1	LANL Int BG LVL	0.459	6.6	0.085	mg/L	5		NQ	NQ	EPA:353.2	GELC	
C4	12	17	4/29/2010	196	231	205	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	METALS	Strontium	Sr	196	1	LANL Int BG LVL	59.6	3.3	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	12	17	4/29/2010	22.1	26	25.7	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	6/20/2017	REG	F	INIT	GENINORG	Sulfate	SO4(-2)	25.7	1	LANL Int BG LVL	7.1	3.6	1.33	mg/L	10		NQ	NQ	EPA:300.0	GELC	

Table 1: NMED 07-17 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Screen Depth	Start Date	Fld QC Type Code	Fld 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 U_{om}	Dilution Factor	Lab Qual Code	Validation Flag	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
C4	27	31	9/9/2004	53.9	82	69	31	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	6/1/2017	FD	F	INIT	METALS	Barium	Ba	55.4	0.8	LANL Int BG LVL	13.5	4.1	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	27	31	9/9/2004	53.9	82	69	31	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	6/1/2017	REG	F	INIT	METALS	Barium	Ba	56.6	0.8	LANL Int BG LVL	13.5	4.2	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	26	30	9/9/2004	12.1	34.6	17.8	30	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	6/1/2017	FD	F	INIT	GENINORG	Chloride	Cl(-1)	16.6	0.9	LANL Int BG LVL	3.11	5.3	0.134	mg/L	2		NQ	NQ	EPA:300.0	GELC	
C4	26	30	9/9/2004	12.1	34.6	17.8	30	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	6/1/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	16.7	0.9	LANL Int BG LVL	3.11	5.4	0.134	mg/L	2		NQ	NQ	EPA:300.0	GELC	
C4	24	28	6/22/2005	0.537	0.947	0.7025	28	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	6/1/2017	FD	F	INIT	GENINORG	Perchlorate	ClO4	0.644	0.9	LANL Int BG LVL	0.27	2.4	0.05	µg/L	1		NQ	NQ	SW-846:6850	GELC	
C4	24	28	6/22/2005	0.537	0.947	0.7025	28	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	6/1/2017	REG	F	INIT	GENINORG	Perchlorate	ClO4	0.634	0.9	LANL Int BG LVL	0.27	2.3	0.05	µg/L	1		NQ	NQ	SW-846:6850	GELC	
C4	70	85	1/10/2000	145	266	182	79	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Burning Ground Spring	0	6/9/2017	REG	F	INIT	METALS	Barium	Ba	166	0.9	LANL Int BG LVL	13.5	12.3	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	22	27	1/29/2007	13.8	42	19.5	27	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Burning Ground Spring	0	6/9/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	13.8	0.7	LANL Int BG LVL	3.11	4.4	0.134	mg/L	2		NQ	NQ	EPA:300.0	GELC	
C4	66	74	1/10/2000	122	243	168	67	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	METALS	Barium	Ba	144	0.9	LANL Int BG LVL	13.5	10.7	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	66	74	1/10/2000	15.5	42.8	29.8	74	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	GENINORG	Calcium	Ca	24.4	0.8	LANL Int BG LVL	10.7	2.3	0.05	mg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	22	28	1/30/2007	18	44.2	22.6	28	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	20.8	0.9	LANL Int BG LVL	3.11	6.7	0.335	mg/L	5		NQ	NQ	EPA:300.0	GELC	
C4	30	37	8/25/2005	65.7	112	94.3	37	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	GENINORG	Hardness	HARDNESS	83.1	0.9	LANL Int BG LVL	37.8	2.2	0.453	mg/L	1		NQ	NQ	SM:A2340B	GELC	
C4	22	28	1/30/2007	1.69	4.88	2.72	28	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	GENINORG	Nitrate-Nitrite as Nitrogen	NO3+NO2-N	2.69	1	LANL Int BG LVL	0.459	5.9	0.085	mg/L	5		NQ	NQ	EPA:353.2	GELC	
C4	30	37	8/25/2005	93.8	155	134	37	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	METALS	Strontium	Sr	121	0.9	LANL Int BG LVL	59.6	2	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	

Table 1: NMED 07-17 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Screen Depth	Start Date	Fld QC Type Code	Fld 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 U_{om}	Dilution Factor	Lab Qual Code	Validation Flag	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
C4	22	28	1/30/2007	13.1	20	16.85	28	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	6/1/2017	REG	F	INIT	GENINORG	Sulfate	SO4(-2)	16.2	1	LANL Int BG LVL	7.1	2.3	0.133	mg/L	1		NQ	NQ	EPA:300.0	GELC	
C4	33	33	1/10/2000	209	371	268	33	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	SWSC Spring	0	6/9/2017	REG	F	INIT	METALS	Barium	Ba	224	0.8	LANL Int BG LVL	13.5	16.6	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
C4	11	11	5/10/2007	13.4	33.9	18.1	11	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	SWSC Spring	0	6/9/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	13.5	0.7	LANL Int BG LVL	3.11	4.3	0.134	mg/L	2		NQ	NQ	EPA:300.0	GELC	
C4	17	21	11/15/2005	6.96	8.31	7.53	21	Lower Los Alamos Canyon (San Ildefonso Pueblo)	Regional	R-24	825	6/23/2017	REG	F	INIT	GENINORG	Chloride	Cl(-1)	7.76	1	LANL Reg BG LVL	2.7	2.9	0.067	mg/L	1		NQ	NQ	EPA:300.0	GELC	
C4	14	21	7/25/2006	2	6.32	4.5	21	Pueblo Canyon (includes Acid Canyon)	Regional	R-4	792.9	6/23/2017	FD	F	INIT	GENINORG	Perchlorate	ClO4	6.3	1.4	LANL Reg BG LVL	0.414	15.2	0.25	µg/L	5		NQ	NQ	SW-846:6850	GELC	
C4	14	21	7/25/2006	2	6.32	4.5	21	Pueblo Canyon (includes Acid Canyon)	Regional	R-4	792.9	6/23/2017	REG	F	INIT	GENINORG	Perchlorate	ClO4	6.32	1.4	LANL Reg BG LVL	0.414	15.3	0.25	µg/L	5		NQ	NQ	SW-846:6850	GELC	

Table 2: NMED 07-17 Groundwater Report Addendum

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Screen Depth	Start Date	Fld QC Type Code	Fld 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 Qual Code	Validation Flag	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
XC2scr	13	13	38937	0.392	0.392	0.392	1	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	42905	REG	F	INIT	METALS	Silver	Ag	0.392	1	Int-Scr_95	0.2	2	0.3	µg/L	1	J	J	J_LAB	SW-846:6020	GELC	
XC2scr	12	17	40297	104	104	104	1	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	42906	REG	F	INIT	METALS	Aluminum	Al	104	1	Int-Scr_95	68	1.5	68	µg/L	1	J	J	J_LAB	SW-846:6010C	GELC	
XC2scr	12	17	40297	1.45	1.45	1.45	1	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	42906	REG	F	INIT	METALS	Cobalt	Co	1.45	1	Int-Scr_95	1	1.5	1	µg/L	1	J	J	J_LAB	SW-846:6010C	GELC	
XC2scr	17	18	38468	1.45	2.6	2.025	2	Pueblo Canyon (includes Acid Canyon)	Regional	R-2	906.4	42906	REG	F	INIT	METALS	Cobalt	Co	1.45	0.7	Reg-Scr_95	1	1.5	1	µg/L	1	J	J	J_LAB	SW-846:6010C	GELC	
XC2scr	17	24	38469	0.0353	0.152	0.0669	5	Pueblo Canyon (includes Acid Canyon)	Regional	R-4	792.9	42909	FD	F	INIT	GENINORG	Ammonia as Nitrogen	NH3-N	0.152	2.3	Reg-Scr_95	0.1	1.5	0.017	mg/L	1		NQ	NQ	EPA:350.1	GELC	
XC4scr	26	31	38504	51	78.9	60.5	31	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	CdV-16-1(i)	624	42898	REG	F	INIT	METALS	Boron	B	69.2	1.1	Int-Scr_95	16.2	4.3	15	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	26	31	38504	3.4	24.8	8.9	29	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	CdV-16-1(i)	624	42898	REG	F	INIT	METALS	Copper	Cu	21.3	2.4	Int-Scr_95	3	7.1	3	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	26	31	38504	4.9	70.7	15.9	27	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	CdV-16-1(i)	624	42898	REG	F	INIT	METALS	Zinc	Zn	44.8	2.8	Int-Scr_95	17.4	2.6	3.3	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	20	24	40421	60.1	115	66.2	24	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	CDV-16-4ip S1	815.6	42892	REG	F	INIT	METALS	Boron	B	60.1	0.9	Int-Scr_95	16.2	3.7	15	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	13	13	38937	212	250	234	13	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	42905	REG	F	INIT	METALS	Boron	B	212	0.9	Int-Scr_95	16.2	13.1	15	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	14	14	38937	331	393	368	14	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	42905	REG	F	INIT	GENINORG	Total Dissolved Solids	TDS	366	1	Int-Scr_95	135	2.7	3.4	mg/L	1		NQ	NQ	EPA:160.1	GELC	
XC4scr	15	15	38479	0.032	1.69	1.14	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	POI-4	159	42905	REG	F	INIT	GENINORG	Total Phosphate as Phosphorus	PO4-P	1.09	1	Int-Scr_95	0.178	6.1	0.02	mg/L	1		NQ	NQ	EPA:365.4	GELC	
XC4scr	10	10	39918	2.15	95	6.355	10	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	R-26 PZ-2	230	42893	REG	F	INIT	METALS	Cobalt	Co	8.89	1.4	Int-Scr_95	1	8.9	1	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	10	10	39918	12	1380	51.3	9	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate	R-26 PZ-2	230	42893	REG	F	INIT	METALS	Manganese	Mn	54.8	1.1	Int-Scr_95	8.39	6.5	2	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	14	15	38939	84.6	122	101	15	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	42913	REG	F	INIT	METALS	Boron	B	111	1.1	Int-Scr_95	16.2	6.9	15	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	15	17	38939	251	437	323	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	R-3i	215.2	42913	REG	F	INIT	GENINORG	Total Dissolved Solids	TDS	373	1.2	Int-Scr_95	135	2.8	3.4	mg/L	1		NQ	NQ	EPA:160.1	GELC	

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Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Screen Depth	Start Date	Fld QC Type Code	Fld 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 Qual Code	Validation Flag	Validation Reason Code	Anyl Meth Code	Lab Code	Comment
XC4scr	12	17	40297	151	195	173	17	Pueblo Canyon (includes Acid Canyon)	Intermediate	TW-2Ar	102	42906	REG	F	INIT	METALS	Boron	B	151	0.9	Int-Scr_95	16.2	9.3	15	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	27	31	38239	95	4500	679.5	30	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	42887	FD	F	INIT	METALS	Aluminum	Al	701	1	Int-Scr_95	68	10.3	68	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	27	31	38239	95	4500	679.5	30	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	42887	REG	F	INIT	METALS	Aluminum	Al	664	1	Int-Scr_95	68	9.8	68	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	27	31	38239	77.2	2200	339.5	30	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	42887	FD	F	INIT	METALS	Iron	Fe	337	1	Int-Scr_95	54.1	6.2	30	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	27	31	38239	77.2	2200	339.5	30	Pajarito Canyon (includes Twomile and Threemile Canyons)	Intermediate Spring	Bulldog Spring	0	42887	REG	F	INIT	METALS	Iron	Fe	325	1	Int-Scr_95	54.1	6	30	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	70	85	36535	16.2	2590	337	60	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Burning Ground Spring	0	42895	REG	F	INIT	METALS	Aluminum	Al	386	1.1	Int-Scr_95	68	5.7	68	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	66	74	36535	51	5130	316.5	46	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	42887	REG	F	INIT	METALS	Aluminum	Al	157	0.5	Int-Scr_95	68	2.3	68	µg/L	1	J	J	J_LAB	SW-846:6010C	GELC	
XC4scr	62	70	36535	570	2840	1350	70	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	Martin Spring	0	42887	REG	F	INIT	METALS	Boron	B	918	0.7	Int-Scr_95	16.2	56.7	15	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	34	34	36535	168	3150	613	22	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	SWSC Spring	0	42895	REG	F	INIT	METALS	Aluminum	Al	258	0.4	Int-Scr_95	68	3.8	68	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	34	34	36535	41.6	1600	199	26	Water Canyon (includes Cañon de Valle, Potrillo, and Fence Canyons)	Intermediate Spring	SWSC Spring	0	42895	REG	F	INIT	METALS	Iron	Fe	117	0.6	Int-Scr_95	54.1	2.2	30	µg/L	1		NQ	NQ	SW-846:6010C	GELC	
XC4scr	16	17	38468	5.09	8.09	6.39	6	Pueblo Canyon (includes Acid Canyon)	Regional	R-2	906.4	42906	REG	F	INIT	METALS	Copper	Cu	8.09	1.3	Reg-Scr_95	3	2.7	3	µg/L	1	J	J	J_LAB	SW-846:6010C	GELC	
XC4scr	16	20	38671	41.8	64	51.7	19	Lower Los Alamos Canyon (San Ildefonso Pueblo)	Regional	R-24	825	42909	REG	F	INIT	METALS	Boron	B	41.8	0.8	Reg-Scr_95	18.7	2.2	15	µg/L	1	J	J	J_LAB	SW-846:6010C	GELC	