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Date: MAR 2 3 2012
Refer To: EP2012-0057

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

Subject: Review of February 2012 Groundwater Data

Dear Mr. Kieling:

Members of the Los Alamos National Laboratory Environmental Programs staff met on March 14, 2012, to review new groundwater data received in February 2012. At that time, no groundwater samples were identified with contaminant concentrations above the New Mexico or federal water quality standards.

An Environmental Programs staff member notified the New Mexico Environment Department Hazardous Waste Bureau about these findings by email on March 14, 2012, and followed up with a phone call (voice message) on the same day.

This letter is our written submission that meets notification requirements laid out in Section IV.A.3.g of the Compliance Order on Consent, modified on May 13, 2008. The required information for the chemical constituents that meet the seven screening criteria contained in that section is given in the accompanying report and tables.

If you have questions, please contact Steve Paris at (505) 606-0915 (smparis@lanl.gov) or Hai Shen at (505) 665-5046 (hai.shen@nnsa.doe.gov).

Sincerely,

B. G. Schappell for MJG

Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,

Peter Maggiore, Assistant Manager
Environmental Projects Office
Los Alamos Site Office

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MG/GR/CD/SP/DR:sm

Enclosure: Two hard copies with electronic files – Summary of New Los Alamos National Laboratory Groundwater Data Loaded in February 2012 (LA-UR-12-20071)

Cy: (w/enc.)
Hai Shen, DOE-LASO, MS A316
Steve Paris, EP-CAP, MS M992
RPF, MS M707 (electronic copy)
Public Reading Room, MS M992 (hard copy)

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Laurie King, EPA Region 6, Dallas, TX
Neil Weber, San Ildefonso Pueblo, NM
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Jake Meadows, ENV-RCRA, MS K490
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Cy: (w/o enc.)
Pete Padilla, Los Alamos County Utility Department, Los Alamos, NM
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David Rogers, EP-ET, MS M992 (date-stamped letter emailed)
Mei Ding, EES-6, MS J514 (date-stamped letter emailed)
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Michael J. Graham, ADEP, MS M991 (date-stamped letter emailed)

SUMMARY OF NEW LOS ALAMOS NATIONAL LABORATORY GROUNDWATER DATA LOADED IN FEBRUARY 2012

INTRODUCTION

This report provides preliminary information to the New Mexico Environment Department (NMED) concerning recent groundwater monitoring data obtained by the Los Alamos National Laboratory (the Laboratory) under its interim monitoring plan. This report contains results for chemical constituents that meet the seven screening criteria laid out in the Compliance Order on Consent (Consent Order), modified May 13, 2008. The report covers groundwater samples taken from wells or springs (listed in the accompanying table) that provide surveillance of the groundwater zones indicated in the table.

The report includes one table, *Table 1: NMED 2-12 Groundwater Report*. This table contains some values that are reported when they are detected for the first time since June 14, 2007, or are greater than other data collected since that time (as specified in the Consent Order). These reported data are often similar to data gathered before June 14, 2007.

This table includes additional comments on the significance of the results for those that appear to be exceptional or are first-time occurrences of results based on considering monitoring data acquired before June 14, 2007 (using statistics described below).

The table contains supplemental information summarizing monitoring results obtained before June 14, 2007.

The table includes sampling date, the name of the well or spring, the location of the well or spring, the depth of the screened interval, the 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. The definitions for abbreviations in the table may be found at http://www.lanl.gov/environment/all/racer.shtml.

In accordance with the Consent Order, the screening levels used include the U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), the New Mexico groundwater standards, and the EPA Regional Screening Levels for tap water (for compounds having no other regulatory standard). In the table, the EPA Regional Screening Levels for tap water are identified as being for cancer (10^{-5} excess) or noncancer risk values. The data were screened using 10 times the EPA's 10^{-6} excess cancer risk values, as indicated in Section VIII.A.1 of the Consent Order.

Background levels applied in Criteria 2 and 5 are the most recent NMED-approved 95% upper tolerance limits for background for each groundwater zone as set forth in the "Groundwater Background Investigation Report," prepared under Section IV.A.3.d of the Consent Order.

DESCRIPTION OF TABLE

The table is divided into separate categories that correspond to the seven screening criteria in the Consent Order and included below: they are labeled C1 through C6 and CA for cases where the concentration of a constituent in a well screen or spring has not previously exceeded either the New Mexico Water Quality Control Commission (NMWQCC) standard or the federal MCLs. Some data meet one or more than one criteria and appear in the table multiple times. The table also presents only the instances where the results exceed criteria; therefore, not all seven criteria may appear in the table.

The criteria are as follows:

CA. The Respondents shall notify the Department orally within one business day after review of the analytical data if such data show detection of a contaminant in a well screen interval or spring at a concentration that exceeds either the NMWQCC water quality standard or the federal MCL if that contaminant has not previously exceeded such water quality standard or maximum contaminant level in such well screen interval or spring.

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 exceeds either one-half the New Mexico water quality standard or one-half the federal maximum contaminant level, or if there is no such standard for the contaminant, one-half the EPA Region 6 human health medium-specific screening level for tap water (now the EPA Regional Screening Levels 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 perchlorate in a spring or screened interval of a well at a concentration of 2 µg/L or greater if perchlorate at such concentration has not previously been detected in the spring or screened interval.

C5. 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.

C6. Detection of a contaminant in a spring or screened interval of a well at a concentration that exceeds either one-half the New Mexico water quality standard or one-half the federal MCL, and that has increased for the third consecutive sampling of that spring or screened interval.

The next seven columns of the table give information on monitoring results obtained over a longer time frame than samples collected after June 14, 2007. The columns provide summary statistics for the samples collected since January 1, 2000, for the same analyte and field preparation (for example, filtered samples). The information includes the date of first sampling event included in the statistics, the numbers 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—groundwater zone sampled by monitoring location (such as alluvial spring)

Location—monitoring location name

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

Start Date—sample date

Fld QC Type Code—identifies samples that are field duplicates (definitions for these and other abbreviations may be found at http://www.lanl.gov/environment/all/racer.shtml)

Fld Prep—identifies whether samples are filtered or unfiltered

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

Anyl Suite—gives 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—the analytical result in standard measurement units

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

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

Screen Level—the value of the LVL Type/Risk Code

Exceedance Ratio—the ratio of Std Result to LVL Type/Risk Code, divided by the basis for comparison in the criterion. For example, for a criterion (such as C3) that compares the value to 1/2 the standard, a value equal to a standard has an exceedance ratio of 2.

- C1, C2, and CA refer to a screening value so the exceedance ratio compares the result directly to the screening value.
- C3, C4, and C6 refer to 1/2 of a screening value so the exceedance ratio compares the result to 1/2 the screening value.
- C5 refers to 2 times a screening value so the exceedance ratio compares the result to 2 times the screening value.

Std Mdl—the method detection limit in standard measurement units

Std UOM— the standard units of measurement

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

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

Concat Flag Code—concatenated secondary validation qualifiers produced by an independent contractor who reviews data packages, verifying, for example, that holding times were met, that all documentation is present, and that analytical laboratory quality control measures were applied, documented, and kept within contract requirements

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

Anyl Meth Code—analytical method number

Lab Code—analytical laboratory name

Comment—a comment on the analytical result

Table 1: NMED 2-12 Groundwater Report

Criteria Code	Visits	Samples	First Event	Min Detect	Max Detect	Median Detect	Num Detect	Hdr 1	Zone	Location	Port Depth	Start Date	Fld QC Type Code	Fld Prep Code	Lab Sample Type Code	Anyl Suite Code	Analyte Desc	Std Result	Result/Median	LVL Type/Risk Code	Screen Level	Exceedance Ratio	Std Mdl	Std Uom	Dilution Factor	Lab Qual Code	Concat Flag Code	Concat Reason Code	Anyl Meth Code	Lab Code	Comment
C1	14	17	11/14/00	0.38	0.38	0.38	1	Water Canyon (includes Canyon del Valle, Potrillo, and Fence Canyons)	Intermediate	R-25	754.8	01/11/12		UF	CS	VOA	Chloromethane	0.38	1.00	EPA TAP SCRN LVL N	190	0.0	0.3	ug/L	1	J	J	J_LAB	SW-846:8260B	GELC	
C5	21	26	01/11/07	8.96	48.7	13.5	26	Sandia Canyon	Intermediate	SCI-1	358.4	11/16/11		F	RE	METALS	Chromium	8.96	0.66	LANL Int BG LVL	1	4.5	2	ug/L	1	J	J	J_LAB	SW-846:6020	GELC	Reanalyses show results in usual range- original was 48.7
C5	21	24	01/11/07	43.9	97	73.2	24	Sandia Canyon	Intermediate	SCI-1	358.4	11/16/11		F	RE	METALS	Molybdenum	77.3	1.06	LANL Int BG LVL	2	19.3	0.17	ug/L	1				SW-846:6020	GELC	Original was 77
C5	21	23	01/11/07	4.3	50.8	5.6	23	Sandia Canyon	Intermediate	SCI-1	358.4	11/16/11		F	RE	METALS	Nickel	5.13	0.92	LANL Int BG LVL	1	2.6	0.5	ug/L	1				SW-846:6020	GELC	Reanalyses show results in usual range- original was 50.8
C5	21	23	01/11/07	1.7	3.09	2.5	23	Sandia Canyon	Intermediate	SCI-1	358.4	11/16/11		F	RE	METALS	Uranium	3.09	1.24	LANL Int BG LVL	0.72	2.2	0.067	ug/L	1				SW-846:6020	GELC	Original was 2.84