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National Nuclear Security Administration
 Los Alamos Field Office, MS A316
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Date: **AUG 20 2014**

Refer To: EP2014-0416

Nicholas Schiavo, Water Division Director
 Sangre de Cristo Water Division
 City of Santa Fe
 801 West San Mateo
 P.O. Box 909
 Santa Fe, New Mexico 87504

Subject: Los Alamos National Laboratory Sitewide Monitoring Program Drinking Water Results for the City of Santa Fe Buckman Water Supply Wells

Dear Mr. Schiavo:

Routine monitoring of select Buckman water supply wells is conducted in accordance with an annual sampling and analysis plan (SAP) cooperatively developed between Los Alamos National Laboratory (the Laboratory) and City of Santa Fe staff. A draft of the 2014–2015 SAP was provided to Alex Puglisi of your staff on April 18, 2014. Pending resolution of comments, the City of Santa Fe and the Laboratory agreed to follow the draft SAP until it is finalized. According to the draft SAP, the Laboratory will sample Buckman Wells Nos. 1, 6, and 8 quarterly: twice per year for radionuclides, general inorganics, metals, and organics, with two additional sample events per year for tritium.

This report, prepared by the Laboratory, provides the analytical results from the June 9, 2014, sampling of the City of Santa Fe Buckman Water Supply Wells Nos. 1, 6, and 8. Samples were analyzed for radionuclides, general inorganics, metals, and organics.

All results were below the U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs), except for the following:

- Arsenic was measured in a filtered sample from Buckman Well No. 1 at a concentration of 10.6 µg/L in the primary sample and 11.1 µg/L in a field duplicate; the EPA MCL for arsenic in drinking water is 10 µg/L. Arsenic occurs naturally in this water. The arsenic concentrations found in this well since 2002 range from 9.03 µg/L to 17.6 µg/L.

The attached CD contains an Excel file of the analytical results with a glossary of laboratory qualifier codes, secondary validation codes, and secondary validation reason codes. The analytical results are as follows.

Radiochemistry:

- **Americium-241, Cesium-137, Cobalt-60, Neptunium-237, Plutonium-238, Plutonium-239/240, Potassium-40, Sodium-22, and Strontium-90:** All results were nondetect.
- **Gross Alpha:** The gross-alpha activity in samples ranged from 6.42 pCi/L to 13.1 pCi/L. All results were below the 15 pCi/L EPA MCL for gross alpha in drinking water (excluding uranium and radon but including radium-226). These reported gross-alpha values are not corrected for uranium and radon.
- **Gross Beta:** The gross-beta activity in samples ranged from 3.1 pCi/L to 7.83 pCi/L. All results were below the EPA screening level of 50 pCi/L for gross beta in drinking water.
- **Combined Radium-226 and Radium-228:** The radium-226 activity in samples ranged from 0.554 pCi/L to 1.4 pCi/L. All radium-228 results were nondetect. The results at all locations were below the EPA MCL of 5 pCi/L for the combined radium-226 and radium-228 in drinking water.
- **Tritium:** All tritium results were nondetect. The average minimum detectable activity for the measurements was 6.45 pCi/L. The results at all locations were below the EPA MCL of 20,000 pCi/L for tritium in drinking water.
- **Uranium:** The uranium concentration in samples ranged from 5.06 µg/L to 17.9 µg/L. The results at all locations were below the EPA MCL of 30 µg/L for uranium in drinking water.
- **Uranium-234, Uranium-235/236, Uranium-238:** These isotopes were detected in all samples and reflect presence of natural uranium.

General Inorganics:

- **Perchlorate:** The perchlorate concentration in samples ranged from 0.259 µg/L to 0.385 µg/L. Neither the federal government nor the State of New Mexico has established a drinking water standard for perchlorate. On January 8, 2009, EPA issued an interim health advisory of 15 µg/L for perchlorate in drinking water.
- **Cyanide, Fluoride, and Nitrate+Nitrite:** The cyanide, fluoride, and nitrate+nitrite (as nitrogen) concentrations at all locations were below the EPA primary drinking water standards.

Metals:

- **Arsenic:** The arsenic concentration in samples ranged from 4.24 µg/L to 11.1 µg/L. The Buckman Well No. 1 primary sample and field duplicate results were above the 10 µg/L EPA MCL for arsenic in drinking water.

- **Chromium:** The filtered chromium concentration in samples ranged from 2.41 µg/L to 6.39 µg/L, below the EPA MCL of 100 µg/L and the New Mexico groundwater standard of 50 µg/L.

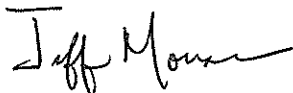
Organics:

- **High Explosives (HE):** No HE compounds were detected.
- **Polychlorinated Biphenyls (PCBs):** No PCBs were detected.
- **Volatile Organic Compounds (VOCs):** No VOCs were detected.
- **Semivolatile Organic Compounds (SVOCs):** No SVOCs were detected.

In summary, all results presented in this report are below EPA MCLs and New Mexico groundwater standards, with the exception of arsenic at Buckman Well No. 1.

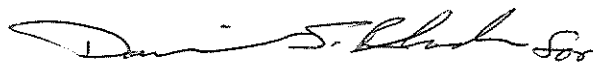
If you have questions, please contact Steve Paris at (505) 606-0915 (smparis@lanl.gov) or Cheryl Rodriguez at (505) 665-5330 (cheryl.rodriguez@nnsa.doe.gov).

Sincerely,



Jeff Mousseau, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,



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

JM/PM/DM/SP/DR:sm

Attachment: CD with the following items – Excel file of the analytical results and glossary of laboratory qualification codes, secondary validation codes, and secondary validation reason codes (LA-UR-14-26424)

Cy: (w/att.)

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