Subject: LANL Sitewide Monitoring Program City of Santa Fe Buckman Water-Supply Wells 2018-2019 SAP

From: SCHIAVO, NICK A. <naschiavo@ci.santa-fe.nm.us>
Sent: Tuesday, April 24, 2018 11:13 AM
To: Ellers, Kate <kellers@lanl.gov>
Cc: Patel, Nita <npatel@lanl.gov>; Cygnarowicz, Robert Michael <ciggy@lanl.gov>
Subject: Re: LANL Sitewide Monitoring Program City of Santa Fe Buckman Water-Supply Wells 2018-2019 SAP

Thank you

Nicolas Schiavo, P.E.

On Apr 24, 2018, at 9:55 AM, Ellers, Kate <kellers@lanl.gov> wrote:

> Hi Nick,
>
> Attached is the Los Alamos National Laboratory Sitewide Monitoring Program, City of Santa Fe Buckman Water-Supply Wells, 2018-2019 Sampling and Analysis Plan.
>
> Please acknowledge receipt of this email by replying to all.
>
> Thank you,
>
> Kate
>
> **Kate Ellers**
> Environmental Remediation-DO
> Adelante Consulting, Inc.
> Office: 505.667.0217
> Cell: 505.699.7705
>
> <LANL Sitewide Monit Prog CoSF Buckman Water-Supply Wells 2017-2018 SAP_042418.pdf>

Los Alamos
NATIONAL LABORATORY
EST. 1943

Associate Directorate for Environmental Management
P.O. Box 1663, MS M992
Los Alamos, New Mexico 87545
(505) 606-2337

EM-LA

Environmental Management
P. O. Box 1663, MS M984
Los Alamos, New Mexico 87545
(505) 665-5658/FAX (505) 606-2132

Date: APR 2 4 2018
Refer To: ADEM-18-0044
LAUR: 18-23375

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, City of Santa Fe Buckman Water-Supply Wells, 2018–2019 Sampling and Analysis Plan

Dear Mr. Schiavo:

Los Alamos National Laboratory (the Laboratory) has sampled Buckman water-supply wells since 2001. The attached 2018–2019 sampling and analysis plan (SAP) represents the Laboratory's sampling and analysis commitment for the period from April 1, 2018, to March 31, 2019. Sampling for this period will begin in June 2018.

The Laboratory will continue to implement the following practices associated with groundwater data collected from Buckman water-supply wells.

1. The Laboratory will provide an automated report of the data upon receipt from the analytical laboratory. Sixty days after the automated report is provided to the City of Santa Fe, the data will be posted to the publicly accessible website, Intellus (http://www.intellusnm.com).
2. If a potential contaminant is detected in a Buckman production well, the Laboratory will work with the Water Division to evaluate the data and review the need to modify the SAP or to collect additional samples to address any questions raised by the potential contaminant.

The attached 2018–2019 SAP is the same as last year's SAP except for the following two updates to Table 2:

1. Boron can be determined from both SW-846:6010 and SW-846:6020 analytical methods. In recent years, however, the contract laboratory has been reporting boron under SW-846:6010. Table 2 has been updated to reflect this change.
2. Gross gamma does not provide value to the Laboratory's Groundwater Monitoring Program and has been removed from the 2019 Interim Facility-Wide Groundwater Monitoring Plan (IFGMP). Table 2 has been updated to reflect this change (i.e., gross gamma has been removed from the EPA:901.1 analyte list).

If you have questions or would like to be briefed on the plan, please contact Nita Patel at (505) 665-9273 (npatel@lanl.gov) or Hai Shen at (505) 665-5046 (hai.shen@em.doe.gov).

Sincerely,

Enrique Torres, Program Director
Environmental Remediation Program
Los Alamos National Laboratory

Sincerely,

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

ET/DR/NP

Attachment: Los Alamos National Laboratory Sitewide Monitoring Program, City of Santa Fe Buckman Water-Supply Wells, 2018–2019 Sampling and Analysis Plan (EP2018-0059)

Cy: (w/att.)
Laurie King, EPA Region 6, Dallas, TX
Alex Puglisi, City of Santa Fe, 801 West San Mateo, Santa Fe, NM 87505
Bill Schneider, City of Santa Fe, 801 West San Mateo, Santa Fe, NM 87505
Victor Archuleta, City of Santa Fe, 801 West San Mateo, Santa Fe, NM 87505
John Kieling, NMED-HWB, 2905 Rodeo Park Drive East, Building 1, Santa Fe, NM 87505
Stephanie Stringer, NMED-DWB, P.O. Box 5469, Santa Fe, NM 87502
Steve Yanicak, NMED-DOE-OB, MS M894
Hai Shen, DOE-EM-LA
Cheryl Rodriguez, DOE-EM-LA
emla.docs@em.doe.gov
Public Reading Room (EPRR)
ADESH Records
PRS Database

Cy: (w/o att./date-stamped letter emailed)
lasomailbox@nnsa.doe.gov
Peter Maggiore, DOE-NA-LA
David Rhodes, DOE-EM-LA
Robert Cygnarowicz, ADEM ER Program
Nita Patel, ADEM ER Program
Enrique Torres, ADEM ER Program
Randy Erickson, ADEM
Jocelyn Buckley, ADESH-EPC-CP
Mike Saladen, ADESH-EPC-CP
Benjamine Roberts, ADESH-EPC-DO
William Mairson, ADESH/PADOPS
Craig Leasure, PADOPS

LOS ALAMOS NATIONAL LABORATORY SITEWIDE MONITORING PROGRAM, CITY OF SANTA FE BUCKMAN WATER-SUPPLY WELLS, 2018–2019 SAMPLING AND ANALYSIS PLAN

Table 1
Sampling and Analysis Plan for the City of Santa Fe
Buckman Water-Supply Wells for the Period April 1, 2018, to March 31, 2019

Location	Analytical Suites[a]										
	Metals		Organics				Radionuclides		Inorganics		
	Metals	Hexavalent Chromium	VOCs	SVOCs	PCBs	HEXP	Radionuclides	Low-Level Tritium	General Inorganics	Nitrate+nitrite	Perchlorate
Buckman No. 1	Q3, Q1	Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	—[b]	—
Buckman No. 6	Q3, Q1	Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	—	—
Buckman No. 8	Q3, Q1	Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	Q3, Q1	—	—
SF-3A	—	Q1	—	—	—	—	—	Q1	—	Q1	Q1
SF-4A	—	Q1	—	—	—	—	—	Q1	—	Q1	Q1

Notes: Sampling schedule: Q3 = Apr–Jun 2018; Q4 = Jul–Sep 2018; Q1 = Oct–Dec 2018; Q2 = Jan–Mar 2019. Quality control samples will be collected in accordance with Appendix D of the IFGMP for the associated monitoring year.

[a] Table 2 of this SAP presents the analytical groups, sample field preparation, analytical methods, and analytes for the analytical suites specified in Table 1.

[b] — = This analytical suite is not scheduled to be collected for this location.

Table 2
Analytes, Field Preparation, and Analytical Methods Used by EPA Contract Laboratory Program Laboratories for Samples Collected under the SAP for the City of Santa Fe Water-Supply Wells

Analytical Suite	Analytical Group	Field Preparation	Analytical Method	Analytes
Metals	WSP-All Metals	Filtered	SM:A2340	Hardness
			SW-846:6010	Aluminum, barium, beryllium, boron, calcium, cobalt, copper, iron, magnesium, manganese, potassium, silicon dioxide, sodium, strontium, tin, vanadium, zinc
			SW-846:6020	Antimony, arsenic, cadmium, chromium, lead, molybdenum, nickel, selenium, silver, thallium, uranium
			EPA:245.2	Mercury
	MSGP-Hg	Unfiltered	EPA:245.2	Mercury
Hexavalent Chromium	WSP-HexCr	Unfiltered	EPA:218.7	Hexavalent chromium

Table 2 (continued)

Analytical Suite	Analytical Group	Field Preparation	Analytical Method	Analytes
VOCs[a]	WSP-8260B-VOA	Unfiltered	SW-846:8260	See Table 3
SVOCs[b]	WSP-8270C-SVOA	Unfiltered	SW-846:8270	See Table 3
PCBs[c]	WSP-8082-PCB	Unfiltered	SW-846:8082	See Table 3
HEXP[d]	WSP-8330B-NMED HEXP	Unfiltered	SW-846:8330B	See Table 3
Radionuclides	WSP-GrossA/B	Unfiltered	EPA:900	Gross alpha, gross beta
	WSP-RAD	Unfiltered	EPA:901.1	Cesium-137, cobalt-60, neptunium-237, potassium-40, sodium-22
			EPA:905.0	Strontium-90
			HASL-300:AM-241	Americium-241
			HASL-300:ISOPU	Plutonium-238, plutonium-239/240
			HASL-300:ISOU	Uranium-234, uranium-235/236, uranium-238
	Ra-226+228	Unfiltered	EPA:903.1	Radium-226
			EPA:904	Radium-228
Low-Level Tritium	WSP-LL-H-3	Unfiltered	Generic:Low_Level_Tritium	Tritium
General Inorganics	WSP-GENINORG+ Perchlorate	Filtered	EPA:120.1	Specific conductance
			EPA:150.1	Acidity or alkalinity of a solution
			EPA:160.1	Total dissolved solids
			EPA:300.0	Bromide, chloride, fluoride, sulfate
			EPA:310.1	Alkalinity-CO_3, Alkalinity-CO_3 + HCO_3
			SW-846:6010	Silicon dioxide
			SW-846:6850	Perchlorate
General Inorganics (continued)	WSP-NH_3+NO_3/NO_2+ PO_4	Filtered	EPA:350.1	Ammonia as nitrogen
			EPA:353.2	Nitrate-nitrite as nitrogen
			EPA:365.4	Total phosphate as phosphorus
	WSP-TKN+TOC	Unfiltered	EPA:351.2	Total Kjeldahl nitrogen
			SW-846:9060	Total organic carbon
	WSP-CN(T)	Unfiltered	EPA:335.4	Cyanide (Total)
Nitrate+ Nitrite	NO_3NO_2	Filtered	EPA:353.2	Nitrate-nitrite as nitrogen
Perchlorate	WSP-CLO4	Filtered	SW-846:6850	Perchlorate

[a] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] HEXP = High explosives.

Table 3
Analytical Methods Used by Contract Laboratories for
Samples Collected under the SAP for the City of Santa Fe Water-Supply Wells

Symbol or CAS No.	Analyte
Analytical Suite: VOCs **Analytical Group: WSP-8260B-VOA** **Analytical Method: SW-846:8260**	
67-64-1	Acetone
75-05-8	Acetonitrile
107-02-8	Acrolein
107-13-1	Acrylonitrile
71-43-2	Benzene
108-86-1	Bromobenzene
74-97-5	Bromochloromethane
75-27-4	Bromodichloromethane
75-25-2	Bromoform
74-83-9	Bromomethane
71-36-3	Butanol[1-]
78-93-3	Butanone[2-]
104-51-8	Butylbenzene[n-]
135-98-8	Butylbenzene[sec-]
98-06-6	Butylbenzene[tert-]
75-15-0	Carbon Disulfide
56-23-5	Carbon Tetrachloride
126-99-8	Chloro-1,3-butadiene[2-]
107-05-1	Chloro-1-propene[3-]
108-90-7	Chlorobenzene
124-48-1	Chlorodibromomethane
75-00-3	Chloroethane
67-66-3	Chloroform
74-87-3	Chloromethane
95-49-8	Chlorotoluene[2-]
106-43-4	Chlorotoluene[4-]
96-12-8	Dibromo-3-Chloropropane[1,2-]
106-93-4	Dibromoethane[1,2-]
74-95-3	Dibromomethane
95-50-1	Dichlorobenzene[1,2-]
541-73-1	Dichlorobenzene[1,3-]
106-46-7	Dichlorobenzene[1,4-]
75-71-8	Dichlorodifluoromethane
75-34-3	Dichloroethane[1,1-]

Table 3 (continued)

Symbol or CAS No.	Analyte
107-06-2	Dichloroethane[1,2-]
75-35-4	Dichloroethene[1,1-]
540-59-0	Dichloroethene[cis/trans-1,2-]
156-59-2	Dichloroethene[cis-1,2-]
156-60-5	Dichloroethene[trans-1,2-]
78-87-5	Dichloropropane[1,2-]
142-28-9	Dichloropropane[1,3-]
594-20-7	Dichloropropane[2,2-]
563-58-6	Dichloropropene[1,1-]
10061-01-5	Dichloropropene[cis-1,3-]
10061-02-6	Dichloropropene[trans-1,3-]
60-29-7	Diethyl Ether
123-91-1	Dioxane[1,4-]
97-63-2	Ethyl Methacrylate
100-41-4	Ethylbenzene
87-68-3	Hexachlorobutadiene
591-78-6	Hexanone[2-]
74-88-4	Iodomethane
78-83-1	Isobutyl alcohol
98-82-8	Isopropylbenzene
99-87-6	Isopropyltoluene[4-]
126-98-7	Methacrylonitrile
80-62-6	Methyl Methacrylate
1634-04-4	Methyl tert-Butyl Ether
108-10-1	Methyl-2-pentanone[4-]
75-09-2	Methylene Chloride
91-20-3	Naphthalene
107-12-0	Propionitrile
103-65-1	Propylbenzene[1-]
100-42-5	Styrene
630-20-6	Tetrachloroethane[1,1,1,2-]
79-34-5	Tetrachloroethane[1,1,2,2-]
127-18-4	Tetrachloroethene
108-88-3	Toluene
76-13-1	Trichloro-1,2,2-trifluoroethane[1,1,2-]
87-61-6	Trichlorobenzene[1,2,3-]
120-82-1	Trichlorobenzene[1,2,4-]
71-55-6	Trichloroethane[1,1,1-]
79-00-5	Trichloroethane[1,1,2-]

Table 3 (continued)

Symbol or CAS No.	Analyte
79-01-6	Trichloroethene
75-69-4	Trichlorofluoromethane
96-18-4	Trichloropropane[1,2,3-]
95-63-6	Trimethylbenzene[1,2,4-]
108-67-8	Trimethylbenzene[1,3,5-]
108-05-4	Vinyl acetate
75-01-4	Vinyl Chloride
95-47-6	Xylene[1,2-]
Xylene[m+p]	Xylene[1,3-]+Xylene[1,4-]
Analytical Suite: SVOCs **Analytical Group: WSP-8270C-SVOA** **Analytical Method: SW-846:8270**	
83-32-9	Acenaphthene
208-96-8	Acenaphthylene
62-53-3	Aniline
120-12-7	Anthracene
1912-24-9	Atrazine
103-33-3	Azobenzene
92-87-5	Benzidine
56-55-3	Benzo(a)anthracene
50-32-8	Benzo(a)pyrene
205-99-2	Benzo(b)fluoranthene
191-24-2	Benzo(g,h,i)perylene
207-08-9	Benzo(k)fluoranthene
65-85-0	Benzoic Acid
100-51-6	Benzyl Alcohol
111-91-1	Bis(2-chloroethoxy)methane
111-44-4	Bis(2-chloroethyl)ether
117-81-7	Bis(2-ethylhexyl)phthalate
101-55-3	Bromophenyl-phenylether[4-]
85-68-7	Butylbenzylphthalate
59-50-7	Chloro-3-methylphenol[4-]
106-47-8	Chloroaniline[4-]
91-58-7	Chloronaphthalene[2-]
95-57-8	Chlorophenol[2-]
7005-72-3	Chlorophenyl-phenyl[4-] Ether
218-01-9	Chrysene
53-70-3	Dibenz(a,h)anthracene
132-64-9	Dibenzofuran
95-50-1	Dichlorobenzene[1,2-]

Table 3 (continued)

Symbol or CAS No.	Analyte
541-73-1	Dichlorobenzene[1,3-]
106-46-7	Dichlorobenzene[1,4-]
91-94-1	Dichlorobenzidine[3,3'-]
120-83-2	Dichlorophenol[2,4-]
84-66-2	Diethylphthalate
131-11-3	Dimethyl Phthalate
105-67-9	Dimethylphenol[2,4-]
84-74-2	Di-n-butylphthalate
534-52-1	Dinitro-2-methylphenol[4,6-]
51-28-5	Dinitrophenol[2,4-]
121-14-2	Dinitrotoluene[2,4-]
606-20-2	Dinitrotoluene[2,6-]
117-84-0	Di-n-octylphthalate
88-85-7	Dinoseb
123-91-1	Dioxane[1,4-]
122-39-4	Diphenylamine
206-44-0	Fluoranthene
86-73-7	Fluorene
118-74-1	Hexachlorobenzene
87-68-3	Hexachlorobutadiene
77-47-4	Hexachlorocyclopentadiene
67-72-1	Hexachloroethane
193-39-5	Indeno(1,2,3-cd)pyrene
78-59-1	Isophorone
90-12-0	Methylnaphthalene[1-]
91-57-6	Methylnaphthalene[2-]
95-48-7	Methylphenol[2-]
106-44-5	Methylphenol[4-]
91-20-3	Naphthalene
88-74-4	Nitroaniline[2-]
99-09-2	Nitroaniline[3-]
100-01-6	Nitroaniline[4-]
98-95-3	Nitrobenzene
88-75-5	Nitrophenol[2-]
100-02-7	Nitrophenol[4-]
55-18-5	Nitrosodiethylamine[N-]
62-75-9	Nitrosodimethylamine[N-]
924-16-3	Nitroso-di-n-butylamine[N-]
621-64-7	Nitroso-di-n-propylamine[N-]

Table 3 (continued)

Symbol or CAS No.	Analyte
86-30-6	Nitrosodiphenylamine[N-]
930-55-2	Nitrosopyrrolidine[N-]
108-60-1	Oxybis(1-chloropropane)[2,2'-]
608-93-5	Pentachlorobenzene
87-86-5	Pentachlorophenol
85-01-8	Phenanthrene
108-95-2	Phenol
129-00-0	Pyrene
110-86-1	Pyridine
95-94-3	Tetrachlorobenzene[1,2,4,5]
58-90-2	Tetrachlorophenol[2,3,4,6-]
120-82-1	Trichlorobenzene[1,2,4-]
95-95-4	Trichlorophenol[2,4,5-]
88-06-2	Trichlorophenol[2,4,6-]
Analytical Suite: Polychlorinated Biphenyls (PCBs) **Analytical Group: WSP-8082-PCB** **Analytical Method: SW-846:8082**	
12674-11-2	Aroclor-1016
11104-28-2	Aroclor-1221
11141-16-5	Aroclor-1232
53469-21-9	Aroclor-1242
12672-29-6	Aroclor-1248
11097-69-1	Aroclor-1254
11096-82-5	Aroclor-1260
37324-23-5	Aroclor-1262
Analytical Suite: HEXP (High Explosives) **Analytical Group: WSP-8330B-NMED HEXP** **Analytical Method: SW-846:8330B**	
6629-29-4	2,4-Diamino-6-nitrotoluene
59229-75-3	2,6-Diamino-4-nitrotoluene
618-87-1	3,5-Dinitroaniline
19406-51-0	Amino-2,6-dinitrotoluene[4-]
35572-78-2	Amino-4,6-dinitrotoluene[2-]
99-65-0	Dinitrobenzene[1,3-]
121-14-2	Dinitrotoluene[2,4-]
606-20-2	Dinitrotoluene[2,6-]
2691-41-0	HMX
98-95-3	Nitrobenzene
88-72-2	Nitrotoluene[2-]
99-08-1	Nitrotoluene[3-]

Table 3 (continued)

Symbol or CAS No.	Analyte
99-99-0	Nitrotoluene[4-]
78-11-5	PETN
121-82-4	RDX
3058-38-6	TATB
479-45-8	Tetryl
99-35-4	Trinitrobenzene[1,3,5-]
118-96-7	Trinitrotoluene[2,4,6-]
78-30-8	Tris (o-cresyl) phosphate

Note: Table 3 is referenced in Table 2 and serves to complete the analyte lists in Table 2.