



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

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EMLA-2020-1103-02-001

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



Subject: Submittal of November 2019 Replacement Pages for the Interim Facility-Wide Groundwater Monitoring Plan for the 2020 Monitoring Year, October 2019–September 2020

Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the replacement pages for the “Interim Facility-Wide Groundwater Monitoring Plan for the 2020 Monitoring Year, October 2019–September 2020” (MY 2020 IFGMP). Also enclosed is an electronic copy of a redline strikeout version of the pages that were revised. These replacement pages are voluntarily submitted to update the following inconsistencies found in the MY 2020 IFGMP:

1. Table 1.7-2, “Analytes, Field Preparation, and Analytical Methods Used by Accredited Contract Laboratories for Samples Collected under the IFGMP,” has been revised. This table has been updated to reflect the use of analytical method SW-846: 7470A for mercury analysis to make the analysis more consistent with the Compliance Order on Consent, which requests the use of SW-846 methods where applicable. Additionally, the analytical suite for prometon has been updated to include sulfolane with the SW-846:8270 analytical method, which is used for semivolatile organic compound (SVOC) analyses. As stated in the footnote in this table “Prometon and sulfolane are currently sampled as part of the SVOC analytical suite. At locations where SVOCs are not collected, this abbreviated suite is used to sample for these new toxic pollutants.”
2. Appendix B Table B-4.1-1, “Analytical Methods Used by Contract Laboratories for Samples Collected under the IFGMP,” has been updated to include prometon and sulfolane as part of the SVOC analytical suite.
3. Table 1.8-1, “Sampling Schedule for MY 2020: October 1, 2019–September 30, 2020,” has been updated to include the scheduling of Per- and polyfluoroalkyl substances (PFAs), prometon, and sulfolane sampling early in the MY.
4. Tables 2.4-1 through 8.3-1, the sampling frequency and schedule tables, have been updated to correctly reflect how samples for prometon and sulfolane are collected. These two analytes are part of the SVOC suite. However, when SVOCs are not scheduled to be sampled, this abbreviated suite is used to ensure that these new toxic pollutants are sampled.

5. Tables 2.4-1 and 8.3-1 have been updated to reflect the configurations of wells R-5 and R-31 following their conversion from Westbay wells. R-5 is now a single-screened well consisting of screen 2 (R-5 S2), and R-31 is a dual-screened well consisting of screens 3 and 4 (R-31 S3 and R-31 S4).

If you have any 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
Compliance and Permitting Manager
Environmental Management
Los Alamos Field Office

Enclosures: Two hard copies with electronic files (including a redline strikeout version):
November 2019 replacement pages for the Interim Facility-Wide Groundwater Monitoring Plan for the 2020 Monitoring Year, October 2019–September 2020 (EM2019-0426)

CC (letter with hard-copy enclosure[s]):
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Table 1.7-2
Analytes, Field Preparation, and Analytical Methods Used by
Accredited Contract Laboratories for Samples Collected under the IFGMP

Analytical Suite	Field Preparation	Analytical Method	Analytes
Metals ^{a, b}	Unfiltered	SW-846:6010	Aluminum
		SW-846:7470A	Mercury
		SW-846:6020	Selenium
	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
		SW-846:7470A	Mercury
	Unfiltered	SW-846:7470A	Mercury
VOCs	Unfiltered	SW-846:8260	See Table B-4.1-1
SVOCs	Unfiltered	SW-846:8270	See Table B-4.1-1
Low-level 1,4-dioxane	Unfiltered	SW-846-8270-SIM	1,4-dioxane
Prometon and sulfolane ^c	Unfiltered	SW-846:8270	Prometon (pesticide), sulfolane (solvent)
Low-level nitrosamines	Unfiltered	Proprietary HRGC/MS	Nitrosodiethylamine[N-], Nitrosodimethylamine[N-], Nitroso-di-n-butylamine[N-], Nitroso-di-n-propylamine[N-], Nitrosopyrrolidine[N-]
PCBs	Unfiltered	SW-846:8082	See Table B-4.1-1
HEXP ^d	Unfiltered	SW-846:8330B	See Table B-4.1-1
HEXMOD ^e	Unfiltered	SW-846:8330B	See Table B-4.1-1
Per- and polyfluoroalkyl substances (PFAS)	Unfiltered	EPA 537.1 Modified	Perfluorohexane sulfonic acid (PFHxS), perfluorooctane sulfate (PFOS), perfluorooctanoic acid (PFOA)
Dioxins/Furans	Unfiltered	SW-846:8290	See Table B-4.1-1

Table 1.7-2 (continued)

Analytical Suite	Field Preparation	Analytical Method	Analytes
Radionuclides	Unfiltered	EPA:900	Gross alpha, gross beta
	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
	Unfiltered	HASL-300:ISOU	Uranium-234, uranium-235/236, uranium-238
		EPA:903.1	Radium-226
		EPA:904	Radium-228
		Generic:radium by calculation	Radium-226+228
Tritium	Unfiltered	EPA:906.0	Tritium
Low-level tritium	Unfiltered	Generic: Low-Level Tritium	Tritium
General inorganics	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
	Filtered	SW-846:6850	Perchlorate
		EPA:350.1	Ammonia as nitrogen
		EPA:353.2	Nitrate-nitrite as nitrogen
	Unfiltered	EPA:365.4	Total phosphate as phosphorus
		EPA:351.2	Total Kjeldahl nitrogen
		SW-846:9060	Total organic carbon
	Unfiltered	EPA:335.4	Cyanide (Total)

^a The following metals suite analytical groups and field preparations apply to groundwater samples (i.e., alluvial, intermediate, regional, and springs): Filtered metals and unfiltered mercury.

^b The following metals suite analytical groups and field preparations apply to surface water samples (i.e., base flow): Unfiltered metals and filtered metals. Additional standalone unfiltered mercury is not required as this is collected as part of the unfiltered metals suite.

^c Prometon and sulfolane are currently sampled as part of the SVOC analytical suite. At locations where SVOCs are not collect, this abbreviated suite is used to sample for these new toxic pollutants.

^d HEXP (analytical suite) = Analysis of samples for HE by SW-846:8330B.

^e HEXMOD (analytical suite) = Analysis of samples for HE and RDX-degradation products by SW-846:8330B.

Table 1.8-1
Sampling Schedule for MY 2020: October 1, 2019–September 30, 2020

Primary Watershed/ Monitoring Group	Sampling Table	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
		Oct-Dec 2019	Jan-Mar 2020	Apr-Jun 2020	Jul-Sep 2020
Pajarito Watershed					
TA-54	Table 5.4-1	S, A, V (2020) ^a	— ^b	S	—
General Surveillance	Table 8.3-1	Q ^c , S ^c	Q	Q, S, A, V (2020)	Q
Mortandad and Sandia Canyons					
Chromium Investigation	Table 3.4-1	Q, S, A, B (2020)	Q ^d	Q, S	Q
MDA C	Table 4.4-1	A,B (2020), V (2020)	—	—	—
General Surveillance	Table 8.3-1	S, A ^e , B ^e	—	S	A, B (2020), V (2020)
Los Alamos and Pueblo Canyons					
TA-21	Table 2.4-1	Q ^c	Q	Q	Q, A, B (2020)
General Surveillance	Table 8.3-1	S ^c	—	S, A, B (2020), V (2020)	—
Water/Cañon de Valle Watershed^f					
TA-16 260	Table 6.4-1	Q ^c	Q, S, A, B (2020)	Q	Q, S, V (2020)
General Surveillance	Table 8.3-1	—	S, A	—	S
Ancho Watershed					
MDA AB	Table 7.4-1	—	—	—	A
General Surveillance	Table 8.3-1	Q ^c	Q	Q	Q, A
White Rock Canyon					
General Surveillance	Table 8.3-1	S, A, B (2020)	—	S	—
Characterization					
All Watersheds	Characterization	Q	Q	Q	Q

Notes: Sampling frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr);
B = biennial (1 time/2 yr); V = quinquennial (1 time/5 yr).

^a 2020 = Monitoring year that biennial and quinquennial sample is to be collected.

^b — = No samples are scheduled to be collected from this monitoring group during this period.

^c PFAs, prometon and sulfolane (when SVOCs are not sampled), shall be collected as part of the first sampling event of the MY.
This replaces the need to sample these analytes as part of the annual sampling conducted later in the MY.

^d An 8-hr extended purge will be conducted at R-62 during the second quarter (January–March) of MY 2020.

^e R-10a, R-10 screen 1 (S1), R-10 S2, R-34.

^f Semiannual sampling events in the Water/Cañon de Valle watershed will be conducted in March and August, when possible, to improve the likelihood that water will be sufficient to collect samples from base flow, springs, and alluvial well locations.

Table 1.9-1
Frequencies for Locations Assigned to Water-Level Monitoring Only

Assigned Monitoring Group	Location	Rationale for Selection of Location	Source Aquifer	Water Level*
Los Alamos/Pueblo Canyons Watershed				
General Surveillance	LAO-4.5c	Monitors location downcanyon below confluence of Los Alamos/DP Canyon.	Alluvial	C
	PAO-2	Monitors location in upper Pueblo Canyon.	Alluvial	C
Mortandad Canyon Watershed				
General Surveillance	MCO-2	Well monitors Effluent Canyon above the TA-50 outfall.	Alluvial	C
	MCO-4B	Well monitors upper part of Mortandad Canyon. Data will be used to assess the influence from reductions in discharge from the TA-50 RLWTF outfall.	Alluvial	C
	MCO-6	Well monitors upper part of Mortandad Canyon. Data will be used to assess the influence from reductions in discharge from the TA-50 RLWTF outfall.	Alluvial	C
Chromium Investigation Monitoring Group	MCA-9, MCO-9, MCO-12	Wells meet Discharge Permit 1793 requirement to monitor historically dry wells for verification that land application of waste water does not result in local saturation.	Alluvial	M
	MCOI-4	Well monitors upper Mortandad and Ten Site Canyons but no longer yields sufficient water for sampling.	Intermediate	C
	R-61 S2	Water levels should be monitored to assess hydraulic responses from pumping at production wells PM-4 and PM-5 and at other Chromium Investigation monitoring group wells during aquifer testing.	Regional	C
TA-54 Monitoring Group	R-41 S1	Well located east of MDA G at TA-54. Screen 1 has been dry since well installation (March 2009). Water level should be checked during sampling of R-41 S2.	Intermediate	Q ^{HD}
Pajarito Canyon Watershed				
General Surveillance	PCAO-7b2	Well characterizes potential impacts from TA-18.	Alluvial	C
Water Canyon/Cañon de Valle Watershed				
TA-16 Monitoring Group	CdV-9-1(i) PZ-1 CdV-9-1(i) PZ-2	Intermediate well located north of Cañon de Valle. Completed on January 19, 2015.	Intermediate	C

* Sampling frequency: C = continuous; M = monthly (12 times/yr at set time periods); Q = quarterly (4 times/yr); The superscript HD indicates this sampling location is historically dry. Continuous monitoring for groundwater refers to the collection of groundwater level measurements by a transducer placed in a well and programmed to collect groundwater level measurements at highly frequent intervals (e.g., every 60 or 120 min daily throughout the year).

Table 2.4-1
Interim Monitoring Plan for TA-21 Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
LADP-3	Los Alamos	TA-21	Intermediate	A	B (2020) ^d	B (2020)	A	A	— ^e	—	—	—	A	—	B (2020)	A
LAOI(a)-1.1	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	—	—	—	—	A	—	B (2020)	A
LAOI-3.2	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	—	—	—	—	A	A	—	A
LAOI-3.2a	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	—	—	—	—	A	A	—	A
LAOI-7	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	—	—	—	—	A	A	—	A
R-6i	Los Alamos	TA-21	Intermediate	A	A	B (2020)	A	A	—	—	—	—	A	A	—	A
TA-53i	Sandia	TA-21	Intermediate	A	A	B (2020)	A	A	—	—	—	—	A	—	A	A
R-9i S1	Los Alamos	TA-21	Intermediate	Q	Q	Q	Q	A	A	A	A	A	A	—	A	Q
R-5 S2	Pueblo	TA-21	Intermediate	Q	Q	Q	Q	A	A	A	A	A	A	—	A	Q
R-6** f	Los Alamos	TA-21	Regional	A	A	B (2020)	A	A	—	—	—	—	A	—	A	A
R-7 S3	Los Alamos	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	—	A	Q
R-8 S1	Los Alamos	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	—	A	Q
R-8 S2	Los Alamos	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	—	A	Q
R-64	Los Alamos	TA-21	Regional	A	A	B (2020)	A	A	—	—	—	—	A	—	A	A
R-66	Los Alamos	TA-21	Regional	A	A	B (2020)	A	A	—	—	—	—	A	—	A	A
R-9	Los Alamos	TA-21	Regional	A	B (2020)	B (2020)	A	A	—	—	—	—	A	—	A	A

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^e — = This analytical suite is not scheduled to be collected at this location.

^f Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

Table 3.4-1
Interim Monitoring Plan for Chromium Investigation Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
MCOI-5	Mortandad	Chromium Investigation	Intermediate	Q	S	S	A	— ^d	A	A	—	—	—	A	A	—	Q
MCOI-6	Mortandad	Chromium Investigation	Intermediate	Q	S	S	A	—	A	A	B (2020) ^e	—	—	A	A	—	Q
SCI-1	Sandia	Chromium Investigation	Intermediate	S	B (2020)	B (2020)	A	—	A	A	B (2020)	—	—	A	—	A	S
SCI-2	Sandia	Chromium Investigation	Intermediate	Q	B (2020)	B (2020)	A	—	A	A	B (2020)	—	—	A	A	—	Q
R-1	Mortandad	Chromium Investigation	Regional	S	B (2020)	B (2020)	A	—	A	A	B (2020)	—	—	B (2020)	—	A	S
R-11	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-13** ^f	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	A	Q
R-15	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	B (2020)	Q
R-28 ^g	Mortandad	Chromium Investigation	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	—
R-33 S1**	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	A	Q
R-33 S2**	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	A	Q
R-35a	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-35b	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-36	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	S	Q
R-42 ^g	Mortandad	Chromium Investigation	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	—
R-43 S1	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	A	Q
R-43 S2	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	A	Q
R-44 S1	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-44 S2	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-45 S1	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-45 S2	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-50 S1	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-50 S2**	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q
R-61 S1	Mortandad	Chromium Investigation	Regional	Q	—	—	A	A	A	A	—	—	—	—	—	Q	Q
R-62 ^h	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	A	Q
R-67	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	S	Q

Table 3.4-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-70 S1	Mortandad	Chromium Investigation	Regional	Q	Q	Q	A	—	A	A	—	—	—	Q	—	Q	Q
R-70 S2	Mortandad	Chromium Investigation	Regional	Q	Q	Q	A	—	A	A	—	—	—	Q	—	Q	Q
SIMR-2 ⁱ	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—	A	A	—	—	—	B (2020)	—	Q	Q

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d — = This analytical suite is not scheduled to be collected at this location.

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^g Gray shading indicates wells that are included in the pilot amendments test and will be sampled per the NMED-approved work plan.

^h Conduct an 8-hr extended purge at R-62 during the second quarter (January–March) of MY 2020.

ⁱ Orange shading indicates sampling location is on Pueblo de San Ildefonso land.

Table 4.4-1
Interim Monitoring Plan for MDA C Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Low-Level Nitrosamines	PFAS ^b	PCBs ^c	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-14 S1** ^d	Mortandad	MDA C	Regional	A	A	B (2020) ^e	A	A	A	B (2020)	V (2020)	— ^f	B (2020)	—	A	A
R-46**	Mortandad	MDA C	Regional	A	A	B (2020)	A	A	A	B (2020)	V (2020)	—	B (2020)	—	A	A
R-60**	Mortandad	MDA C	Regional	A	A	B (2020)	A	A	A	B (2020)	V (2020)	—	A	—	A	A

Notes: Sampling suites and frequencies: A = annual (1 time/yr); B = biennial (1 time/2 yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f — = This analytical suite is not scheduled to be collected at this location.

Table 5.4-1
Interim Monitoring Plan for TA-54 Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEX ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-23i S1	Pajarito	TA-54	Intermediate	A	S	A	A	— ^d	A	A	V (2020) ^e	V (2020)	—	A	—	A	A
R-23i S2	Pajarito	TA-54	Intermediate	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-23i S3	Pajarito	TA-54	Intermediate	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-37 S1	Mortandad	TA-54	Intermediate	A	S	S	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-40 Si	Pajarito	TA-54	Intermediate	A	—	—	—	A	—	A	—	—	—	—	—	A	A
R-40 S1	Pajarito	TA-54	Intermediate	S	S	—	A	A	A	A	—	—	—	—	—	A	S
R-55i	Mortandad	TA-54	Intermediate	—	—	—	—	A	—	A	—	—	—	—	—	A	—
R-20 S1	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-20 S2	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-21** ^f	Mortandad	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-23	Pajarito	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-32 S1	Pajarito	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-37 S2**	Mortandad	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-38**	Mortandad	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-39**	Pajarito	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-40 S2**	Pajarito	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-41 S2	Pajarito	TA-54	Regional	A	S	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-49 S1**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-49 S2**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-51 S1**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-51 S2**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-52 S1**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-52 S2**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-53 S1**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-53 S2**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-54 S1	Pajarito	TA-54	Regional	—	—	—	—	A	—	A	—	—	—	—	—	A	—
R-54 S2**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-55 S1	Mortandad	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-55 S2	Mortandad	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A

Table 5.4-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCS ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Low-Level Tritium	General Inorganics	
R-56 S1**	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020) ^d	V (2020)	— ^e	A	—	A	A
R-56 S2** ^f	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	V (2020)	V (2020)	—	A	—	A	A
R-57 S1 ^g **	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	A	V (2020)	A	A	—	A	A
R-57 S2 ^g **	Pajarito	TA-54	Regional	A	A	A	A	—	A	A	A	V (2020)	A	A	—	A	A

Notes: Sampling suites and frequencies: S = semiannual (2 times/yr); A = annual (1 time/yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d — = This analytical suite is not scheduled to be collected at this location.

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^g The IFGMP sampling and analysis specified for R-57 S1 and R-57 S2 for analysis of VOCs, SVOCs, and PCBs also satisfies the TA-54 Area G PCB compliance monitoring requirements.

Table 6.4-1
Interim Monitoring Plan for TA-16 260 Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXMOD ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
Canon de Valle below MDA P ^d	Water	TA-16 260	Base flow	S	S	B (2020) ^e	A	— ^f	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Between E252 and Water at Beta	Water	TA-16 260	Base flow	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Water at Beta	Water	TA-16 260	Base flow	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Pajarito below S&N Ancho E Basin Confluence	Pajarito	TA-16 260	Base flow	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Bulldog Spring	Pajarito	TA-16 260	Spring	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
SWSC Spring	Water	TA-16 260	Spring	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Burning Ground Spring	Water	TA-16 260	Spring	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	A	S
Martin Spring	Water	TA-16 260	Spring	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	A	S
16-61439 (alias: PRB Alluvial Seep)	Water	TA-16 260	Spring	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
FLC-16-25280	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-02656	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-02657r	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-02659	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-611923	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
MSC-16-06293	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
MSC-16-06294	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-611937	Water	TA-16 260	Alluvial	S	S	B (2020)	A	—	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
16-26644	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
CdV-9-1(i) S1	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	V (2020)	Q	A	B (2020)	—	A	S
CdV-16-1(i)	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
CdV-16-2(i)r	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
CdV-16-4ip S1	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	V (2020)	Q	V (2020)	B (2020)	—	A	S
CdV-37-1(i)**g	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	S	—	B (2020)	—	A	S
R-25b	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	S	—	B (2020)	—	A	S
R-26 PZ-2	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	S	—	B (2020)	—	A	S
R-26 S1**	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	S	—	B (2020)	—	A	S
R-47i**	Water	TA-16 260	Intermediate	S	S	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
R-63i	Water	TA-16 260	Intermediate	S	S	—	A	A	A	A	—	S	—	A	—	A	S
16-612309 (alias: Surge Bed Monitoring Well)	Water	TA-16 260	Intermediate	S	S	S	A	—	A	A	—	S	—	—	—	—	S

Table 6.4-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCS	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXMOD ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-47**	Water	TA-16 260	Regional	S	Q	B (2020)	A	—	A	A	V (2020)	Q	V (2020)	B (2020)	—	A	S
CdV-R-15-3 S4	Water	TA-16 260	Regional	S	S	B (2020)	A	—	A	A	—	S	—	B (2020)	—	A	S
CdV-R-37-2 S2	Water	TA-16 260	Regional	A	—	—	A	A	A	A	—	A	—	—	—	A	A
R-18	Pajarito	TA-16 260	Regional	S	Q	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
R-48**	Water	TA-16 260	Regional	S	S	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
R-58	Water	TA-16 260	Regional	S	Q	B (2020)	A	—	A	A	V (2020)	Q	V (2020)	B (2020)	—	A	S
R-63	Water	TA-16 260	Regional	S	S	B (2020)	A	—	A	A	—	Q	—	B (2020)	—	A	S
R-68	Water	TA-16 260	Regional	S	Q	S	A	—	A	A	—	Q	—	B (2020)	—	A	S
R-69 S1 ^h	Water	TA-16 260	Regional	S	Q	S	A	—	A	A	—	Q	—	S	—	S	S
R-69 S2 ^h	Water	TA-16 260	Regional	S	Q	S	A	—	A	A	—	Q	—	S	—	S	S

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluoroctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXMOD = Analytical suite for analysis of samples for high explosives and RDX-(hexahydro-1,3,5-trinitro-1,3,5-triazine) degradation products by SW-846:8330B.

^d Blue shading indicates a long-term monitoring locations per Appendix A of the "Remedy Completion Report for Corrective Measures Implementation at Consolidated Unit 16-021 (c)-99" (LANL 2017, 602597)

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f — = This analytical suite is not scheduled to be collected at this location.

^g Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^h Propose reducing sampling frequency beginning Q2 (following completion of first four rounds of sampling) to align with R-68 sampling plan. See Table H-5 R-69 S1 and S2 2019 for MY 2020 Q1 sampling suite.

Table 7.4-1
Interim Monitoring Plan for MDA AB Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-27 ^{**d}	Water	MDA AB	Intermediate	A	A	B (2020) ^e	A	A	— ^f	—	—	A	—	A	A	A
R-27 ^{**}	Water	MDA AB	Regional	A	A	B (2020)	A	A	—	—	—	A	—	A	A	A
R-29	Ancho	MDA AB	Regional	A	A	B (2020)	A	A	—	A	—	A	—	A	—	A
R-30 ^{**}	Ancho	MDA AB	Regional	A	A	B (2020)	A	A	—	A	—	A	—	A	—	A

Notes: Sampling suites and frequencies: A = annual (1 time/yr); B = biennial (1 time/2 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f — = This analytical suite is not scheduled to be collected at this location.

Table 8.3-1
Interim Monitoring Plan for General Surveillance Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEX ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
LA Canyon near Otowi Bridge ^d	Los Alamos	General Surveillance	Base flow	S	S	S	A	— ^e	A	A	V (2020) ^f	T (2021) ^g	V (2020)	S	—	S	S
DP Spring	Los Alamos	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A
Los Alamos Spring	Los Alamos	General Surveillance	Spring	A	A	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	A	—	A	A
Vine Tree Spring	Los Alamos	General Surveillance	Spring	S	S	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	S	—	S	S
LDAO-1b	Los Alamos	General Surveillance	Alluvial	A	A	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	A	—	—	A
LDAO-4	Los Alamos	General Surveillance	Alluvial	A	A	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	A	—	—	A
LAO-1.6g	Los Alamos	General Surveillance	Alluvial	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A
LAO-3a	Los Alamos	General Surveillance	Alluvial	A	B (2020)	B (2020)	A	—	A	A	V (2020)	—	V (2020)	A	—	—	A
LAUZ-1	Los Alamos	General Surveillance	Alluvial	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A
PAO-5n	Pueblo	General Surveillance	Alluvial	A	B (2020)	B (2020)	A	—	A	A	V (2020)	—	V (2020)	A	—	—	A
POI-4	Pueblo	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	B (2020)	A
R-3i	Pueblo	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	B (2020)	A
TW-2Ar	Pueblo	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	B (2020)	—	A
R-2** ^h	Pueblo	General Surveillance	Regional	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	A	A
R-24	Pueblo	General Surveillance	Regional	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	B (2020)	A
R-3	Pueblo	General Surveillance	Regional	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	B (2020)	A
R-4	Pueblo	General Surveillance	Regional	A	A	B (2020)	A	—	A	A	—	—	—	A	—	B (2020)	A
Sandia Right Fork at Power Plant	Sandia	General Surveillance	Base flow	A	A	B (2020)	A	—	A	A	V (2020)	V (2020)	A	—	—	A	
Sandia below Wetlands	Sandia	General Surveillance	Base flow	A	A	B (2020)	A	—	A	A	V (2020)	V (2020)	A	—	—	A	
R-12 S1	Sandia	General Surveillance	Intermediate	—	—	—	—	A	—	A	—	—	—	—	—	B (2021)	—
R-12 S2	Sandia	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	A	A
R-10 S1	Sandia	General Surveillance	Regional	A	A	B (2020)	A	—	A	A	T (2021)	T (2021)	—	A	—	A	A
R-10 S2	Sandia	General Surveillance	Regional	A	A	B (2020)	A	—	A	A	T (2021)	T (2021)	—	A	—	A	A
R-10a	Sandia	General Surveillance	Regional	S	S	B (2020)	A	—	A	A	T (2021)	T (2021)	—	S	—	S	S
CDBO-6	Mortandad	General Surveillance	Alluvial	B (2020)	B (2020)	B (2020)	A	—	A	A	V (2020)	—	V (2020)	A	—	—	B (2020)
MCO-5	Mortandad	General Surveillance	Alluvial	A	B (2020)	B (2020)	A	—	A	A	V (2020)	—	V (2020)	A	—	A	A

Table 8.3-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEX ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	
MCO-7	Mortandad	General Surveillance	Alluvial	A	A	B (2020)	A	—	A	A	—	—	V (2020)	A	—	A	A	
R-16 S2	Mortandad	General Surveillance	Regional	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	A	A	
R-16 S4	Mortandad	General Surveillance	Regional	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	A	A	
R-16r**	Mortandad	General Surveillance	Regional	A	B (2020)	B (2020)	A	—	A	A	—	—	—	A	—	A	A	
R-34	Mortandad	General Surveillance	Regional	A	A	B (2020)	A	—	A	A	T (2021)	T (2021)	—	A	—	A	A	
Two Mile Canyon Below TA-59	Pajarito	General Surveillance	Base flow	A	A	B (2020)	A	—	A	A	V (2020)	A	V (2020)	A	—	—	A	
Homestead Spring	Pajarito	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A	
Starmer Spring	Pajarito	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A	
18-MW-18	Pajarito	General Surveillance	Alluvial	S	B (2021)	B (2021)	A	A	A	A	V (2020)	V (2020)	V (2020)	S	—	B (2021)	S	
PCAO-8	Pajarito	General Surveillance	Alluvial	A	B (2021)	B (2021)	A	A	A	A	V (2020)	V (2020)	V (2020)	A	—	—	A	
03-B-13	Pajarito	General Surveillance	Intermediate	S	S	S	A	—	A	A	—	V (2020)	—	A	B (2021)	—	S	
PCI-2**	Pajarito	General Surveillance	Intermediate	S	S	S	A	—	A	A	—	A	—	A	—	A	S	
R-19 S2	Pajarito	General Surveillance	Intermediate	Q	Q	Q	Q	—	A	A	A	A	A	A	A	—	A	
R-17 S1**	Pajarito	General Surveillance	Regional	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A	
R-17 S2**	Pajarito	General Surveillance	Regional	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A	
R-19 S3	Pajarito	General Surveillance	Regional	Q	Q	Q	Q	—	A	A	A	A	A	A	—	A	Q	
WCO-1r	Water	General Surveillance	Alluvial	S	B (2020)	B (2020)	A	—	A	A	V (2020)	S	V (2020)	A	—	A	S	
R-31 S3	Ancho	General Surveillance	Regional	Q	Q	Q	Q	—	A	A	A	A	A	A	A	—	A	Q
R-31 S4	Ancho	General Surveillance	Regional	Q	Q	Q	Q	—	A	A	A	A	A	A	A	—	A	Q
Ancho at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A	
Frijoles at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A	
Mortandad at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2020)	B (2020)	A	—	A	A	B (2020)	B (2020)	B (2020)	B (2020)	—	—	A	
Pajarito at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A	
Rio Grande at Frijoles	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A	
Rio Grande at Otowi Bridge	White Rock Canyon	General Surveillance	Base flow	S	A	B (2020)	A	—	A	A	A	—	A	A	—	A	S	
Ancho Spring**	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	—	A	—	A	—	A	A	
Upper La Mesita Spring	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	T (2021)	T (2021)	—	A	—	A	A	

Table 8.3-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
Sacred Spring	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	T (2021)	T (2021)	—	A	—	A	A
Lower Sandia Spring	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	B (2020)	B (2020)	—	A	—	A	A
Spring 1	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	A	A	—	A	—	A	A
Spring 2	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—	A	A	B (2020)	B (2020)	—	A	—	A	A
Spring 3 ⁱ	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	B (2021)	A	B (2021)	A	—	B (2021)	A
Spring 3A	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 3AA**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 4 ^j	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	A	A	A	A	—	B (2021)	A
Spring 4A	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 4AA	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 4B	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	B (2021)	A
Spring 5	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 5B	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 6**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	B (2021)	A
Spring 6A**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 8A**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 9**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	B (2021)	A
Spring 9A**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr); T = triennial (1 time/3 yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d Orange shading indicates a sampling location is on Pueblo de San Ildefonso land.

^e — = This analytical suite is not scheduled to be collected at this location.

^f 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^g 2021 = Samples scheduled to be collected during implementation of MY 2021 IFGMP.

^h Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

ⁱ Springs 3 and 4 are backup locations for primary TA-54 Area G PCB compliance monitoring locations R-57 S1 and R-57 S2. The VOC, SVOC, and PCB sampling and analysis plan will be modified as necessary for Springs 3 and 4 in the event that all specified samples from R-57 S1 and/or R-57 S2 cannot be collected.

Table B-4.1-1 (continued)

Symbol or CAS No.	Analyte
108-60-1	Oxybis(1-chloropropane)[2,2'-]
608-93-5	Pentachlorobenzene
87-86-5	Pentachlorophenol
85-01-8	Phenanthrene
108-95-2	Phenol
1610-18-0	Prometon
129-00-0	Pyrene
110-86-1	Pyridine
126-33-0	Sulfolane
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 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: HEXPs (High Explosives)	
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 (Her Majesty's Explosive)
98-95-3	Nitrobenzene
88-72-2	Nitrotoluene[2-]
99-08-1	Nitrotoluene[3-]
99-99-0	Nitrotoluene[4-]
78-11-5	PETN (pentaerythritol tetranitrate)

Table 1.7-2
Analytes, Field Preparation, and Analytical Methods Used by
Accredited Contract Laboratories for Samples Collected under the IFGMP

Analytical Suite	Field Preparation	Analytical Method	Analytes
Metals ^{a, b}	Unfiltered	SW-846:6010	Aluminum
		EPA:245.2 SW-846:7470A	Mercury
		SW-846:6020	Selenium
	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
		SW-846:7470A EPA:245.2	Mercury
	Unfiltered	SW-846:7470A EPA:245.2	Mercury
VOCs	Unfiltered	SW-846:8260	See Table B-4.1-1
SVOCs	Unfiltered	SW-846:8270	See Table B-4.1-1
Low-level 1,4-dioxane	Unfiltered	SW-846-8270-SIM	1,4-dioxane
Prometon <u>and sulfolane^c</u>	Unfiltered	SW-846:8270 SW-846-8085	Prometon (pesticide), <u>sulfolane (solvent)</u>
Low-level nitrosamines	Unfiltered	Proprietary HRGC/MS	Nitrosodiethylamine[N-], Nitrosodimethylamine[N-], Nitroso-di-n-butylamine[N-], Nitroso-di-n-propylamine[N-], Nitrosopyrrolidine[N-]
PCBs	Unfiltered	SW-846:8082	See Table B-4.1-1
HEXP ^{de}	Unfiltered	SW-846:8330B	See Table B-4.1-1
HEXMOD ^{ed}	Unfiltered	SW-846:8330B	See Table B-4.1-1
Per- and polyfluoroalkyl substances (PFAS)	Unfiltered	EPA 537.1 Modified	Perfluorohexane sulfonic acid (PFHxS), perfluorooctane sulfate (PFOS), perfluorooctanoic acid (PFOA)
Dioxins/Furans	Unfiltered	SW-846:8290	See Table B-4.1-1

Table 1.7-2 (continued)

Analytical Suite	Field Preparation	Analytical Method	Analytes
Radionuclides	Unfiltered	EPA:900	Gross alpha, gross beta
	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
	Unfiltered	HASL-300:ISOU	Uranium-234, uranium-235/236, uranium-238
		EPA:903.1	Radium-226
		EPA:904	Radium-228
		Generic:radium by calculation	Radium-226+228
Tritium	Unfiltered	EPA:906.0	Tritium
Low-level tritium	Unfiltered	Generic: Low-Level Tritium	Tritium
General inorganics	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
	Filtered	SW-846:6850	Perchlorate
		EPA:350.1	Ammonia as nitrogen
		EPA:353.2	Nitrate-nitrite as nitrogen
	Unfiltered	EPA:365.4	Total phosphate as phosphorus
		EPA:351.2	Total Kjeldahl nitrogen
	Unfiltered	SW-846:9060	Total organic carbon
		EPA:335.4	Cyanide (Total)

^a The following metals suite analytical groups and field preparations apply to groundwater samples (i.e., alluvial, intermediate, regional, and springs): [WSP All Metals \(filtered\)](#) and [MSGP-HG \(unfiltered\)](#). [Filtered metals and unfiltered mercury](#).

^b The following metals suite analytical groups and field preparations apply to surface water samples (i.e., base flow): [Unfiltered metals and filtered metals](#). Additional [standalone unfiltered mercury is not required as this is collected as part of the unfiltered metals suite](#). [WSP All Metals \(unfiltered\)](#) and [WSP All Metals \(filtered\)](#).

^c [Prometon and sulfolane are currently sampled as part of the SVOC analytical suite. At locations where SVOCs are not collect, this abbreviated suite is used to sample for these new toxic pollutants.](#) [HEXP \(analytical suite\) = Analysis of samples for HE by SW-846:8330B.](#)

^d [HEXP \(analytical suite\) = Analysis of samples for HE by SW-846:8330B.](#) [HEXMOD \(analytical suite\) = Analysis of samples for HE and RDX-degradation products by SW-846:8330B.](#)

^e [HEXMOD \(analytical suite\) = Analysis of samples for HE and RDX-degradation products by SW-846:8330B.](#)

Table 1.8-1
Sampling Schedule for MY 2020: October 1, 2019–September 30, 2020

Primary Watershed/ Monitoring Group	Sampling Table	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
		Oct-Dec 2019	Jan-Mar 2020	Apr-Jun 2020	Jul-Sep 2020
Pajarito Watershed					
TA-54	Table 5.4-1	S, A, V (2020) ^a	— ^b	S	—
General Surveillance	Table 8.3-1	Q ^c , S ^c	Q	Q, S, A, V (2020)	Q
Mortandad and Sandia Canyons					
Chromium Investigation	Table 3.4-1	Q, S, A, B (2020)	Q ^{de}	Q, S	Q
MDA C	Table 4.4-1	A,B (2020), V (2020)	—	—	—
General Surveillance	Table 8.3-1	S, A ^{ed} , <u>B^e</u>	—	S	A, B (2020), V (2020)
Los Alamos and Pueblo Canyons					
TA-21	Table 2.4-1	Q ^c	Q	Q	Q, A, B (2020)
General Surveillance	Table 8.3-1	S ^c	—	S, A, B (2020), V (2020)	—
Water/Cañon de Valle Watershed^{fe}					
TA-16 260	Table 6.4-1	Q ^c	Q, S, A, <u>B (2020)</u>	Q	Q, S, B (2020) , V (2020)
General Surveillance	Table 8.3-1	—	S, A	—	S
Ancho Watershed					
MDA AB	Table 7.4-1	—	—	—	A
General Surveillance	Table 8.3-1	Q ^c	Q	Q	Q, A
White Rock Canyon					
General Surveillance	Table 8.3-1	S, A, B (2020)	—	S	—
Characterization					
All Watersheds	Characterization	Q	Q	Q	Q

Notes: Sampling frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr);
B = biennial (1 time/2 yr); V = quinquennial (1 time/5 yr).

^a 2020 = Monitoring year that biennial and quinquennial sample is to be collected.

^b — = No samples are scheduled to be collected from this monitoring group during this period.

^c PFAs, prometon and sulfolane (when SVOCs are not sampled), shall be collected as part of the first sampling event of the MY.
This replaces the need to sample these analytes as part of the annual sampling conducted later in the MY.

^{de} An 8-hr extended purge will be conducted at R-62 during the second quarter (January–March) of MY 2020.

^{ed} R-10a, R-10 screen 1 (S1), R-10 S2, R-34.

^{fe} Semiannual sampling events in the Water/Cañon de Valle watershed will be conducted in March and August, when possible, to improve the likelihood that water will be sufficient to collect samples from base flow, springs, and alluvial well locations.

Table 1.9-1
Frequencies for Locations Assigned to Water-Level Monitoring Only

Assigned Monitoring Group	Location	Rationale for Selection of Location	Source Aquifer	Water Level*
Los Alamos/Pueblo Canyons Watershed				
General Surveillance	LAO-4.5c	Monitors location downcanyon below confluence of Los Alamos/DP Canyon.	Alluvial	C
	PAO-2	Monitors location in upper Pueblo Canyon.	Alluvial	C
Mortandad Canyon Watershed				
General Surveillance	MCO-2	Well monitors Effluent Canyon above the TA-50 outfall.	Alluvial	C
	MCO-4B	Well monitors upper part of Mortandad Canyon. Data will be used to assess the influence from reductions in discharge from the TA-50 RLWTF outfall.	Alluvial	C
	MCO-6	Well monitors upper part of Mortandad Canyon. Data will be used to assess the influence from reductions in discharge from the TA-50 RLWTF outfall.	Alluvial	C
Chromium Investigation Monitoring Group	MCA-9, MCO-9, MCO-12	Wells meet Discharge Permit 1793 requirement to monitor historically dry wells for verification that land application of waste water does not result in local saturation.	Alluvial	M
	MCOI-4	Well monitors upper Mortandad and Ten Site Canyons but no longer yields sufficient water for sampling.	Intermediate	C
	R-61 S2	Water levels should be monitored to assess hydraulic responses from pumping at production wells PM-4 and PM-5 and at other Chromium Investigation monitoring group wells during aquifer testing.	Regional	C
TA-54 Monitoring Group	R-41 S1	Well located east of MDA G at TA-54. Screen 1 has been dry since well installation (March 2009). Water level should be checked during sampling of R-41 S2.	Intermediate	Q ^{HD}
Pajarito Canyon Watershed				
General Surveillance	PCAO-7b2	Well characterizes potential impacts from TA-18.	Alluvial	C
Water Canyon/Cañon de Valle Watershed				
TA-16 Monitoring Group	CdV-9-1(i) PZ-1 CdV-9-1(i) PZ-2	Intermediate well located north of Cañon de Valle. Completed on January 19, 2015.	Intermediate	C

* Sampling frequency: C = continuous; M = monthly (12 times/yr at set time periods); Q = quarterly (4 times/yr); The superscript HD indicates this sampling location is historically dry. Continuous monitoring for groundwater refers to the collection of groundwater level measurements by a transducer placed in a well and programmed to collect groundwater level measurements at highly frequent intervals (e.g., every 60 or 120 min daily throughout the year).

Table 2.4-1
Interim Monitoring Plan for TA-21 Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon ^[DRF4]	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
LADP-3	Los Alamos	TA-21	Intermediate	A	B (2020) ^d	B (2020)	A	A	A	— ^e	—	—	A	—	B (2020)	A	
LAOI(a)-1.1	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	A	—	—	—	A	—	B (2020)	A	
LAOI-3.2	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	A	—	—	—	A	A	—	A	
LAOI-3.2a	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	A	—	—	—	A	A	—	A	
LAOI-7	Los Alamos	TA-21	Intermediate	A	B (2020)	B (2020)	A	A	A	—	—	—	A	A	—	A	
R-6i	Los Alamos	TA-21	Intermediate	A	A	B (2020)	A	A	A	—	—	—	A	A	—	A	
TA-53i	Sandia	TA-21	Intermediate	A	A	B (2020)	A	A	A	—	—	—	A	—	A	A	
R-9i S1	Los Alamos	TA-21	Intermediate	Q	Q	Q	Q	A	A	A	A	A	A	A	—	A	Q
R-5 S2	Pueblo	TA-21	Intermediate	Q	Q	Q	Q	A	A	A	A	A	A	A	—	A	Q
R-5 S3 ^[DRF2]	Pueblo	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	A	—	A	Q
R-6** ^f	Los Alamos	TA-21	Regional	A	A	B (2020)	A	A	A	—	—	—	A	—	A	A	
R-7 S3	Los Alamos	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	A	—	A	Q
R-8 S1	Los Alamos	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	A	—	A	Q
R-8 S2	Los Alamos	TA-21	Regional	Q	Q	Q	Q	A	A	A	A	A	A	A	—	A	Q
R-64	Los Alamos	TA-21	Regional	A	A	B (2020)	A	A	A	—	—	—	A	—	A	A	
R-66	Los Alamos	TA-21	Regional	A	A	B (2020)	A	A	A	—	—	—	A	—	A	A	
R-9	Los Alamos	TA-21	Regional	A	B (2020)	B (2020)	A	A	A	—	—	—	A	—	A	A	

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr).

^a New toxic pollutants prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluoroctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^e — = This analytical suite is not scheduled to be collected at this location.

^f Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

Table 3.4-1
Interim Monitoring Plan for Chromium Investigation Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
MCOI-5	Mortandad	Chromium Investigation	Intermediate	Q	S	S	A	d A	A	A	d	—	—	A	A	—	Q
MCOI-6	Mortandad	Chromium Investigation	Intermediate	Q	S	S	A	d A	A	A	B (2020) ^e	—	—	A	A	—	Q
SCI-1	Sandia	Chromium Investigation	Intermediate	S	B (2020)	B (2020)	A	d A	A	A	B (2020)	—	—	A	—	A	S
SCI-2	Sandia	Chromium Investigation	Intermediate	Q	B (2020)	B (2020)	A	d A	A	A	B (2020)	—	—	A	A	—	Q
R-1	Mortandad	Chromium Investigation	Regional	S	B (2020)	B (2020)	A	d A	A	A	B (2020)	—	—	B (2020)	—	A	S
R-11	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-13**f	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	A	Q
R-15	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	B (2020)	Q
R-28 ^g	Mortandad	Chromium Investigation	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	—
R-33 S1**	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	A	Q
R-33 S2**	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	A	Q
R-35a	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-35b	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-36	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	S	Q
R-42 ^g	Mortandad	Chromium Investigation	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	—
R-43 S1	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	A	Q
R-43 S2	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	A	Q
R-44 S1	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-44 S2	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-45 S1	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-45 S2	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-50 S1	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-50 S2**	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	Q	Q
R-61 S1	Mortandad	Chromium Investigation	Regional	Q	—	—	A	d A	A	A	—	—	—	—	—	Q	Q
R-62 ^h	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	A	Q
R-67	Sandia	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	d A	A	A	—	—	—	B (2020)	—	S	Q

Table 3.4-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-70 S1	Mortandad	Chromium Investigation	Regional	Q	Q	Q	A	—A	A	A	—	—	—	Q	—	Q	Q
R-70 S2	Mortandad	Chromium Investigation	Regional	Q	Q	Q	A	—A	A	A	—	—	—	Q	—	Q	Q
SIMR-2 ⁱ	Mortandad	Chromium Investigation	Regional	Q	B (2020)	B (2020)	A	—A	A	A	—	—	—	B (2020)	—	Q	Q

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr).

^a New toxic pollutants [prometon \(6-methoxy-1,3,5-triazine-2,4-diamine\)](#) and [sulfolane \(thiolane-1,1-dioxide\)](#) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d — = This analytical suite is not scheduled to be collected at this location.

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^g Gray shading indicates wells that are included in the pilot amendments test and will be sampled per the NMED-approved work plan.

^h Conduct an 8-hr extended purge at R-62 during the second quarter (January–March) of MY 2020.

ⁱ Orange shading indicates sampling location is on Pueblo de San Ildefonso land.

Table 4.4-1
Interim Monitoring Plan for MDA C Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs ^c	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-14 S1** ^d	Mortandad	MDA C	Regional	A	A	B (2020) ^e	A	A	A	B (2020)	V (2020)	— ^f	B (2020)	—	A	A	
R-46**	Mortandad	MDA C	Regional	A	A	B (2020)	A	A	A	B (2020)	V (2020)	—	B (2020)	—	A	A	
R-60**	Mortandad	MDA C	Regional	A	A	B (2020)	A	A	A	B (2020)	V (2020)	—	A	—	A	A	

Notes: Sampling suites and frequencies: A = annual (1 time/yr); B = biennial (1 time/2 yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants [prometon \(6-methoxy-1,3,5-triazine-2,4-diamine\)](#) and [sulfolane \(thiolane-1,1-dioxide\)](#) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f — = This analytical suite is not scheduled to be collected at this location.

Table 5.4-1
Interim Monitoring Plan for TA-54 Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEX ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-23i S1	Pajarito	TA-54	Intermediate	A	S	A	A	d A	A	A	V (2020) ^{de}	V (2020)	e	A	—	A	A
R-23i S2	Pajarito	TA-54	Intermediate	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-23i S3	Pajarito	TA-54	Intermediate	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-37 S1	Mortandad	TA-54	Intermediate	A	S	S	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-40 Si	Pajarito	TA-54	Intermediate	A	—	—	—	d A	—	A	—	—	—	—	—	A	A
R-40 S1	Pajarito	TA-54	Intermediate	S	S	—	A	d A	A	A	—	—	—	—	—	A	S
R-55i	Mortandad	TA-54	Intermediate	—	—	—	—	d A	—	A	—	—	—	—	—	A	—
R-20 S1	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-20 S2	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-21**f	Mortandad	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-23	Pajarito	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-32 S1	Pajarito	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-37 S2**	Mortandad	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-38**	Mortandad	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-39**	Pajarito	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-40 S2**	Pajarito	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-41 S2	Pajarito	TA-54	Regional	A	S	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-49 S1**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-49 S2**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-51 S1**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-51 S2**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-52 S1**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-52 S2**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-53 S1**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-53 S2**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-54 S1	Pajarito	TA-54	Regional	—	—	—	—	d A	—	A	—	—	—	—	—	A	—
R-54 S2**	Pajarito	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-55 S1	Mortandad	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-55 S2	Mortandad	TA-54	Regional	A	A	A	A	d A	A	A	V (2020)	V (2020)	—	A	—	A	A

Table 5.4-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Low-Level Tritium	General Inorganics	
R-56 S1**	Pajarito	TA-54	Regional	A	A	A	A	—A	A	A	V (2020) ^d	V (2020)	— ^e	A	—	A	A
R-56 S2** ^f	Pajarito	TA-54	Regional	A	A	A	A	—A	A	A	V (2020)	V (2020)	—	A	—	A	A
R-57 S1 ^g **	Pajarito	TA-54	Regional	A	A	A	A	—A	A	A	V (2020)	A	A	—	A	A	A
R-57 S2 ^g **	Pajarito	TA-54	Regional	A	A	A	A	—A	A	A	V (2020)	A	A	—	A	A	A

Notes: Sampling suites and frequencies: S = semiannual (2 times/yr); A = annual (1 time/yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants Prometon (6-methoxy-1,3,5-triazine-2,4-diamine) and Sulfolane (thiolane-1,1-dioxide) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d — = This analytical suite is not scheduled to be collected at this location.

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^g The IFGMP sampling and analysis specified for R-57 S1 and R-57 S2 for analysis of VOCs, SVOCs, and PCBs also satisfies the TA-54 Area G PCB compliance monitoring requirements.

Table 6.4-1
Interim Monitoring Plan for TA-16 260 Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXMOD ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
Canon de Valle below MDA P ^d	Water	TA-16 260	Base flow	S	S	B (2020) ^e	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	— ^f	—	S
Between E252 and Water at Beta	Water	TA-16 260	Base flow	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Water at Beta	Water	TA-16 260	Base flow	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Pajarito below S&N Ancho E Basin Confluence	Pajarito	TA-16 260	Base flow	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Bulldog Spring	Pajarito	TA-16 260	Spring	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
SWSC Spring	Water	TA-16 260	Spring	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
Burning Ground Spring	Water	TA-16 260	Spring	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	A	S
Martin Spring	Water	TA-16 260	Spring	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	A	S
16-61439 (alias: PRB Alluvial Seep)	Water	TA-16 260	Spring	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
FLC-16-25280	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-02656	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-02657r	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-02659	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-611923	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
MSC-16-06293	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
MSC-16-06294	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
CdV-16-611937	Water	TA-16 260	Alluvial	S	S	B (2020)	A	— ^f A	A	A	V (2020)	S	V (2020)	B (2020)	—	—	S
16-26644	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	Q	—	B (2020)	—	A	S
CdV-9-1(i) S1	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	V (2020)	Q	A	B (2020)	—	A	S
CdV-16-1(i)	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	Q	—	B (2020)	—	A	S
CdV-16-2(i)r	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	Q	—	B (2020)	—	A	S
CdV-16-4ip S1	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	V (2020)	Q	V (2020)	B (2020)	—	A	S
CdV-37-1(i)**g	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	S	—	B (2020)	—	A	S
R-25b	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	S	—	B (2020)	—	A	S
R-26 PZ-2	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	S	—	B (2020)	—	A	S
R-26 S1**	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	S	—	B (2020)	—	A	S
R-47i**	Water	TA-16 260	Intermediate	S	S	B (2020)	A	— ^f A	A	A	—	Q	—	B (2020)	—	A	S
R-63i	Water	TA-16 260	Intermediate	S	S	—	A	A	A	A	—	S	—	A	—	A	S
16-612309 (alias: Surge Bed Monitoring Well)	Water	TA-16 260	Intermediate	S	S	S	A	— ^f A	A	A	—	S	—	—	—	—	S

Table 6.4-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCS	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXMOD ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-47**	Water	TA-16 260	Regional	S	Q	B (2020)	A	—A	A	A	V (2020)	Q	V (2020)	B (2020)	—	A	S
CdV-R-15-3 S4	Water	TA-16 260	Regional	S	S	B (2020)	A	—A	A	A	—	S	—	B (2020)	—	A	S
CdV-R-37-2 S2	Water	TA-16 260	Regional	A	—	—	A	AA	A	A	—	A	—	—	—	A	A
R-18	Pajarito	TA-16 260	Regional	S	Q	B (2020)	A	—A	A	A	—	Q	—	B (2020)	—	A	S
R-48**	Water	TA-16 260	Regional	S	S	B (2020)	A	—A	A	A	—	Q	—	B (2020)	—	A	S
R-58	Water	TA-16 260	Regional	S	Q	B (2020)	A	—A	A	A	V (2020)	Q	V (2020)	B (2020)	—	A	S
R-63	Water	TA-16 260	Regional	S	S	B (2020)	A	—A	A	A	—	Q	—	B (2020)	—	A	S
R-68	Water	TA-16 260	Regional	S	Q	S	A	—A	A	A	—	Q	—	B (2020)	—	A	S
R-69 S1 ^h	Water	TA-16 260	Regional	S	Q	S	A	—A	A	A	—	Q	—	S	—	S	S
R-69 S2 ^h	Water	TA-16 260	Regional	S	Q	S	A	—A	A	A	—	Q	—	S	—	S	S

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants [prometon \(6-methoxy-1,3,5-triazine-2,4-diamine\)](#) and [sulfolane \(thiolane-1,1-dioxide\)](#) are sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluoroctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXMOD = Analytical suite for analysis of samples for high explosives and RDX-(hexahydro-1,3,5-trinitro-1,3,5-triazine) degradation products by SW-846:8330B.

^d Blue shading indicates a long-term monitoring locations per Appendix A of the "Remedy Completion Report for Corrective Measures Implementation at Consolidated Unit 16-021 (c)-99" (LANL 2017, 602597)

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f — = This analytical suite is not scheduled to be collected at this location.

^g Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^h Propose reducing sampling frequency beginning Q2 (following completion of first four rounds of sampling) to align with R-68 sampling plan. See Table H-5 R-69 S1 and S2 2019 for MY 2020 Q1 sampling suite.

Table 7.4-1
Interim Monitoring Plan for MDA AB Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
R-27 ^{**d}	Water	MDA AB	Intermediate	A	A	B (2020) ^e	A	A	— ^f	—	—	A	—	A	A	
R-27 ^{**}	Water	MDA AB	Regional	A	A	B (2020)	A	A	—	—	—	A	—	A	A	
R-29	Ancho	MDA AB	Regional	A	A	B (2020)	A	A	—	A	—	A	—	A	A	
R-30 ^{**}	Ancho	MDA AB	Regional	A	A	B (2020)	A	A	—	A	—	A	—	A	A	

Notes: Sampling suites and frequencies: A = annual (1 time/yr); B = biennial (1 time/2 yr).

^a New toxic pollutants [prometon \(6-methoxy-1,3,5-triazine-2,4-diamine\)](#) and sulfolane (thiolane-1,1-dioxide) [are](#) sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

^e 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^f — = This analytical suite is not scheduled to be collected at this location.

Table 8.3-1
Interim Monitoring Plan for General Surveillance Monitoring Group

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
LA Canyon near Otowi Bridge ^d	Los Alamos	General Surveillance	Base flow	S	S	S	A	e A	A	A	V (2020) ^{ef}	T (2021) ^{fg}	V (2020)	S	g	S	S
DP Spring	Los Alamos	General Surveillance	Spring	A	A	B (2020)	A	e A	A	A	—	A	—	A	—	A	A
Los Alamos Spring	Los Alamos	General Surveillance	Spring	A	A	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	A	—	A	A
Vine Tree Spring	Los Alamos	General Surveillance	Spring	S	S	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	S	—	S	S
LDAO-1b	Los Alamos	General Surveillance	Alluvial	A	A	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	A	—	—	A
LDAO-4	Los Alamos	General Surveillance	Alluvial	A	A	T (2021)	A	A	A	A	T (2021)	T (2021)	V (2020)	A	—	—	A
LAO-1.6g	Los Alamos	General Surveillance	Alluvial	A	A	B (2020)	A	e A	A	A	—	A	—	A	—	A	A
LAO-3a	Los Alamos	General Surveillance	Alluvial	A	B (2020)	B (2020)	A	e A	A	A	V (2020)	—	V (2020)	A	—	—	A
LAUZ-1	Los Alamos	General Surveillance	Alluvial	A	A	B (2020)	A	e A	A	A	—	A	—	A	—	A	A
PAO-5n	Pueblo	General Surveillance	Alluvial	A	B (2020)	B (2020)	A	e A	A	A	V (2020)	—	V (2020)	A	—	—	A
POI-4	Pueblo	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	—	B (2020)	A
R-3i	Pueblo	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	—	B (2020)	A
TW-2Ar	Pueblo	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	B (2020)	—	A
R-2**h	Pueblo	General Surveillance	Regional	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	—	A	A
R-24	Pueblo	General Surveillance	Regional	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	—	B (2020)	A
R-3	Pueblo	General Surveillance	Regional	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	—	B (2020)	A
R-4	Pueblo	General Surveillance	Regional	A	A	B (2020)	A	e A	A	A	—	—	—	A	—	B (2020)	A
Sandia Right Fork at Power Plant	Sandia	General Surveillance	Base flow	A	A	B (2020)	A	e A	A	A	V (2020)	V (2020)	A	—	—	A	
Sandia below Wetlands	Sandia	General Surveillance	Base flow	A	A	B (2020)	A	e A	A	A	V (2020)	V (2020)	A	—	—	A	
R-12 S1	Sandia	General Surveillance	Intermediate	—	—	—	—	A	—	A	—	—	—	—	—	B (2021)	—
R-12 S2	Sandia	General Surveillance	Intermediate	A	B (2020)	B (2020)	A	e A	A	A	—	—	—	A	—	A	A
R-10 S1	Sandia	General Surveillance	Regional	A	A	B (2020)	A	e A	A	A	T (2021)	T (2021)	—	A	—	A	A
R-10 S2	Sandia	General Surveillance	Regional	A	A	B (2020)	A	e A	A	A	T (2021)	T (2021)	—	A	—	A	A
R-10a	Sandia	General Surveillance	Regional	S	S	B (2020)	A	e A	A	A	T (2021)	T (2021)	—	S	—	S	S
CDBO-6	Mortandad	General Surveillance	Alluvial	B (2020)	B (2020)	B (2020)	A	e A	A	A	V (2020)	—	V (2020)	A	—	—	B (2020)
MCO-5	Mortandad	General Surveillance	Alluvial	A	B (2020)	B (2020)	A	e A	A	A	V (2020)	—	V (2020)	A	—	A	A

Table 8.3-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXc	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
MCO-7	Mortandad	General Surveillance	Alluvial	A	A	B (2020)	A	A	A	A	—	—	V (2020)	A	—	A	A
R-16 S2	Mortandad	General Surveillance	Regional	A	B (2020)	B (2020)	A	A	A	A	—	—	—	A	—	A	A
R-16 S4	Mortandad	General Surveillance	Regional	A	B (2020)	B (2020)	A	A	A	A	—	—	—	A	—	A	A
R-16r**	Mortandad	General Surveillance	Regional	A	B (2020)	B (2020)	A	A	A	A	—	—	—	A	—	A	A
R-34	Mortandad	General Surveillance	Regional	A	A	B (2020)	A	A	A	A	T (2021)	T (2021)	—	A	—	A	A
Two Mile Canyon Below TA-59	Pajarito	General Surveillance	Base flow	A	A	B (2020)	A	A	A	A	V (2020)	A	V (2020)	A	—	—	A
Homestead Spring	Pajarito	General Surveillance	Spring	A	A	B (2020)	A	A	A	A	—	A	—	A	—	A	A
Starmer Spring	Pajarito	General Surveillance	Spring	A	A	B (2020)	A	A	A	A	—	A	—	A	—	A	A
18-MW-18	Pajarito	General Surveillance	Alluvial	S	B (2021)	B (2021)	A	A	A	A	V (2020)	V (2020)	V (2020)	S	—	B (2021)	S
PCAO-8	Pajarito	General Surveillance	Alluvial	A	B (2021)	B (2021)	A	A	A	A	V (2020)	V (2020)	V (2020)	A	—	—	A
03-B-13	Pajarito	General Surveillance	Intermediate	S	S	S	A	A	A	A	—	V (2020)	—	A	B (2021)	—	S
PCI-2**	Pajarito	General Surveillance	Intermediate	S	S	S	A	A	A	A	—	A	—	A	—	A	S
R-19 S2	Pajarito	General Surveillance	Intermediate	Q	Q	Q	Q	A	A	A	A	A	A	A	A	—	A
R-17 S1**	Pajarito	General Surveillance	Regional	A	A	B (2020)	A	A	A	A	—	A	—	A	—	A	A
R-17 S2**	Pajarito	General Surveillance	Regional	A	A	B (2020)	A	A	A	A	—	A	—	A	—	A	A
R-19 S3	Pajarito	General Surveillance	Regional	Q	Q	Q	A	A	A	A	A	A	A	A	—	A	Q
WCO-1r	Water	General Surveillance	Alluvial	S	B (2020)	B (2020)	A	A	A	A	V (2020)	S	V (2020)	A	—	A	S
R-31 S 32	Ancho	General Surveillance	Regional	Q	Q	Q	A	A	A	A	A	A	A	A	—	A	Q
<u>R-31 S4</u>	<u>Ancho</u>	<u>General Surveillance</u>	<u>Regional</u>	<u>Q</u>	<u>Q</u>	<u>Q</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>Q</u>
Ancho at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A
Frijoles at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A
Mortandad at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2020)	B (2020)	AA	A	A	A	B (2020)	B (2020)	B (2020)	B (2020)	—	—	A
Pajarito at Rio Grande	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A
Rio Grande at Frijoles	White Rock Canyon	General Surveillance	Base flow	A	B (2021)	B (2021)	A	A	A	A	B (2021)	B (2021)	B (2021)	B (2021)	—	—	A
Rio Grande at Otowi Bridge	White Rock Canyon	General Surveillance	Base flow	S	A	B (2020)	AA	A	A	A	A	—	A	A	—	A	S
Ancho Spring**	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	AA	A	A	A	—	A	—	A	—	A	A
Upper La Mesita Spring	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	AA	A	A	A	T (2021)	T (2021)	—	A	—	A	A

Table 8.3-1 (continued)

Location	Watershed	Monitoring Group	Surface Water Body or Source Aquifer	Metals	VOCs	SVOCs ^a	Low-Level 1,4-dioxane	Prometon and Sulfolane	Low-Level Nitrosamines	PFAS ^b	PCBs	HEXP ^c	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics
Sacred Spring	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	AA	—A	A	A	T (2021)	T (2021)	—	A	—	A	A
Lower Sandia Spring	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—A	A	A	B (2020)	B (2020)	—	A	—	A	A
Spring 1	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—A	A	A	A	A	—	A	—	A	A
Spring 2	White Rock Canyon	General Surveillance	Spring	A	A	B (2020)	A	—A	A	A	B (2020)	B (2020)	—	A	—	A	A
Spring 3 ⁱ	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	B (2021)	A	B (2021)	A	—	B (2021)	A
Spring 3A	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 3AA**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 4 ^j	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	A	A	A	—	B (2021)	A	
Spring 4A	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 4AA	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 4B	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	B (2021)	A
Spring 5	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 5B	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 6**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	B (2021)	A
Spring 6A**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 8A**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A
Spring 9**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	B (2021)	A
Spring 9A**	White Rock Canyon	General Surveillance	Spring	A	A	B (2021)	A	A	A	A	—	A	—	A	—	A	A

Notes: Sampling suites and frequencies: Q = quarterly (4 times/yr); S = semiannual (2 times/yr); A = annual (1 time/yr); B = biennial (1 time/2 yr); T = triennial (1 time/3 yr); V = quinquennial (1 time/5 yr).

^a New toxic pollutants [prometon \(6-methoxy-1,3,5-triazine-2,4-diamine\)](#) and [sulfolane \(thiolane-1,1-dioxide\)](#) [are](#) sampled as part of this suite.

^b PFAS = perfluorohexane sulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctane sulfate (PFOS).

^c HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

^d Orange shading indicates a sampling location is on Pueblo de San Ildefonso land.

^e — = This analytical suite is not scheduled to be collected at this location.

^f 2020 = Samples scheduled to be collected during implementation of MY 2020 IFGMP.

^g 2021 = Samples scheduled to be collected during implementation of MY 2021 IFGMP.

^h Double asterisks (**) indicate background monitoring location as specified in the "Groundwater Background Investigation Report, Revision 5" (LANL 2016, 601920).

ⁱ Springs 3 and 4 are backup locations for primary TA-54 Area G PCB compliance monitoring locations R-57 S1 and R-57 S2. The VOC, SVOC, and PCB sampling and analysis plan will be modified as necessary for Springs 3 and 4 in the event that all specified samples from R-57 S1 and/or R-57 S2 cannot be collected.

Table B-4.1-1 (continued)

Symbol or CAS No.	Analyte
121-82-4	RDX (Royal Demolition Explosive)
3058-38-6	TATB (triaminotrinitrobenzene)
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
Analytical Suite: HEXMOD (High Explosives and RDX [Hexahydro-1,3,5,trinitro-1,3,5-triazine] Degradation Products)	
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-]
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
80251-29-2	DNX (hexahydro-1,3-dinitro-5-nitro-1,3,5-triazine*)
5755-27-1	MNX (hexahydro-1-nitroso-3,5-dinitro-1,3,5)*
13980-04-6	TNX (2,4,6-trinitroxylen)e*
Analytical Suite: Dioxins/Furans (D/F)	
Analytical Method SW-846:8290	
35822-46-9	Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]
37871-00-4	Heptachlorodibenzodioxins (Total)
67562-39-4	Heptachlorodibenzofuran[1,2,3,4,6,7,8-]
55673-89-7	Heptachlorodibenzofuran[1,2,3,4,7,8,9-]
38998-75-3	Heptachlorodibenzofurans (Total)
39227-28-6	Hexachlorodibenzodioxin[1,2,3,4,7,8-]
57653-85-7	Hexachlorodibenzodioxin[1,2,3,6,7,8-]

Table B-4.1-1 (continued)

Symbol or CAS No.	Analyte
108-60-1	Oxybis(1-chloropropane)[2,2'-]
608-93-5	Pentachlorobenzene
87-86-5	Pentachlorophenol
85-01-8	Phenanthrene
108-95-2	Phenol
<u>1610-18-0</u>	<u>Prometon</u>
129-00-0	Pyrene
110-86-1	Pyridine
<u>126-33-0</u>	<u>Sulfolane</u>
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 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: HEXPs (High Explosives)	
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 (Her Majesty's Explosive)
98-95-3	Nitrobenzene
88-72-2	Nitrotoluene[2-]
99-08-1	Nitrotoluene[3-]
99-99-0	Nitrotoluene[4-]
78-11-5	PETN (pentaerythritol tetranitrate)

Table B-4.1-1 (continued)

Symbol or CAS No.	Analyte
121-82-4	RDX (Royal Demolition Explosive)
3058-38-6	TATB (triaminotrinitrobenzene)
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
Analytical Suite: HEXMOD (High Explosives and RDX [Hexahydro-1,3,5,trinitro-1,3,5-triazine] Degradation Products)	
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-]
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
80251-29-2	DNX (hexahydro-1,3-dinitro-5-nitro-1,3,5-triazine*)
5755-27-1	MNX (hexahydro-1-nitroso-3,5-dinitro-1,3,5)*
13980-04-6	TNX (2,4,6-trinitroxylen)e*
Analytical Suite: Dioxins/Furans (D/F)	
Analytical Method SW-846:8290	
35822-46-9	Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]
37871-00-4	Heptachlorodibenzodioxins (Total)
67562-39-4	Heptachlorodibenzofuran[1,2,3,4,6,7,8-]
55673-89-7	Heptachlorodibenzofuran[1,2,3,4,7,8,9-]
38998-75-3	Heptachlorodibenzofurans (Total)
39227-28-6	Hexachlorodibenzodioxin[1,2,3,4,7,8-]
57653-85-7	Hexachlorodibenzodioxin[1,2,3,6,7,8-]