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

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

Date: OCT 24 2017
Refer To: ADEM-17-0271
LAUR: 17-29660

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

Subject: Response to the Request for Supplemental Information Interim Facility-Wide Groundwater Monitoring Plan for the 2018 Monitoring Year, October 2017–September 2018, Including Crosswalk Tables

Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the response to the New Mexico Environment Department's (NMED's) Request for Supplemental Information, Interim Facility-Wide Groundwater Monitoring Plan for the 2018 Monitoring Year, October 2017 through September 2018, including crosswalk tables.

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

Sincerely,

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

Sincerely,

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

BR/DR/NP:sm

Enclosures: Two hard copies with electronic files:
(1) Response to the Request for Supplemental Information Interim Facility-Wide Groundwater Monitoring Plan for the 2018 Monitoring Year, October 2017–September 2018 (EP2017-0140)
(2) Crosswalk Tables 1 through 7 (EP2017-0149)

Cy: (w/enc.)
Nita Patel, ADEM ER Program

Cy: (w/electronic att.)
Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo
Dino Chavarria, Santa Clara Pueblo
Steve Yanicak, NMED-DOE-OB, MS M894
emla.docs@em.doe.gov
Hai Shen, DOE-EM-LA
Robert Cygnarowicz, ADEM ER Program
Public Reading Room (EPRR)
PRS Database
ADESH Records

Cy: (w/o enc./date-stamped letter emailed)
lasomailbox@nnsa.doe.gov
Peter Maggiore, DOE-NA-LA
Steve Goodrum, DOE-NA-LA
David Rhodes, DOE-EM-LA
Bruce Robinson, ADEM ER Program
Randy Erickson, ADEM
Jocelyn Buckley, ADESH-EPC-CP
Mike Saladen, ADESH-EPC-CP
John Bretzke, ADESH-EPC-DO
Michael Brandt, ADESH
William Mairson, PADOPS
Craig Leasure, PADOPS

Response to Request for Supplemental Information Interim Facility-Wide Groundwater Monitoring Plan for the 2018 Monitoring Year, October 2017–September 2018
Los Alamos National Laboratory, EPA ID No. NM0890010515, HWB-LANL-17-034,
Dated September 21, 2017

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comment is included verbatim. Los Alamos National Laboratory's (LANL's or the Laboratory's) response follows the NMED comment, and a reference list follows the LANL response. This response contains data on radioactive materials, including source, special nuclear, and byproduct material. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with U.S. Department of Energy policy.

GENERAL COMMENT

NMED Comment

The Permittees have proposed updates to monitoring within each watershed or monitoring group, including changes in monitoring frequency, analytical suites, and monitoring locations. The Plan describes the criteria used by the Permittees for determining the appropriateness of the proposed changes, however, the specific criteria for the changes at each sampling location are not provided. NMED requests that the Permittees provide documentation in a table format that clearly illustrates the justification for each change in sampling frequency and/or analyte selection as proposed in the Plan. The Permittee's required documentation must be submitted to NMED by ***October 31, 2017****.*

LANL Response

1. Crosswalk Tables. Tables 1 through 7 present comparisons of the Monitoring Year (MY) 2017 and 2018 interim monitoring plans for each monitoring group and correspond respectively to Tables 2.4-1, 3.4-1, 4.4-1, 5.4-1, 6.4-1, 7.4-1, and 8.3-1 in the 2017 and 2018 Interim Facility-Wide Groundwater Monitoring Plans (IFGMPs) (LANL 2016, 601506; LANL 2017, 602406). Changes from the 2017 interim monitoring plan to the 2018 interim monitoring plan are identified by red font and were based on examination of the most recent 5 years of monitoring data available at the time the 2018 interim plan was finalized in April 2017. This data set can be created by bounding the extraction from a sample date of January 1, 2012, to a data validation date of April 1, 2017, and including regular (REG) and field duplicate (FD) data that are coded with the best value flag. The rationale for the changes from the 2017 to the 2018 interim monitoring plan are presented in the last column of each crosswalk table.

2. Tracer Analytical Suites. The discussion presented below regarding tracer analytical suites used in the 2017 and 2018 IFGMPs may be useful in reviewing the crosswalk tables.

   The 2017 IFGMP included the following two tracer analytical suites:

   - Tracers (Chromium Investigation Study). This analytical suite included the following tracers: naphthalene sulfonates, sodium bromide, sodium perrhenate, deuterated water, sodium carbonate and sodium bicarbonate.
   - Tracers (TA-16 260 Study). This analytical suite included the following tracers: naphthalene sulfonates and sodium bromide.

   To provide flexibility in the use of individual tracers, the 2018 IFGMP separated the tracers into the following four analytical suites:

   - Naphthalene Sulfonates, Sodium Bromide, Sodium Perrhenate, and Deuterated Water.

   Sodium carbonate and sodium bicarbonate tracers were used in MY2017 to assess the liberation of chromium under alkaline conditions. This assessment was completed in MY2017. As such, sodium carbonate and sodium bicarbonate tracers are not included in the 2018 IFGMP.

REFERENCES

LANL (Los Alamos National Laboratory), May 2016. "Interim Facility-Wide Groundwater Monitoring Plan for the 2017 Monitoring Year, October 2016–September 2017," Los Alamos National Laboratory document LA-UR-16-23408, Los Alamos, New Mexico. (LANL 2016, 601506)

LANL (Los Alamos National Laboratory), September 2016. "Groundwater Investigation Work Plan for Consolidated Unit 16-021(c)-99, Including Drilling Work Plans for Wells R-68 and R-69," Los Alamos National Laboratory document LA-UR-16-26493, Los Alamos, New Mexico. (LANL 2016, 601779)

LANL (Los Alamos National Laboratory), October 27, 2016. "Groundwater Background Investigation Report, Revision 5," Los Alamos National Laboratory document LA-UR-16-27907, Los Alamos, New Mexico. (LANL 2016, 601920)

LANL (Los Alamos National Laboratory), May 2017. "Interim Facility-Wide Groundwater Monitoring Plan for the 2018 Monitoring Year, October 2017–September 2018," Los Alamos National Laboratory document LA-UR-16-24070, Los Alamos, New Mexico. (LANL 2017, 602406)

LANL (Los Alamos National Laboratory), September 2017. "Remedy Completion Report for Corrective Measures Implementation at Consolidated Unit 16-021(c)-99," Los Alamos National Laboratory document LA-UR-17-27678, Los Alamos, New Mexico. (LANL 2017, 602597)

Table 1
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the TA-21 Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
LADP-3	2017	Intermediate	S	B (2018)[e]	B (2018)	—[f]	—	—	A	—	A	S	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR[g] screening values. Annual sampling and analysis for metals and general inorganics is sufficient to support monitoring objectives. Monitoring objectives for the TA-21 Monitoring Group are presented in Section 2.3 of the 2018 IFGMP (LANL 2017, 602406). Tritium concentrations remain low. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	
LAOI(a)-1.1	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	—	A	A	Tritium data are ND[h]. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	
LAOI-3.2	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	A	—	A	n/a[i]
	2018		A	B (2018)	B (2018)	—	—	—	A	A	—	A	
LAOI-3.2a	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	A	—	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	A	—	A	
LAOI-7	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	A	—	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	A	—	A	
R-5 S2	2017	Intermediate	B (2018)	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	B (2018)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-6i	2017	Intermediate	A	A	A	—	—	—	A	A	—	A	n/a
	2018		A	A	A	—	—	—	A	A	—	A	
R-9i S1	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	B (2018)	—	—	A	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
TA-53i	2017	Intermediate	A	A	A	—	—	—	A	A	—	A	Tritium data show long-term downtrend with 2015 and 2016 sampling results ND. The associated minimum detectable activities of the ND results were 124 and 49 pCi/L, respectively. Low-level tritium analysis is more appropriate than standard tritium analysis for samples collected from this location.
	2018		A	A	A	—	—	—	A	—	A	A	
R-5 S3	2017	Regional	B (2018)	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	B (2018)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-6	2017	Regional	S	A	B (2018)	—	—	—	S	—	S	S	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR screening values. Relatively low and steady detections of uranium-234 (0.22 and 0.36 pCi/L) and uranium-238 (0.11 and 0.19 pCi/L), and a predominance of NDs for uranium-235/236 (only one detection at 0.097 pCi/L). All other radionuclides in the radionuclide analytical suite are ND. Tritium data are ND. Annual sampling and analysis for metals, general inorganics, radionuclides, and tritium is sufficient to support monitoring objectives.
	2018		A	A	B (2018)	—	—	—	A	—	A	A	

Table 1 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-64	2017	Regional	S	A	A	—	—	—	S	—	S	S	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR screening values.
	2018		A	A	A	—	—	—	A	—	A	A	Relatively low and steadily decreasing activity of uranium-234 (1.28 to 0.53 pCi/L) and uranium-238 (0.74 and 0.25 pCi/L), and a predominance of NDs for uranium-235/236 (three detections ranging from 0.04 to 0.06 pCi/L). All other radionuclides in the radionuclide analytical suite are ND. Tritium data are ND. Annual sampling and analysis for metals, general inorganics, radionuclides, and tritium is sufficient to support monitoring objectives.
R-66	2017	Regional	S	A	A	—	—	—	S	—	S	S	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR screening values.
	2018		A	A	A	—	—	—	A	—	A	A	Relatively low and steady detections of uranium-234 (0.42 and 0.65 pCi/L) and uranium-238 (0.16 and 0.28 pCi/L). All other radionuclides in the radionuclide analytical suite are ND. Predominance of NDs for tritium in data set. Specifically, tritium data from January 2012 to August 2016 are ND except for one detection in the 23-result data set. The detection was 3 pCi/L for a sample collected in June 2013. Annual sampling and analysis for metals, general inorganics, radionuclides, and tritium is sufficient to support monitoring objectives.
R-8 S1	2017	Regional	B (2018)	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	B (2018)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-8 S2	2017	Regional	B (2018)	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	B (2018)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-9	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	A	—	A	Tritium data are ND. Low-level tritium analysis is more appropriate than standard tritium analysis for samples collected from this location.
	2018		A	B (2018)	B (2018)	—	—	—	A	—	A	A	

Notes: Table 1 is a crosswalk from Table 2.4-1 in the 2017 IFGMP (LANL 2016, 601506) to Table 2.4-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

[e] 2018 = Samples scheduled to be collected during implementation of MY2018 Interim Plan.

[f] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.

[g] PMR = Periodic monitoring report.

[h] ND = Nondetection(s).

[i] n/a = Not applicable.

Table 2
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the Chromium Investigation Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Chromium Isotopes	15N/18O Isotopes in Nitrate	Naphthalene Sulfonates	Sodium Bromide Tracer	Sodium Perrhenate Tracer	Deuterated Water Tracer	Rationale for Changes (MY2017 to MY2018)
MCOI-5	2017	Intermediate	Q	S	S	—[e]	—	—	A	A	—	Q	A	A	—	—	—	—	Consistency in data indicate that semiannual sampling for chromium isotopic ratio is needed to support the conceptual model.
	2018		Q	S	S	—	—	—	A	A	—	Q	S	A	—	—	—	—	
MCOI-6	2017	Intermediate	Q	S	S	A	—	—	A	A	—	Q	Q	A	—	—	—	—	PCB data are ND[f]. Specifically, PCB data from the June 2006 and November 2016 sampling events are ND. Biennial sampling and analysis for PCBs is sufficient to support monitoring objectives. Monitoring objectives for the Chromium Investigation Monitoring Group are presented in Section 3.3 of the 2018 IFGMP (LANL 2017, 602406). Consistency in data indicate that semiannual sampling for chromium isotopic ratio is sufficient to support the conceptual model.
	2018		Q	S	S	B (2018)[g]	—	—	A	A	—	Q	S	A	—	—	—	—	
SCI-1	2017	Intermediate	S	B (2018)	B (2018)	B (2018)	—	—	A	—	A	S	A	A	—	—	—	—	n/a[h]
	2018		S	B (2018)	B (2018)	B (2018)	—	—	A	—	A	S	A	A	—	—	—	—	
SCI-2	2017	Intermediate	Q	B (2018)	B (2018)	B (2018)	—	—	A	A	—	Q	S	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	B (2018)	—	—	A	A	—	Q	S	A	—	—	—	—	
R-1	2017	Regional	S	A	A	A	—	—	B (2018)	—	A	S	A	A	—	—	—	—	VOC, SVOC, and PCB data are ND. Biennial sampling and analysis for VOCs, SVOCs, and PCBs is sufficient to support monitoring objectives.
	2018		S	B (2018)	B (2018)	B (2018)	—	—	B (2018)	—	A	S	A	A	—	—	—	—	
R-11	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	S	A	—	—	—	—	Tritium activity is low and relatively stable (or possibly decreasing based on the most recent tritium data). Biennial sampling and analysis for tritium is sufficient to support monitoring objectives. Consistency in data indicate that annual sampling for chromium isotopic ratio provides sufficient data to support the conceptual model.
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	Q	A	A	—	—	—	—	
R-13	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	
R-15	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	Tritium activity steadily increasing but remains relatively low from October 2012 to November 2016 (i.e., 15.9 to 34 pCi/L). Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	Q	A	A	—	—	—	—	
R-28[i]	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	A	—	Q	A	A	Q	Q	Q	Q	See table note i.
	2018		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
R-33 S1	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	
R-33 S2	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	—	Q	A	A	—	—	—	—	Tritium data collected from 2005 to 2011 (21-result data set) were ND. Sampling and analysis for tritium was discontinued after 2011. Add annual sampling and analysis for tritium in MY2018 to assess if tritium is still ND.
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	
R-35a	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	

Table 2 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Chromium Isotopes	15N/18O Isotopes in Nitrate	Naphthalene Sulfonates	Sodium Bromide Tracer	Sodium Perrhenate Tracer	Deuterated Water Tracer	Rationale for Changes (MY2017 to MY2018)
R-35b	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	
R-36	2017	Regional	Q	A	A	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	VOC and SVOC data are ND. Tritium activity is relatively low and stable. Biennial sampling and analysis for VOCs, SVOCs, and tritium is sufficient to support monitoring objectives.
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	B (2018)	Q	A	A	—	—	—	—	
R-42[i]	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	A	—	Q	A	A	Q	Q	Q	Q	See table note i.
	2018		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
R-43 S1	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	Q	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	Q	A	—	—	—	—	
R-43 S2	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	
R-44 S1	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	S	S	—	—	—	—	Monthly sampling for metals, general inorganics, and tracers supports performance monitoring for Chromium Plume Control Interim Measure.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	A	M	S	S	M	M	M	M	
R-44 S2	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	A	A	—	—	—	—	Same rationale as presented above for R-44 S1.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	A	M	A	A	M	M	M	M	
R-45 S1	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	Q	S	—	—	—	—	Monthly sampling for metals, general inorganics, and tracers supports performance monitoring for Chromium Plume Control Interim Measure. Consistency in data indicate that semiannual sampling for chromium isotopic ratio is sufficient to support the conceptual model.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	A	M	S	S	M	M	M	M	
R-45 S2	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	Q	S	—	—	—	—	Same rationale as presented above for R-45 S1.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	A	M	S	S	M	M	M	M	
R-50 S1	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	S	Q	Q	A	—	—	—	—	Monthly sampling for metals, general inorganics, and naphthalene sulfonate tracers supports performance monitoring for Chromium Plume Control Interim Measure. Consistency in data indicate that semiannual sampling for chromium isotopic ratio is sufficient to support the conceptual model.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	S	M	S	A	M	—	—	—	
R-50 S2	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	S	Q	A	A	—	—	—	—	Monthly sampling for metals, general inorganics, and naphthalene sulfonate tracers supports performance monitoring for Chromium Plume Control Interim Measure.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	S	M	A	A	M	—	—	—	
R-61 S1	2017	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Well screen was a water-level-only monitoring location in MY2017. Monthly sampling for metals and general inorganics supports performance monitoring for Chromium Plume Control Interim Measure, and semiannual sampling for chromium isotopic ratio is needed to support the conceptual model.
	2018		M	—	—	—	—	—	—	—	—	M	S	—	—	—	—	—	
R-62[j]	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	S	A	—	—	—	—	n/a
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	A	Q	S	A	—	—	—	—	

Table 2 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Chromium Isotopes	15N/18O Isotopes in Nitrate	Naphthalene Sulfonates	Sodium Bromide Tracer	Sodium Perrhenate Tracer	Deuterated Water Tracer	Rationale for Changes (MY2017 to MY2018)
R-67	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	S	Q	Q	A	—	—	—	—	Consistency in data indicate that semiannual sampling for chromium isotopic ratio is sufficient to support the conceptual model.
	2018		Q	B (2018)	B (2018)	—	—	—	B (2018)	—	S	Q	S	A	—	—	—	—	
SIMR-2[k]	2017	Regional	Q	B (2018)	B (2018)	—	—	—	B (2018)	—	S	Q	S	A	—	—	—	—	Monthly sampling for metals, general inorganics, and naphthalene sulfonate tracers supports performance monitoring for Chromium Plume Control Interim Measure.
	2018		M	B (2018)	B (2018)	—	—	—	B (2018)	—	S	M	S	A	M	—	—	—	

Notes: Table 2 is a crosswalk from Table 3.4-1 in the 2017 IFGMP (LANL 2016, 601506) to Table 3.4-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

[e] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.

[f] ND = Nondetection(s).

[g] 2018 = Samples scheduled to be collected during implementation of MY2018 Interim Plan.

[h] n/a = Not applicable.

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

[j] Conduct an 8-h extended purge at R-62 during the second quarter (January–March) of MY2018.

[k] Orange shading indicates sampling location is on Pueblo de San Ildefonso land.

Table 3
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the MDA C Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Chromium Isotopes	15N/18O Isotopes in Nitrate	Rationale for Changes (MY2017 to MY2018)
R-14 S1	2017	Regional	A	S	S	A	V (2020)[e]	—[f]	A	—	S	A	—	—	VOC and SVOC data are ND[g]. Tritium data from May 2012 to November 2016 are ND. Annual sampling and analysis for VOCs, SVOCs, and tritium is sufficient to support monitoring objectives. Monitoring objectives for the MDA C Monitoring Group are presented in Section 4.3 of the 2018 IFGMP (LANL 2017, 602406).
	2018		A	A	A	A	V (2020)	—[b]	A	—	A	A	—	—	
R-46	2017	Regional	S	S	S	A	V (2020)	—	A	—	S	S	—	—	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR[h] screening values. Predominance of NDs in VOC data set. Specifically, VOC data from May 2012 to November 2016 are ND except for one detection of acetone (common analytical laboratory contaminant) at 2.84 µg/L in May 2015. Predominance of NDs in SVOC data set. Specifically, SVOC data from May 2012 to November 2016 are ND except for low detections (< 5 µg/L) of three phthalate compounds (common analytical laboratory equipment contaminants) and detection of benzoic acid in the primary and field duplicate samples for the November 2012 sampling event (13.1 and 14 µg/L, respectively). The PMR screening value for benzoic acid is 75,000 µg/L. Predominance of NDs in tritium data set. Specifically, tritium data from May 2012 to November 2016 are ND except for two detections in the 11-result data set. The detections were 3.4 and 13.1 pCi/L for samples collected in May 2012 and May 2014, respectively. Annual sampling and analysis for metals, general inorganics, VOCs, SVOCs, and tritium is sufficient to support monitoring objectives.
	2018		A	A	A	A	V (2020)	—	A	—	A	A	—	—	
R-60	2017	Regional	S	S	S	A	V (2020)	—	A	—	S	S	—	—	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR screening values. VOC and SVOC data are ND. Tritium data from May 2012 to November 2016 are ND. Annual sampling and analysis for metals, general inorganics, VOCs, SVOCs, and tritium is sufficient to support monitoring objectives.
	2018		A	A	A	A	V (2020)	—	A	—	A	A	—	—	

Notes: Table 3 is a crosswalk from Table 4.4-1 in the 2017 IFGMP (LANL 2016, 601506) to Table 4.4-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

[e] 2020 = Samples scheduled to be collected during implementation of MY2020 Interim Plan.

[f] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.

[g] ND = Nondetection(s).

[h] PMR = Periodic monitoring report.

Table 4
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the TA-54 Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-23i S1	2017	Intermediate	A	S	A	V (2020)[e]	V (2020)	—[f]	A	A	—	A	Tritium activity for the period October 2012 to October 2016 ranges from 1.05 to 77.1 pCi/L (six data points in the data set). Low-level tritium analysis is more appropriate than standard tritium analysis for samples collected from this location.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	A	A	
R-23i S2	2017	Intermediate	A	S	A	V (2020)	V (2020)	—	A	—	S	A	Tritium activity is low and relatively stable. Annual sampling and analysis for tritium is sufficient to support monitoring objectives. Monitoring objectives for the TA-54 Monitoring Group are presented in Section 5.3 of the 2018 IFGMP (LANL 2017, 602406).
	2018		A	S	A	V (2020)	V (2020)	—	A	—	A	A	
R-23i S3	2017	Intermediate	A	S	A	V (2020)	V (2020)	—	A	—	S	A	Tritium activity is low and relatively stable. Annual sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	A	A	
R-37 S1	2017	Intermediate	A	Q	S	V (2020)	V (2020)	—	A	—	Q	A	VOC data are ND[g]. Tritium activity is low and relatively stable. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
	2018		A	S	S	V (2020)	V (2020)	—	A	—	S	A	
R-40 Si	2017	Intermediate	A	—	—	—	—	—	—	—	S	A	n/a[h]
	2018		A	—	—	—	—	—	—	—	S	A	
R-40 S1	2017	Intermediate	—	S	—	—	—	—	—	—	S	—	Semiannual sampling and analysis for metals and general inorganics added to support evaluation of potential reducing conditions.
	2018		S	S	—	—	—	—	—	—	S	S	
R-55i	2017	Intermediate	—	—	—	—	—	—	—	—	S	—	n/a
	2018		—	—	—	—	—	—	—	—	S	—	
R-20 S1	2017	Regional	A	A	A	V (2020)	V (2020)	—	A	—	A	A	n/a
	2018		A	A	A	V (2020)	V (2020)	—	A	—	A	A	
R-20 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-21	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	VOC and tritium data are ND. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-23	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Predominance of NDs in VOC data set. Specifically, VOC data from April 2012 to January 2017 are ND except for one detection of methylene chloride (a common analytical laboratory contaminant) at 1.84 µg/L for the sample collected in July 2016. Tritium data are ND. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-32 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	

Table 4 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-37 S2	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	VOC data are ND.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	Predominance of NDs in tritium data set. Specifically, tritium data from April 2012 to October 2016 are ND except for two detections in the 20-result data set. The detections were 2.2 and 20.9 pCi/L for samples collected in January 2015 and October 2016, respectively. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
R-38	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	VOC data are ND.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	Predominance of NDs in tritium data set. Specifically, tritium data from April 2012 to October 2016 are ND except for two detections in the 18-result data set. The detections were 3.7 and 6.7 pCi/L for samples collected in April 2014 and October 2015, respectively. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
R-39	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Predominance of NDs in VOC data set. Specifically, VOC data from April 2012 to January 2017 are ND except for two detections. Acetone and diethyl ether (common analytical laboratory contaminants) were detected at 1.69 µg/L and 0.32 µg/L in October 2016 and April 2014, respectively.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	Predominance of NDs in tritium data set. Specifically, tritium data from April 2012 to October 2016 are ND except for one detection in the 19-result data set. The detection was 2.5 pCi/L for a sample collected in January 2015. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
R-40 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-41 S2	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-49 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Predominance of NDs in VOC data set. Specifically, VOC data from April 2012 to January 2017 are ND except for two detections. Acetone (common analytical laboratory contaminant) and acetonitrile were detected at 3.08 µg/L and 12.2 µg/L in October 2012 and October 2015, respectively. The PMR[i] screening values for acetone and acetonitrile are 14,100 and 130 µg/L, respectively. Tritium data are ND. Semiannual sampling and analysis for VOCs and tritium is sufficient to support monitoring objectives.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-49 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-51 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-51 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-52 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-52 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	

Table 4 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-53 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-53 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-54 S1	2017	Regional	—	—	—	—	—	—	—	—	S	—	n/a
	2018		—	—	—	—	—	—	—	—	S	—	
R-54 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-55 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-55 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-56 S1	2017	Regional	A	Q	A	V (2020)	V (2020)	—	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-56 S2	2017	Regional	A	S	A	V (2020)	V (2020)	—	A	—	S	A	n/a
	2018		A	S	A	V (2020)	V (2020)	—	A	—	S	A	
R-57 S1[j]	2017	Regional	A	Q	A	A	V (2020)	A	A	—	Q	A	Same rationale as presented above for R-21.
	2018		A	S	A	A	V (2020)	A	A	—	S	A	
R-57 S2[j]	2017	Regional	A	S	A	A	V (2020)	A	A	—	S	A	n/a
	2018		A	S	A	A	V (2020)	A	A	—	S	A	

Notes: Table 4 is a crosswalk from Table 5.4-1 in the 2017 IFGMP (LANL 2016 601506) to Table 5.4-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

[e] 2020 = Samples scheduled to be collected during implementation of MY2020 Interim Plan.

[f] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.

[g] ND = Nondetection(s).

[h] n/a = Not applicable.

[i] PMR = Periodic monitoring report.

[j] The Interim Plan 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 stipulated by EPC-CP-QP-205.

Table 5
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the TA-16 260 Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXMOD[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Naphthalene Sulfonates	Sodium Bromide Tracer	$^{15}N/^{18}O$ Isotopes in Nitrate	Rationale for Changes (MY2017 to MY2018)
Canon de Valle below MDA P	2017	Base flow	Q	S	B (2018)[e]	V (2020)[f]	Q	V (2020)	B (2018)	—[g]	—	Q	—	—	—	Semiannual sampling and analysis for metals, HE[h], and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model and is consistent with the frequency specified in the remedy completion report (LANL 2017, 602597) for base-flow monitoring locations. Monitoring objectives for the TA-16 260 Monitoring Group are presented in Section 6.3 of the 2018 IFGMP (LANL 2017, 602406).
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
Between E252 and Water at Beta	2017	Base flow	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for Canon de Valle below MDA P.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
Water at Beta	2017	Base flow	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for Canon de Valle below MDA P.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
Pajarito below S&N Ancho E Basin Confluence	2017	Base flow	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for Canon de Valle below MDA P.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
Bulldog Spring	2017	Spring	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Semiannual sampling and analysis for metals, HE, and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model and is consistent with the frequency specified in the remedy completion report (LANL 2017, 602597) for groundwater spring monitoring locations. Annual sampling for stable isotopes added to support conceptual model.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	A	
SWSC Spring	2017	Spring	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for Bulldog Spring.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	A	
Burning Ground Spring	2017	Spring	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for Bulldog Spring.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	A	S	—	—	A	
Martin Spring	2017	Spring	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for Bulldog Spring.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	A	S	—	—	A	
FLC-16-25280	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Semiannual sampling and analysis for metals, HE, and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model and is consistent with the frequency specified in the remedy completion report (LANL 2017, 602597) for alluvial monitoring locations.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
CdV-16-02656	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
CdV-16-02657r	2017	Alluvial	—	—	—	—	—	—	—	—	—	—	—	—	—	New well added to support long-term monitoring for remedy completion.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	

Table 5 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXMOD[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Naphthalene Sulfonates	Sodium Bromide Tracer	$^{15}N/^{18}O$ Isotopes in Nitrate	Rationale for Changes (MY2017 to MY2018)
CdV-16-02659	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
CdV-16-611923	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
MSC-16-06293	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
MSC-16-06294	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
PRB Alluvial Seep	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
CdV-16-611937	2017	Alluvial	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	—	Q	—	—	—	Same rationale as presented above for FLC-16-25280.
	2018		S	S	B (2018)	V (2020)	S	V (2020)	B (2018)	—	—	S	—	—	—	
16-26644	2017	Intermediate	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	—	—	—	Metals and general inorganics concentrations are consistent with background concentration levels (LANL 2016, 601920). Semiannual sampling and analysis for metals and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model. Annual sampling for stable isotopes added to support conceptual model.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	—	—	A	
CdV-9-1(i) S1	2017	Intermediate	Q	Q	Q	A	Q	A	A	—	S	Q	Q	Q	—	The new-well monitoring frequencies maintained through MY2017 have been changed to regular monitoring frequencies for MY2018. Tritium activity is low and relatively stable. Annual sampling and analysis for tritium is sufficient to support monitoring objectives. Annual sampling for stable isotopes added to support conceptual model.
	2018		S	S	B (2018)	V (2020)	Q	A	A	—	A	S	Q	Q	A	
CdV-16-1(i)	2017	Intermediate	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Same rationale as presented above for 16-26644.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	A	
CdV-16-2(i)r	2017	Intermediate	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Same rationale as presented above for 16-26644.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	A	
CdV-16-4ip S1	2017	Intermediate	Q	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	A	Q	Q	Q	—	Same rationale as presented above for 16-26644.
	2018		S	S	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	A	S	Q	—	A	
CdV-37-1(i)	2017	Intermediate	S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	n/a[i]
	2018		S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	

Table 5 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXMOD[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Naphthalene Sulfonates	Sodium Bromide Tracer	$^{15}N/^{18}O$ Isotopes in Nitrate	Rationale for Changes (MY2017 to MY2018)
R-25 S1	2017	Intermediate	Q	S	—	—	Q	—	—	—	A	Q	Q	Q	—	Non-purgeable location converted to a tracer-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	Q	Q	—	
R-25 S2	2017	Intermediate	Q	S	—	—	Q	—	—	—	A	Q	Q	Q	—	Non-purgeable location converted to a tracer-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	Q	Q	—	
R-25 S4	2017	Intermediate	Q	S	—	—	Q	—	—	—	A	Q	Q	Q	—	Non-purgeable location converted to a tracer-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	Q	Q	—	
R-25b	2017	Intermediate	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Metals and general inorganics concentrations are consistent with background concentration levels (LANL 2016, 601920). Semiannual sampling and analysis for metals and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	—	
R-26 PZ-2	2017	Intermediate	Q	Q	B (2018)	—	S	—	B (2018)	—	A	Q	—	—	—	Metals and general inorganics concentrations are consistent with background concentration levels. Semiannual sampling and analysis for metals and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model. VOC data are ND[j] for the period January 2012 to December 2016 except for 1 detection of acetone (3.68 µg/L), 1 detection of toluene (0.36 µg/L) and 13 detections of tetrachloroethene (1.03 to 1.61 µg/L). The PMR[k] screening values for acetone (a common analytical laboratory contaminant), toluene, and tetrachloroethene are 14.1 mg/L, 750 µg/L and 5 µg/L, respectively. Based on the VOC data set, semiannual sampling and analysis for VOCs is sufficient to support monitoring objectives.
	2018		S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	
R-26 S1	2017	Intermediate	S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	n/a
	2018		S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	
R-47i	2017	Intermediate	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Same rationale as presented above for 16-26644.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	A	
R-63i	2017	Intermediate	—	—	—	—	—	—	—	—	—	—	—	—	—	Well was a water-level-only monitoring location in MY2017. Recent potentiometric data suggest that well is in hydraulic connection to formation and that sampling and analysis may provide useful monitoring data. Annual sampling for stable isotopes added to support conceptual model.
	2018		S	S	—	—	S	—	A	—	A	S	S	S	A	

Table 5 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXMOD[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Naphthalene Sulfonates	Sodium Bromide Tracer	$^{15}N/^{18}O$ Isotopes in Nitrate	Rationale for Changes (MY2017 to MY2018)
R-47	2017	Regional	Q	Q	Q	A	Q	A	A	—	S	Q	Q	Q	—	Metals and general inorganics concentrations are consistent with background concentration levels. Semiannual sampling and analysis for metals and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model. Predominance of NDs in SVOC data set. Specifically, SVOC data from November 2014 to December 2016 are ND except for first-time detections of three VOCs for samples collected in March 2016. These include 1,4-dioxane, N-nitrosodimethylamine, and pyridine detected at 1.94, 1.57 and 2.34 µg/L, respectively. A false-positive assessment of these three first-time detections is supported by the ND results from the five quarterly sampling events subsequent to the March 2016 sampling event. Biennial sampling and analysis for SVOCs is sufficient to support monitoring objectives. PCB and dioxin/furan data are ND. Quinquennial sampling and analysis for these analytes is sufficient to support monitoring objectives. Predominance of NDs in radionuclide data set. Specifically, radionuclide data for two sampling events (January 2015 and March 2016) are ND except for relatively low detections of uranium-234 (0.36 and 0.27 pCi/L) and uranium-238 (0.22 and 0.14 pCi/L). All other radionuclides in the radionuclide analytical suite are ND. Biennial sampling and analysis for radionuclides is sufficient to support monitoring objectives. Predominance of NDs in tritium data set. Specifically, tritium data from January 2015 to September 2016 are ND except for one low detection in the four-result data set. The detection was 3.26 pCi/L for the sample collected in January 2015. Annual sampling and analysis for tritium is sufficient to support monitoring objectives. Annual sampling for stable isotopes added to support conceptual model.
	2018		S	Q	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	A	S	Q	Q	A	
CdV-R-15-3 S4	2017	Regional	S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	n/a
	2018		S	S	B (2018)	—	S	—	B (2018)	—	A	S	—	—	—	
CdV-R-37-2 S2	2017	Regional	—	—	—	—	A	—	—	—	A	—	—	—	—	Annual sampling and analysis for metals and general inorganics added to support evaluation of potential reducing conditions.
	2018		A	—	—	—	A	—	—	—	A	A	—	—	—	
R-18	2017	Regional	Q	Q	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Metals and general inorganics concentrations are consistent with background concentration levels. Semiannual sampling and analysis for metals and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model. Annual sampling for stable isotopes added to support conceptual model.
	2018		S	Q	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	A	
R-25 S5	2017	Regional	Q	S	—	—	Q	—	—	—	A	Q	Q	Q	—	Non-purgeable location converted to a location for monitoring tracers and stable isotopes. Annual sampling for stable isotopes added to support conceptual model.
	2018		—	—	—	—	—	—	—	—	—	—	Q	Q	A	
R-25 S6	2017	Regional	Q	S	—	—	Q	—	—	—	A	Q	—	—	—	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	—	—	—	
R-25 S7	2017	Regional	Q	S	—	—	Q	—	—	—	A	Q	—	—	—	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	—	—	—	
R-48	2017	Regional	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Same rationale as presented above for R-18.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	A	

Table 5 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXMOD[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Naphthalene Sulfonates	Sodium Bromide Tracer	$^{15}N/^{18}O$ Isotopes in Nitrate	Rationale for Changes (MY2017 to MY2018)
R-58	2017	Regional	Q	Q	Q	A	Q	A	A	—	S	Q	Q	Q	—	SVOC data are ND. Biennial sampling and analysis for SVOCs is sufficient to support monitoring objectives. PCB and dioxin/furan data are ND. Quinquennial sampling and analysis for these analytes is sufficient to support monitoring objectives. Predominance of NDs in radionuclide data set. Specifically, radionuclide data collected in MY2016 are ND except for relatively low detections of uranium-234 (0.66 and 0.82 pCi/L) and uranium-238 (0.38 and 0.48 pCi/L). All other radionuclides in the radionuclide analytical suite are ND. Biennial sampling and analysis for radionuclides is sufficient to support monitoring objectives. Annual sampling for stable isotopes added to support conceptual model.
	2018		Q	Q	B (2018)	V (2020)	Q	V (2020)	B (2018)	—	S	Q	Q	Q	A	
R-63	2017	Regional	Q	S	B (2018)	—	Q	—	B (2018)	—	A	Q	Q	Q	—	Metals and general inorganics concentrations are consistent with background concentration levels. Semiannual sampling and analysis for metals and general inorganics is sufficient to support long-term monitoring objectives and the conceptual model.
	2018		S	S	B (2018)	—	Q	—	B (2018)	—	A	S	Q	Q	—	
R-68[l]	2017	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	New well added to support regional aquifer characterization in accordance with groundwater investigation work plan (LANL 2016, 601779).
	2018		Q1	Q1	Q1	—	Q1	Q1	Q1	—	Q1	Q1	Q1	Q1	Q1	
R-68[m]	2017	Regional	—	—	—	—	—	—	—	—	—	—	—	—	—	New well added to support regional aquifer characterization in accordance with groundwater investigation work plan (LANL 2016, 601779). Annual sampling for stable isotopes added to support conceptual model.
	2018		S	Q	S	—	Q	—	B (2018)	—	A	S	Q	Q	A	

Notes: Table 5 is a crosswalk from Table 6.4-1 in the 2017 IFGMP (LANL 2016 601506) to Table 6.4-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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); Q1 = Monitor Year 2018 Q1 only.

[a] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] 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.

[e] 2018 = Samples scheduled to be collected during implementation of MY2018 Interim Plan.

[f] 2020 = Samples scheduled to be collected during implementation of MY2020 Interim Plan.

[g] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.

[h] HE = High explosive(s).

[i] n/a = Not applicable.

[j] ND = Nondetection(s).

[k] PMR = Periodic monitoring report.

[l] R-68 sampling plan for MY2018 first quarter (Q1) only. This Q1 sampling plan for R-68 produces the fourth “full analytical suite” sampling round (out of four required) for this new regional well.

[m] R-68 sampling frequencies for MY2018 quarters 2, 3, and 4. The specified sampling frequencies are used in conjunction with Table 1.7-1 in the 2018 IFGMP to develop the R-68 sampling plan for MY2018 quarters 2, 3, and 4.

Table 6
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the MDA AB Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-27i	2017	Intermediate	A	A	A	—[e]	—	—	A	—	A	A	n/a[f]
	2018		A	A	A	—	—	—	A	—	A	A	
R-27	2017	Regional	A	A	A	—	—	—	A	—	A	A	n/a
	2018		A	A	A	—	—	—	A	—	A	A	
R-29	2017	Regional	S	S	S	—	S	—	S	—	S	S	Metal and general inorganic analyte data are consistent with background values and no exceedances of PMR[g] screening values.
	2018		A	A	A	—	A	—	A	—	A	A	VOC, SVOC, HE[h] and tritium data are ND[i]. Predominance of NDs in radionuclide data set. Specifically, radionuclide data are ND except for relatively low and stable detections of uranium-234 (0.23 to 0.35 pCi/L) and uranium-238 (0.11 and 0.24 pCi/L). All other radiocuclides in the radioniclide analytical suite are ND. Annual sampling and analysis for metals, VOCs, SVOCs, HE, radionuclides, tritium, and general inorganics is sufficient to support monitoring objectives. Monitoring objectives for the MDA AB Monitoring Group are presented in Section 7.3 of the 2018 IFGMP (LANL 2017, 602406).
R-30	2017	Regional	S	S	S	—	S	—	S	—	S	S	Same rationale as presented above for R-29.
	2018		A	A	A	—	A	—	A	—	A	A	

Notes: Table 6 is a crosswalk from Table 7.4-1 in the 2017 IFGMP (LANL 2016, 601506) to Table 7.4-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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] VOCs = Volatile organic compounds.
[b] SVOCs = Semivolatile organic compounds.
[c] PCBs = Polychlorinated biphenyls.
[d] HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.
[e] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.
[f] n/a = Not applicable.
[g] PMR = Periodic monitoring report.
[h] HE = High explosive(s).
[i] ND = Nondetection(s).

Table 7
Crosswalk for the MY2017 vs MY2018 Interim Monitoring Plans for the General Surveillance Monitoring Group

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
LA Canyon near Otowi Bridge[e]	2017	Base flow	A	A	A	V (2020)[f]	T (2017)[g]	V (2020)	A	—[h]	—	A	The year for the triennial monitoring frequency was adjusted to make consistent with Appendix A of the MOU for Calendar Year 2018[j]. Sampling and analysis for tritium was discontinued after 2012. Add annual sampling and analysis for tritium in MY2018 to assess tritium activity.
	2018		A	A	A	V (2020)	T (2018) [i]	V (2020)	A	—	A	A	
Los Alamos Spring	2017	Spring	A	A	T (2017)	T (2017)	T (2017)	V (2020)	A	—	A	A	The year for the triennial monitoring frequencies was adjusted to make consistent with Appendix A of the MOU for Calendar Year 2018[j].
	2018		A	A	T (2018)	T (2018)	T (2018)	V (2020)	A	—	A	A	
Vine Tree Spring	2017	Spring	S	S	T (2017)	T (2017)	T (2017)	V (2020)	A	—	A	S	Same rationale as presented above for Los Alamos Spring.
	2018		S	S	T (2018)	T (2018)	T (2018)	V (2020)	A	—	A	S	
LLAO-1b	2017	Alluvial	A	A	T (2017)	T (2017)	T (2017)	V (2020)	A	—	—	A	Same rationale as presented above for Los Alamos Spring.
	2018		A	A	T (2018)	T (2018)	T (2018)	V (2020)	A	—	—	A	
LLAO-4	2017	Alluvial	A	A	T (2017)	T (2017)	T (2017)	V (2020)	A	—	—	A	Same rationale as presented above for Los Alamos Spring.
	2018		A	A	T (2018)	T (2018)	T (2018)	V (2020)	A	—	—	A	
LAO-3a	2017	Alluvial	A	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	—	A	n/a[k]
	2018		A	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	—	A	
LAUZ-1	2017	Alluvial	—	—	—	—	—	—	—	—	—	—	Alluvial well added to support general surveillance monitoring objectives. Monitoring objectives for the General Surveillance Monitoring Group are presented in Section 8.2 of the 2018 IFGMP (LANL 2017, 602406).
	2018		A	A	A	—	A	—	A	—	A	A	
PAO-5n	2017	Alluvial	A	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	—	A	n/a
	2018		A	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	—	A	
POI-4	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	—	A	A	The most recent two reported tritium activities are 16.4 and 9.6 pCi/L for samples collected in March 2011 and June 2017, respectively. Biennial sampling and analysis for tritium is expected to be sufficient to support monitoring objectives.
	2018		A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	
R-3i	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	—	A	A	The most recent two reported tritium activities are 61.8 and 27.7 pCi/L data for samples collected in March 2011 and June 2017, respectively. Biennial sampling and analysis for tritium is expected to be sufficient to support monitoring objectives.
	2018		A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	
TW-2Ar	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	A	—	A	The 2018 IFGMP incorrectly specifies low-level tritium analysis. Tritium activity ranges from 188 to 352 pCi/L, and as such, regular tritium analysis is the appropriate choice. This error is corrected here and the change will be reflected on any associated sample planning documentation. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	B (2018)	B (2018)	—	—	—	A	B (2018)	—	A	
R-2	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	—	A	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	—	A	A	
R-24	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	

Table 7 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-3	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	—	B (2018)	A	
R-4	2017	Regional	A	A	A	—	—	—	A	—	B (2018)	A	n/a
	2018		A	A	A	—	—	—	A	—	B (2018)	A	
Sandia right fork at Pwr Plant	2017	Base flow	A	A	A	A	T (2017)	V (2020)	A	—	—	A	HE[l] data are ND[m] (includes analytical results for the sample collected in August 2017). Quinquennial sampling and analysis for HE subsequent to sample collected in MY2020 is expected to be sufficient to support monitoring objectives.
	2018		A	A	A	A	V (2020)	V (2020)	A	—	—	A	
Sandia below Wetlands	2017	Base flow	A	A	A	A	T (2017)	V (2020)	A	—	—	A	Same rationale as presented above for Sandia right fork at Pwr Plant.
	2018		A	A	A	A	V (2020)	V (2020)	A	—	—	A	
SCA-3	2017	Alluvial	—	—	—	—	—	—	—	—	—	Q	Flood-damaged alluvial well rendered inaccessible for sampling.
	2018		—	—	—	—	—	—	—	—	—	—	
R-12 S1	2017	Intermediate	—	—	—	—	—	—	—	—	A	—	Reducing conditions present in well screen rendering all analytical data (except tritium) nonrepresentative. Biennial sampling and analysis for tritium is retained to support conceptual model.
	2018		—	—	—	—	—	—	—	—	B (2019)[n]	—	
R-12 S2	2017	Intermediate	A	B (2018)	B (2018)	—	—	—	A	—	A	A	Same rationale as presented above for R-12 S1.
	2018		—	—	—	—	—	—	—	—	B (2019)	—	
R-10 S1	2017	Regional	A	A	A	T (2017)	T (2017)	—	A	—	A	A	Same rationale as presented above for Los Alamos Spring.
	2018		A	A	A	T (2018)	T (2018)	—	A	—	A	A	
R-10 S2	2017	Regional	A	A	A	T (2017)	T (2017)	—	A	—	A	A	Same rationale as presented above for Los Alamos Spring.
	2018		A	A	A	T (2018)	T (2018)	—	A	—	A	A	
R-10a	2017	Regional	S	S	S	T (2017)	T (2017)	—	S	—	S	S	Same rationale as presented above for Los Alamos Spring.
	2018		S	S	S	T (2018)	T (2018)	—	S	—	S	S	
CDBO-6	2017	Alluvial	B (2018)	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	—	B (2018)	n/a
	2018		B (2018)	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	—	B (2018)	
MCO-5	2017	Alluvial	A	B (2018)	B (2018)	V (2020)	—	V (2020)	A	A	—	A	Tritium data are ND. Low-level tritium analysis is more appropriate than standard tritium analysis for samples collected from this location.
	2018		A	B (2018)	B (2018)	V (2020)	—	V (2020)	A	—	B (2018)	A	
MCO-7	2017	Alluvial	A	A	A	A	—	V (2020)	A	A	—	Q	Tritium data show long-term downtrend with 2016 sampling result ND. The associated minimum detectable activity of the ND result was 177 pCi/L. Low-level tritium analysis is more appropriate than standard tritium analysis for samples collected from this location, and biennial sampling and analysis for tritium is sufficient to support monitoring objectives. General inorganics analytical suite is placed on the same sampling frequency as the metals analytical suite.
	2018		A	A	A	A	—	V (2020)	A	—	B (2018)	A	

Table 7 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-16 S2	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	—	A	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	—	A	A	
R-16 S4	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	—	A	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	—	A	A	
R-16r	2017	Regional	A	B (2018)	B (2018)	—	—	—	A	—	A	A	n/a
	2018		A	B (2018)	B (2018)	—	—	—	A	—	A	A	
R-34	2017	Regional	Q	A	A	T (2017)	T (2017)	—	A	—	A	Q	Metal and general inorganic analyte data are consistent with background values and there are no exceedances of PMR[o] screening values. Annual sampling and analysis for metals and general inorganics is sufficient to support monitoring objectives. The year for the triennial monitoring frequencies was adjusted to make consistent with Appendix A of the MOU for Calendar Year 2018 [j].
	2018		A	A	A	T (2018)	T (2018)	—	A	—	A	A	
Two Mile Canyon Below TA-59	2017	Base flow	A	A	A	V (2020)	A	V (2020)	A	—	—	A	n/a
	2018		A	A	A	V (2020)	A	V (2020)	A	—	—	A	
Homestead Spring	2017	Spring	—	—	—	—	—	—	—	—	—	—	Groundwater spring added to support general surveillance monitoring objectives.
	2018		A	A	A	—	A	—	A	—	A	A	
Starmer Spring	2017	Spring	—	—	—	—	—	—	—	—	—	—	Groundwater spring added to support general surveillance monitoring objectives.
	2018		A	A	A	—	A	—	A	—	A	A	
18-MW-18	2017	Alluvial	A	B (2017)	B (2017)	V (2020)	V (2020)	V (2020)	A	—	—	A	Add biennial sampling and analysis for tritium in MY2019 to assess tritium activity.
	2018		A	B (2019)	B (2019)	V (2020)	V (2020)	V (2020)	A	—	B (2019)	A	
PCAO-8	2017	Alluvial	A	B (2017)	B (2017)	V (2020)	V (2020)	V (2020)	A	—	—	A	n/a
	2018		A	B (2019)	B (2019)	V (2020)	V (2020)	V (2020)	A	—	—	A	
03-B-13	2017	Intermediate	S	S	S	—	V (2020)	—	A	B (2017)	—	S	n/a
	2018		S	S	S	—	V (2020)	—	A	B (2019)	—	S	
PCI-2	2017	Intermediate	S	S	S	—	S	—	A	—	—	S	Tritium data are ND. Annual sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		S	S	S	—	S	—	A	—	A	S	
R-19 S2	2017	Intermediate	B (2017)	B (2017)	B (2017)	—	B (2017)	—	B (2017)	—	—	B (2017)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-17 S1	2017	Regional	A	A	A	—	A	—	A	—	B (2017)	A	Tritium data are ND. Annual sampling and analysis for tritium is expected to be sufficient to support monitoring objectives.
	2018		A	A	A	—	A	—	A	—	A	A	

Table 7 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
R-17 S2	2017	Regional	A	A	A	—	A	—	A	—	—	A	Tritium data collected from 2006 to 2011 (16-result data set) were ND. Sampling and analysis for tritium was discontinued after 2011. Add annual sampling and analysis for tritium in MY2018 to assess if tritium is still ND.
	2018		A	A	A	—	A	—	A	—	A	A	
R-19 S3	2017	Regional	B (2017)	B (2017)	B (2017)	—	B (2017)	—	B (2017)	—	—	B (2017)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-19 S4	2017	Regional	B (2017)	B (2017)	B (2017)	—	B (2017)	—	B (2017)	—	—	B (2017)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
WCO-1r	2017	Alluvial	S	B (2018)	B (2018)	V (2020)	S	V (2020)	A	—	—	S	The last tritium activity reported is 40.7 pCi/L for a sample collected in September 2010. Add annual sampling and analysis for tritium in MY2018 to assess current tritium activity.
	2018		S	B (2018)	B (2018)	V (2020)	S	V (2020)	A	—	A	S	
R-31 S4	2017	Regional	B (2018)	B (2018)	B (2018)	—	B (2018)	—	B (2018)	—	—	B (2018)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
R-31 S5	2017	Regional	B (2018)	B (2018)	B (2018)	—	B (2018)	—	B (2018)	—	—	B (2018)	Non-purgeable location converted to a water-level-monitoring-only location.
	2018		—	—	—	—	—	—	—	—	—	—	
Ancho at Rio Grande	2017	Base flow	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	—	—	B (2017)	n/a
	2018		B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	—	—	B (2019)	
Frijoles at Rio Grande	2017	Base flow	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	—	—	B (2017)	n/a
	2018		B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	—	—	B (2019)	
Mortandad at Rio Grande	2017	Base flow	B (2018)	B (2018)	B (2018)	B (2018)	B (2018)	B (2018)	B (2018)	—	—	B (2018)	n/a
	2018		B (2018)	B (2018)	B (2018)	B (2018)	B (2018)	B (2018)	B (2018)	—	—	B (2018)	
Pajarito at Rio Grande	2017	Base flow	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	—	—	B (2017)	n/a
	2018		B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	—	—	B (2019)	
Rio Grande at Frijoles	2017	Base flow	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	B (2017)	—	—	B (2017)	n/a
	2018		B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	B (2019)	—	—	B (2019)	
Rio Grande at Otowi Bridge	2017	Base flow	A	A	A	A	—	A	A	—	A	A	n/a
	2018		A	A	A	A	—	A	A	—	A	A	
Ancho Spring	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
La Mesita Spring	2017	Spring	A	A	A	T (2017)	T (2017)	—	A	—	A	A	Same rationale as presented above for Los Alamos Spring.
	2018		A	A	A	T (2018)	T (2018)	—	A	—	A	A	
Upper La Mesita Spring	2017	Spring	—	—	—	—	—	—	—	—	—	—	Additional groundwater spring sampling location to La Mesita Spring, which has experienced a steady decrease in flow.
	2018		A	A	A	T (2018)	T (2018)	—	A	—	A	A	

Table 7 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
Sacred Spring	2017	Spring	A	A	A	T (2017)	T (2017)	—	A	—	A	A	Same rationale as presented above for Los Alamos Spring.
	2018		A	A	A	T (2018)	T (2018)	—	A	—	A	A	
Sandia Spring	2017	Spring	A	A	A	B (2018)	B (2018)	—	A	—	A	A	n/a
	2018		A	A	A	B (2018)	B (2018)	—	A	—	A	A	
Lower Sandia Spring	2017	Spring	—	—	—	—	—	—	—	—	—	—	Replacement groundwater spring sampling location for Sandia Spring, which has been covered with flood-mobilized alluvium, and as a result, groundwater expression has ceased at this location.
	2018		A	A	A	B (2018)	B (2018)	—	A	—	A	A	
Spring 1	2017	Spring	A	A	A	A	A	—	A	—	A	A	n/a
	2018		A	A	A	A	A	—	A	—	A	A	
Spring 2	2017	Spring	A	A	A	B (2018)	B (2018)	—	A	—	A	A	The 2018 IFGMP did not specify annual sampling of Spring 2 for the general inorganics suite. This error is corrected here and in the EIM[p] sample planning table for the White Rock and Rio Grande sampling campaign.
	2018		A	A	A	B (2018)	B (2018)	—	A	—	A	A	
Spring 3[q]	2017	Spring	A	A	A	B (2017)	A	B (2017)	A	—	A	A	Tritium datum (October 2016) is ND. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	A	A	B (2019)	A	B (2019)	A	—	B (2019)	A	
Spring 3A	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 3AA	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 4[q]	2017	Spring	A	A	A	A	A	A	A	—	A	A	Tritium datum (October 2016) shows low activity (4.9 pCi/L). Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	A	A	A	A	A	A	—	B (2019)	A	
Spring 4A	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 4AA	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 4B	2017	Spring	A	A	A	—	A	—	A	—	A	A	Tritium datum (October 2016) is ND. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	A	A	—	A	—	A	—	B (2019)	A	
Spring 5	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 5A	2017	Spring	A	A	A	—	A	—	A	—	A	A	The last tritium activity reported is ND for a sample collected in September 2008. Add biennial sampling and analysis for tritium in MY2019 to assess tritium activity.
	2018		A	A	A	—	A	—	A	—	B (2019)	A	
Spring 5B	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	

Table 7 (continued)

Location	Interim Plan Monitoring Year	Surface Water Body or Source Aquifer	Metals	VOCs[a]	SVOCs[b]	PCBs[c]	HEXP[d]	Dioxins/Furans	Radionuclides	Tritium	Low-Level Tritium	General Inorganics	Rationale for Changes (MY2017 to MY2018)
Spring 6	2017	Spring	A	A	A	—	A	—	A	—	A	A	Tritium data (December 2013 and October 2016) are ND. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	A	A	—	A	—	A	—	B (2019)	A	
Spring 6A	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 8A	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	
Spring 9	2017	Spring	A	A	A	—	A	—	A	—	A	A	Tritium data (December 2013 and October 2016) are ND. Biennial sampling and analysis for tritium is sufficient to support monitoring objectives.
	2018		A	A	A	—	A	—	A	—	B (2019)	A	
Spring 9A	2017	Spring	A	A	A	—	A	—	A	—	A	A	n/a
	2018		A	A	A	—	A	—	A	—	A	A	

Notes: Table 7 is a crosswalk from Table 8.3-1 in the 2017 IFGMP (LANL 2016, 601506) to Table 8.3-1 in the 2018 IFGMP (LANL 2017, 602406). Sampling suites and frequencies: M = monthly (12 times/yr); 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] VOCs = Volatile organic compounds.

[b] SVOCs = Semivolatile organic compounds.

[c] PCBs = Polychlorinated biphenyls.

[d] HEXP = Analytical suite for analysis of samples for high explosives by SW-846:8330B.

[e] Orange shading indicates a sampling location is on Pueblo de San Ildefonso land.

[f] 2020 = Samples scheduled to be collected during implementation of MY2020 Interim Plan.

[g] 2017 = Samples scheduled to be collected during implementation of MY2017 Interim Plan.

[h] — = This analytical suite is not scheduled to be collected for this type of water at locations assigned to this monitoring group.

[i] 2018 = Samples scheduled to be collected during implementation of MY2018 Interim Plan.

[j] Memorandum of Understanding (MOU) for the Plan for Environmental Sampling at Pueblo de San Ildefonso and LANL (Appendix A) for January 1, 2018 through December 31, 2018.

[k] n/a = Not applicable.

[l] HE = High explosive(s).

[m] ND = Nondetection(s).

[n] 2019 = Samples scheduled to be collected during implementation of MY2019 Interim Plan.

[o] PMR = Periodic monitoring report.

[p] EIM = Environmental Information Management (system).

[q] Springs 3 and 4 are backup locations for primary “TA-54 Area G PCB compliance monitoring locations” R-57 S1 and R-57 S2 per EPC-CP-QP-205. 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.