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August 27, 2018

Steven Black
Point of Contact
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U.S. Department of Energy
Sandia Field Office
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Albuquerque, New Mexico 87185-5400

Subject: Data Submittal for Groundwater Monitoring at Sandia National Laboratories/New Mexico Long-Term Stewardship Consolidated Groundwater Monitoring Program Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2018 Q-2

Mr. Black:

This letter transmits the subject report as final. The report shows groundwater data results from Sandia National Laboratories Long-Term Stewardship Consolidated Groundwater Monitoring Program collected by the New Mexico Environment Department DOE Oversight Bureau during second quarter FFY 2018.

The enclosed monitoring results were provided to the U.S Department of Energy in draft form on July 26, 2018 for 30-day review and comment. The final monitoring results are provided to DOE, the State of New Mexico and other federal agencies, the NMED website and interested members of the public. If you have any questions, or if you would like copies of the complete data set, please contact me by phone at (505) 383-2070, by email at chris.armijo1@state.nm.us, or by mail to the address in the above letterhead.

Sincerely,

Chris Armijo
Environmental Scientist
Sandia Oversight Section

- Enclosure:
- (1) Groundwater Monitoring at Sandia National Laboratories/New Mexico Long-Term Stewardship Consolidated Groundwater Monitoring Program Conducted by the New Mexico Environment Department DOE Oversight Bureau for Second Quarter FFY 2018
 - (2) Table-1 Dissolved Target Analyte List Metals plus Uranium Results
 - (3) Table-2 Total Mercury Results
 - (4) Table-3 Alkalinity, Anions, Nitrate-Nitrite as Nitrogen and Total Cyanide Results
 - (5) Table-4 Method Detection Limits for High Explosive Compounds
 - (6) Table-5 Detected Volatile Organic Compounds Results
 - (7) Table-6 Method Detection Limits for Volatile Organic Compounds
 - (8) Table-7 Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium Results

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File: SGE42.Groundwater Monitoring. LTS GMP. FFY 2018 Q-2

DOE Oversight Bureau, New Mexico Environment Department

**Groundwater Monitoring at
Sandia National Laboratories/New Mexico
Long-Term Stewardship Consolidated Groundwater Monitoring Program**

**Conducted by the
New Mexico Environment Department DOE Oversight Bureau
for FFY 2018 Q-2**

**Prepared by Chris Armijo, Environmental Scientist
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Final Report

8/27/2018

The purpose of this communication is to transmit groundwater quality data collected by the New Mexico Environment Department DOE Oversight Bureau from Sandia National Laboratories, New Mexico (SNL/NM) Long-Term Stewardship Consolidated Groundwater Monitoring Program during the second quarter of Federal Fiscal Year 2019.

Acknowledgment:

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Introduction

The New Mexico Environment Department (NMED) DOE Oversight Bureau (DOE-OB or Bureau) has compiled and assessed groundwater data collected during March 2018. The Bureau collected groundwater samples from Long-Term Stewardship (LTS) Consolidated Groundwater Monitoring Program (GMP) monitoring wells Greystone-MW2, MRN-2, MRN-3D, NWT A3-MW3D, PL-2, PL-4, SFR-2S (plus duplicate), SFR-4T, SWTA3-MW2, SWTA3-MW3, SWTA3-MW4 and TRE-1. Samples were also collected from Coyote Springs located in Arroyo del Coyote. Samples were collected using standard Sandia National Laboratories, New Mexico (SNL/NM) sampling procedures and equipment. The samples were submitted for analysis to an independent analytical laboratory for target analyte list (TAL) metals plus uranium, total mercury, alkalinity (Coyote Springs only), anions, nitrate-nitrite as nitrogen (N), cyanide, volatile organic compounds (VOCs), high explosives (HE), gamma emitting isotopes, gross alpha and beta, radium, and isotopic uranium. All samples were filtered in the field using an in-line filter of 0.45-micron pore size, except those for VOCs, HE, and mercury fractions.

An elevated concentration of beryllium, exceeding the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Level was observed in the sample collected from Coyote Springs. All other sample results were detected below EPA standards.

Data Assessment

All groundwater samples were collected and analyzed in accordance with U.S EPA-specified protocols. Data results are compared to applicable Maximum Contaminant Levels (MCLs) established by the U.S. EPA National Primary Drinking Water Regulations (40 CFR 141), National Primary Drinking Water Standards, EPA, July 2002 and Maximum Allowable Concentrations (MACs) established by the New Mexico Water Quality Control Commission (NMWQCC), Standards for Groundwater (20.6.2.3103A) Human Health Standards.

Results

Analytical results for TAL metals are presented in Table-1. Samples were analyzed for dissolved (filtered) metals plus uranium. No metal parameters were detected above established regulatory standards, except for beryllium. Beryllium was detected above the EPA MCL of 0.004 milligrams per liter (mg/L) from the sample collected at Coyote Springs at a concentration of 0.0075 mg/L.

Mercury results are summarized in Table-2. Mercury was analyzed using unfiltered samples and is reported as total mercury. Mercury was not detected above associated laboratory method detection limits (MDLs) from any groundwater sample.

Analytical results for alkalinity, anions (bromide, chloride, fluoride and sulfate), nitrate-nitrite as nitrogen and total cyanide are presented in Table-3. No analytes were detected above established MACs or MCLs, except for fluoride. Fluoride was detected above the MAC of 1.6 mg/L in the sample from monitoring well SFR-4T at a concentration of 3.0 mg/L. Nitrate was detected in water samples above associated MDLs and ranged from 0.22 mg/L at SFR-4T to 5.0 mg/L at Greystone-MW2. Total cyanide was not detected in any groundwater sample.

Volatile organic compounds detected above the laboratory MDLs are listed in Table-4. Chloroform and toluene were the only compounds detected above the laboratory MDLs. Chloroform was detected at TRE-1 at a concentration of 0.70 microgram per liter ($\mu\text{g/L}$) and toluene was detected in the samples collected from MRN-2, SWTA3-MW3 and SWTA3-MW4 at concentrations of 0.53 $\mu\text{g/L}$, 0.34 $\mu\text{g/L}$ and 0.32 $\mu\text{g/L}$, respectively. Results were below the laboratory detection limit and established MAC and MCL. Table-5 lists the laboratory MDLs for the remaining VOC compounds.

No HE compounds were detected above laboratory MDLs. The laboratory MDLs for HE compounds are listed in Table-6. Analysis for HE compounds was only conducted on groundwater samples collected from Coyote Springs and monitoring wells SFR-2S, SFR-4T, SWTA3-MW2, SWTA3-MW3, SWTA3-MW4 and TRE-1.

Analytical results for radiological analyses are summarized in Table-7. Samples were analyzed for gross alpha and beta, gamma emitting isotopes, radium-226, radium-228, and isotopic uranium. Unadjusted gross alpha activity ranged from 1.6 picocuries per liter (pCi/L) at SWTA3-MW4 to 23 pCi/L at TRE-1. The EPA MCL for gross alpha activity of 15 pCi/L is based on a corrected gross alpha value, which excludes both total uranium and radon from initial gross alpha count. Subsequently, when the total uranium activity is subtracted from the gross alpha value, the gross activity results from all samples are below the MCL. Gross alpha results in Table-7 are reported as uncorrected results. All other gamma emitters and radium isotopes were below established MACs and MCLs.

Conclusion

During this annual sampling event for LTS-GMP, environmental samples were collected from twelve (12) groundwater monitoring wells Greystone-MW2, MRN-2, MRN-3D, NWTAA3-MW3D, PL-2, PL-4, SFR-2S, SFR-4T, SWTA3-MW2, SWTA3-MW3, SWTA3-MW4 and TRE-1. One (1) surface water sample was also collected from Coyote Springs. Beryllium was detected above the MCL of 0.004 mg/L in the sample collected from Coyote Springs at a concentration of 0.0075 mg/L. Beryllium concentrations observed during this event compare well to past data. Historically, beryllium concentrations at Coyote Springs have exceeded the EPA drinking water standard. Fluoride was detected above the MAC of 1.6 mg/L

in the sample collected from monitoring well SFR-4T at a concentration of 3.0 mg/L. The EPA MCL for fluoride is 4.0 mg/L. Historically, fluoride has exceeded the MAC. All other sample results were detected below associated MACs and MCLs.

The DOE-OB will continue to collect and monitor groundwater quality at these LTS GMP monitoring wells, including Coyote Springs, and provide data results to DOE.

References

Data Submittal for Groundwater Monitoring at Sandia National Laboratories/New Mexico Long-Term Stewardship Consolidated Groundwater Monitoring Program Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2017.

New Mexico Water Quality Control Commission (NMWQCC), 2004. Environmental Protection, Water Quality, Ground and Surface Water Protection Regulations, Section 20.6.2 of the New Mexico Administrative Code, Santa Fe, New Mexico, September 26.

Sandia National Laboratories/New Mexico (SNL/NM). "Annual Groundwater Monitoring Report Calendar Year 2017." Sandia National Laboratories, Albuquerque, New Mexico.

U.S. EPA National Primary Drinking Water Regulations (40 CFR 141), National Primary Drinking Water Standards, EPA, July 2002.

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
COYOTE SPRINGS 15-Mar-18	Aluminum	0.19	NE	NE	0.1	0.0087		SW846:6020
	Antimony	0.00006	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0046	0.01	0.100	0.002	0.0016		SW846:6020
	Barium	0.076	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.0075	0.004	NE	0.0005	0.000081		SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	400	NE	NE	1	0.077		SW846:6020
	Chromium	0.00082	0.1	0.100	0.01	0.00082	U	SW846:6020
	Cobalt	0.0091	NE	NE	0.005	0.00016		SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.072	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	88	NE	NE	0.1	0.012		SW846:6020
	Manganese	1.3	NE	NE	0.005	0.00032		SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.033	NE	NE	0.02	0.00081		SW846:6020
	Potassium	33	NE	NE	1	0.11		SW846:6020
	Selenium	0.0022	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	460	NE	NE	1	0.18		SW846:6020
Thallium	0.0013	0.002	NE	0.0001	0.000015		SW846:6020	
Uranium	0.021	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0027	NE	NE	0.005	0.00023	J	SW846:6020	
Zinc	0.035	NE	NE	0.1	0.0035	J	SW846:6020	

Bold = Result exceeds EPA MCL.

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

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 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
Greystone-MW2 21-Mar-18	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.000049	0.006	NE	0.001	0.000049	U	SW846:6020
	Arsenic	0.0024	0.01	0.100	0.002	0.0016		SW846:6020
	Barium	0.14	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.00011	0.004	NE	0.0005	0.000081	J	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	140	NE	NE	1	0.077		SW846:6020
	Chromium	0.00082	0.1	0.100	0.01	0.00082	U	SW846:6020
	Cobalt	0.00021	NE	NE	0.005	0.00016	J	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.0047	NE	NE	0.1	0.0047	U	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	28	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00032	NE	NE	0.005	0.00032	U	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.00081	NE	NE	0.02	0.00081	U	SW846:6020
	Potassium	4.8	NE	NE	1	0.11		SW846:6020
	Selenium	0.0015	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	92	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0067	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0025	NE	NE	0.005	0.00023	J	SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

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Table-1

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 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MRN-2 12-Mar-18	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.00006	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.055	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	49	NE	NE	1	0.077		SW846:6020
	Chromium	0.0018	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.0047	NE	NE	0.1	0.0047	U	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	15	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00032	NE	NE	0.005	0.00032	U	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.00081	NE	NE	0.02	0.00081	U	SW846:6020
	Potassium	3.3	NE	NE	1	0.11		SW846:6020
	Selenium	0.0012	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	24	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0029	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0068	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

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 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MRN-3D 13-Mar-18	Aluminum	0.011	NE	NE	0.1	0.0087	J	SW846:6020
	Antimony	0.00012	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.11	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.00007	0.005	0.010	0.002	0.000062	J	SW846:6020
	Calcium	58	NE	NE	1	0.077		SW846:6020
	Chromium	0.0054	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.02	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.00015	NE	NE	0.002	0.000096	J	SW846:6020
	Magnesium	14	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.0037	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0054	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	4.4	NE	NE	1	0.11		SW846:6020
	Selenium	0.0011	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.00004	NE	0.05	0.0005	0.000023	J	SW846:6020
	Sodium	27	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0036	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0051	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.022	NE	NE	0.1	0.0035	J	SW846:6020	

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Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
NWTA3-MW3D 23-Mar-18	Aluminum	0.011	NE	NE	0.1	0.0087	J	SW846:6020
	Antimony	0.000049	0.006	NE	0.001	0.000049	U	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.088	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	39	NE	NE	1	0.077		SW846:6020
	Chromium	0.0024	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.014	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	7.8	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00065	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0011	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	3.6	NE	NE	1	0.11		SW846:6020
	Selenium	0.0012	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	36	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0035	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0066	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

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PL-2 12-Mar-18	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.00005	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.075	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	58	NE	NE	1	0.077		SW846:6020
	Chromium	0.0031	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.0047	NE	NE	0.1	0.0047	U	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	9.7	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00032	NE	NE	0.005	0.00032	U	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0023	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	3.6	NE	NE	1	0.11		SW846:6020
	Selenium	0.0015	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	29	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0034	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0055	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.005	NE	NE	0.1	0.0035	J	SW846:6020	

Bold = Result exceeds EPA MCL.

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
PL-4 13-Mar-18	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.00009	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.072	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	70	NE	NE	1	0.077		SW846:6020
	Chromium	0.0051	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.019	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	13	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.0034	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0029	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	5.3	NE	NE	1	0.11		SW846:6020
	Selenium	0.0013	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	26	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0036	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0034	NE	NE	0.005	0.00023	J	SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

Bold = Result exceeds EPA MCL.

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SFR-2S 19-Mar-18	Aluminum	0.0095	NE	NE	0.1	0.0087	J	SW846:6020
	Antimony	0.000049	0.006	NE	0.001	0.000049	U	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.059	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	130	NE	NE	1	0.077		SW846:6020
	Chromium	0.0012	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0065	NE	NE	0.02	0.0016	J	SW846:6020
	Iron	0.0078	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	37	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.003	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.011	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	7.5	NE	NE	1	0.11		SW846:6020
	Selenium	0.0017	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	85	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.016	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0029	NE	NE	0.005	0.00023	J	SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

Bold = Result exceeds EPA MCL.

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SFR-2S 19-Mar-18 (Duplicate)	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.000049	0.006	NE	0.001	0.000049	U	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.058	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	120	NE	NE	1	0.077		SW846:6020
	Chromium	0.0011	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0065	NE	NE	0.02	0.0016	J	SW846:6020
	Iron	0.009	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	35	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.0023	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0072	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	7.2	NE	NE	1	0.11		SW846:6020
	Selenium	0.0015	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	81	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.015	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0028	NE	NE	0.005	0.00023	J	SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

Bold = Result exceeds EPA MCL.

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SFR-4T 20-Mar-18	Aluminum	0.013	NE	NE	0.1	0.0087	J	SW846:6020
	Antimony	0.00009	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0018	0.01	0.100	0.002	0.0016	J	SW846:6020
	Barium	0.0087	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	62	NE	NE	1	0.077		SW846:6020
	Chromium	0.0014	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.095	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	3.6	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.0066	NE	NE	0.005	0.00032		SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0047	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	2.2	NE	NE	1	0.11		SW846:6020
	Selenium	0.00018	0.05	0.05	0.01	0.00018	U	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	1100	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.00025	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.00028	NE	NE	0.005	0.00023	J	SW846:6020	
Zinc	0.01	NE	NE	0.1	0.0035	J	SW846:6020	

Bold = Result exceeds EPA MCL.

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NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW2 22-Mar-18	Aluminum	0.011	NE	NE	0.1	0.0087	J	SW846:6020
	Antimony	0.000049	0.006	NE	0.001	0.000049	U	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.072	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	45	NE	NE	1	0.077		SW846:6020
	Chromium	0.0013	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.0047	NE	NE	0.1	0.0047	U	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	13	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00032	NE	NE	0.005	0.00032	U	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0022	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	3.9	NE	NE	1	0.11		SW846:6020
	Selenium	0.0009	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	38	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0031	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0057	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

Bold = Result exceeds EPA MCL.

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NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW3 9-Mar-18	Aluminum	0.0096	NE	NE	0.1	0.0087	J	SW846:6020
	Antimony	0.00005	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.058	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	37	NE	NE	1	0.077		SW846:6020
	Chromium	0.001	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.0076	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	11	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00032	NE	NE	0.005	0.00032	U	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.00081	NE	NE	0.02	0.00081	U	SW846:6020
	Potassium	4.6	NE	NE	1	0.11		SW846:6020
	Selenium	0.00085	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	49	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0024	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0072	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.0056	NE	NE	0.1	0.0035	J	SW846:6020	

Bold = Result exceeds EPA MCL.

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NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW4 23-Mar-18	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.00005	0.006	NE	0.001	0.000049	J	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.052	2	1	0.005	0.0016		SW846:6020
	Beryllium	0.000081	0.004	NE	0.0005	0.000081	U	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	37	NE	NE	1	0.077		SW846:6020
	Chromium	0.0025	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.0067	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	10	NE	NE	0.1	0.012		SW846:6020
	Manganese	0.00038	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.0057	NE	NE	0.02	0.00081	J	SW846:6020
	Potassium	4.4	NE	NE	1	0.11		SW846:6020
	Selenium	0.001	0.05	0.05	0.01	0.00018	J	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	60	NE	NE	1	0.18		SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.0023	0.03	0.03	0.0001	0.000022		SW846:6020	
Vanadium	0.0072	NE	NE	0.005	0.00023		SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

Bold = Result exceeds EPA MCL.

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-1

Groundwater Quality Results: Dissolved (Filtered) Target Analyte List Metals plus Uranium
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TRE-1 14-Mar-18	Aluminum	0.0087	NE	NE	0.1	0.0087	U	SW846:6020
	Antimony	0.000049	0.006	NE	0.001	0.000049	U	SW846:6020
	Arsenic	0.0016	0.01	0.100	0.002	0.0016	U	SW846:6020
	Barium	0.0016	2	1	0.005	0.0016	U	SW846:6020
	Beryllium	0.0002	0.004	NE	0.0005	0.000081	J	SW846:6020
	Cadmium	0.000062	0.005	0.010	0.002	0.000062	U	SW846:6020
	Calcium	0.077	NE	NE	1	0.077	U	SW846:6020
	Chromium	0.00082	0.1	0.100	0.01	0.00082	J	SW846:6020
	Cobalt	0.00016	NE	NE	0.005	0.00016	U	SW846:6020
	Copper	0.0016	NE	NE	0.02	0.0016	U	SW846:6020
	Iron	0.079	NE	NE	0.1	0.0047	J	SW846:6020
	Lead	0.000096	NE	NE	0.002	0.000096	U	SW846:6020
	Magnesium	0.012	NE	NE	0.1	0.012	U	SW846:6020
	Manganese	0.0012	NE	NE	0.005	0.00032	J	SW846:6020
	Mercury	0.00006	0.002	0.002	0.0001	0.00006	U	SW846:7470A
	Nickel	0.00081	NE	NE	0.02	0.00081	U	SW846:6020
	Potassium	0.11	NE	NE	1	0.11	U	SW846:6020
	Selenium	0.00018	0.05	0.05	0.01	0.00018	U	SW846:6020
	Silver	0.000023	NE	0.05	0.0005	0.000023	U	SW846:6020
	Sodium	0.18	NE	NE	1	0.18	U	SW846:6020
Thallium	0.000015	0.002	NE	0.0001	0.000015	U	SW846:6020	
Uranium	0.000022	0.03	0.03	0.0001	0.000022	U	SW846:6020	
Vanadium	0.00023	NE	NE	0.005	0.00023	U	SW846:6020	
Zinc	0.0035	NE	NE	0.1	0.0035	U	SW846:6020	

Bold = Result exceeds EPA MCL.

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NE = Not Established

U = the analyte was analyzed for but not detected

Table-2

Groundwater Quality Results: Total Mercury
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	MAC/ MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
COYOTE SPRINGS 15-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
Greystone-MW2 21-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
MRN-2 12-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
MRN-3D 13-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
NWTA3-MW3D 23-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
PL-2 12-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
PL-4 13-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
SFR-2S 19-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
SFR-2S 19-Mar-18 (Duplicate)	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
SFR-4T 20-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
SWTA3-MW2 22-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
SWTA3-MW3 9-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
SWTA3-MW4 23-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A
TRE-1 14-Mar-18	Mercury	0.00006	0.002	0.0001	0.00006	U	SW846:7470A

U = the analyte was analyzed for but not detected

Table-3

Groundwater Quality Results: Alkalinity, Anions, Nitrate-Nitrite as Nitrogen and Total Cyanide
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
COYOTE SPRINGS 15-Mar-18	Alkalinity-CO3	20	NE	NE	20	20	U	EPA: 310.1
	Alkalinity-CO3+HCO3	1000	NE	NE	20	20		EPA: 310.1
	Alkalinity-HCO3	1000	NE	NE	20	20		EPA: 310.1
	Bromide	16	NE	NE	2	0.6		EPA: 300.0
	Chloride	490	NE	NE	10	3		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	1.1	4	1.6	1	0.3		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	0.52	10	10	0.01	0.003		EPA: 353.2
Greystone-MW2 21-Mar-18	Sulfate	130	NE	NE	10	1.5		EPA: 300.0
	Bromide	0.38	NE	NE	0.2	0.06		EPA: 300.0
	Chloride	120	NE	NE	2	0.6		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.75	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	5	10	10	0.1	0.03		EPA: 353.2
MRN-2 12-Mar-18	Sulfate	53	NE	NE	1	0.15		EPA: 300.0
	Bromide	0.06	NE	NE	0.2	0.06	U	EPA: 300.0
	Chloride	14	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.55	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	3.7	10	10	0.1	0.03		EPA: 353.2
MRN-3D 13-Mar-18	Sulfate	70	NE	NE	1	0.15		EPA: 300.0
	Bromide	1.2	NE	NE	0.2	0.06		EPA: 300.0
	Chloride	15	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.51	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	2.9	10	10	0.1	0.03		EPA: 353.2
NWTA3-MW3D 23-Mar-18	Sulfate	53	NE	NE	1	0.15		EPA: 300.0
	Bromide	0.06	NE	NE	0.2	0.06	U	EPA: 300.0
	Chloride	12	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.65	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	1.1	10	10	0.01	0.003		EPA: 353.2

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-3

Groundwater Quality Results: Alkalinity, Anions, Nitrate-Nitrite as Nitrogen and Total Cyanide
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
PL-2 12-Mar-18	Bromide	0.06	NE	NE	0.2	0.06	U	EPA: 300.0
	Chloride	15	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.42	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	2.6	10	10	0.1	0.03		EPA: 353.2
	Sulfate	71	NE	NE	1	0.15		EPA: 300.0
PL-4 13-Mar-18	Bromide	0.074	NE	NE	0.2	0.06	J	EPA: 300.0
	Chloride	16	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.29	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	4.8	10	10	0.1	0.03		EPA: 353.2
	Sulfate	70	NE	NE	1	0.15		EPA: 300.0
SFR-2S 19-Mar-18	Bromide	0.4	NE	NE	0.2	0.06		EPA: 300.0
	Chloride	130	NE	NE	2	0.6		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	1.4	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	0.86	10	10	0.01	0.003		EPA: 353.2
	Sulfate	72	NE	NE	1	0.15		EPA: 300.0
SFR-2S 19-Mar-18 (Duplicate)	Bromide	0.41	NE	NE	0.2	0.06		EPA: 300.0
	Chloride	130	NE	NE	2	0.6		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	1.4	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	0.87	10	10	0.01	0.003		EPA: 353.2
	Sulfate	72	NE	NE	1	0.15		EPA: 300.0
SFR-4T 20-Mar-18	Bromide	0.6	NE	NE	2	0.6	U	EPA: 300.0
	Chloride	200	NE	NE	2	0.6		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	3	4	1.6	1	0.3		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	0.22	10	10	0.01	0.003		EPA: 353.2
	Sulfate	2000	NE	NE	50	7.5		EPA: 300.0

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-3

Groundwater Quality Results: Alkalinity, Anions, Nitrate-Nitrite as Nitrogen and Total Cyanide
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	NMWQCC MAC (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW2 22-Mar-18	Bromide	0.24	NE	NE	0.2	0.06		EPA: 300.0
	Chloride	18	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	0.9	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	0.95	10	10	0.01	0.003		EPA: 353.2
	Sulfate	56	NE	NE	1	0.15		EPA: 300.0
SWTA3-MW3 9-Mar-18	Bromide	0.081	NE	NE	0.2	0.06	J	EPA: 300.0
	Chloride	15	NE	NE	0.2	0.06		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	1.2	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	0.62	10	10	0.1	0.03		EPA: 353.2
	Sulfate	63	NE	NE	1	0.15		EPA: 300.0
SWTA3-MW4 23-Mar-18	Bromide	0.061	NE	NE	0.2	0.06	J	EPA: 300.0
	Chloride	22	NE	NE	2	0.6		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	1.5	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	1.2	10	10	0.01	0.003		EPA: 353.2
	Sulfate	50	NE	NE	1	0.15		EPA: 300.0
TRE-1 14-Mar-18	Bromide	0.47	NE	NE	0.2	0.06		EPA: 300.0
	Chloride	140	NE	NE	2	0.6		EPA: 300.0
	Cyanide (Total)	0.0015	0.2	0.2	0.005	0.0015	U	SW846: 9014
	Fluoride	1.5	4	1.6	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	2.1	10	10	0.1	0.03		EPA: 353.2
	Sulfate	110	NE	NE	10	1.5		EPA: 300.0

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

U = the analyte was analyzed for but not detected

Table-4

Groundwater Quality Results: Method Detection Limits for High Explosive Compounds (SW-846:8330B)
SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
New Mexico Environment Department DOE Oversight Bureau
March 2018

Analyte	MDL (µg/L)	
Amino-2,6-dinitrotoluene[4-]	0.055	- 0.059
Amino-4,6-dinitrotoluene[2-]	0.016	- 0.018
Dinitrobenzene[1,3-]	0.055	- 0.059
Dinitrotoluene[2,4-]	0.055	- 0.059
Dinitrotoluene[2,6-]	0.055	- 0.059
HMX	0.039	- 0.043
Nitrobenzene	0.055	- 0.059
Nitrotoluene[2-]	0.096	- 0.1
Nitrotoluene[3-]	0.062	- 0.067
Nitrotoluene[4-]	0.096	- 0.1
RDX	0.039	- 0.043
Tetryl	0.055	- 0.059
Trinitrobenzene[1,3,5-]	0.034	- 0.037
Trinitrotoluene[2,4,6-]	0.055	- 0.059

Table-5

Groundwater Quality Results: Detected Volatile Organic Compounds
SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
New Mexico Environment Department DOE Oversight Bureau
March 2018

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	EPA MCL (µg/L)	NMWQCC MAC (µg/L)	Laboratory Detection Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
MRN-2 12-Mar-18	Toluene	0.53	1000	750	1	0.31	J	SW846:8260B
SWTA3-MW3 9-Mar-18	Toluene	0.34	1000	750	1	0.31	J	SW846:8260B
SWTA3-MW4 23-Mar-18	Toluene	0.32	1000	750	1	0.31	J	SW846:8260B
TRE-1 14-Mar-18	Chloroform	0.7	NE	100	1	0.3	J	SW846:8260B

J = the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL).

NE = Not Established

Table-6

Groundwater Quality Results: Method Detection Limits for Volatile Organic Compounds (SW-846:8260B)
 SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program
 New Mexico Environment Department DOE Oversight Bureau
 March 2018

Analyte	MDL (µg/L)
Acetone	3
Benzene	0.32
Bromobenzene	0.3
Bromochloromethane	0.32
Bromodichloromethane	0.35
Bromoform	0.34
Bromomethane	0.3
Butanone[2-]	3
Butylbenzene[n-]	0.3
Butylbenzene[sec-]	0.3
Butylbenzene[tert-]	0.3
Carbon Disulfide	0.3
Carbon Tetrachloride	0.32
Chlorobenzene	0.3
Chlorodibromomethane	0.35
Chloroethane	0.32
Chloroform	0.3
Chlorohexane[1-]	0.3
Chloromethane	0.3
Chlorotoluene[2-]	0.3
Chlorotoluene[4-]	0.3
Dibromo-3-Chloropropane[1,2-]	0.66
Dibromoethane[1,2-]	0.3
Dibromomethane	0.31
Dichlorobenzene[1,2-]	0.3
Dichlorobenzene[1,3-]	0.3
Dichlorobenzene[1,4-]	0.3
Dichlorodifluoromethane	0.32
Dichloroethane[1,1-]	0.3
Dichloroethane[1,2-]	0.3
Dichloroethene[1,1-]	0.3
Dichloroethene[cis-1,2-]	0.33
Dichloroethene[trans-1,2-]	0.33
Dichloropropane[1,2-]	0.3
Dichloropropane[1,3-]	0.3

Analyte	MDL (µg/L)
Dichloropropane[2,2-]	0.33
Dichloropropene[1,1-]	0.3
Dichloropropene[cis-1,3-]	0.33
Dichloropropene[trans-1,3-]	0.33
Ethylbenzene	0.31
Hexachlorobutadiene	0.3
Hexanone[2-]	3
Iodomethane	0.3
Isopropylbenzene	0.3
Isopropyltoluene[4-]	0.3
Methyl tert-Butyl Ether	0.31
Methyl-2-pentanone[4-]	3
Methylene Chloride	0.3
Naphthalene	0.3
Propylbenzene[1-]	0.3
Styrene	0.32
Tetrachloroethane[1,1,1,2-]	0.3
Tetrachloroethane[1,1,2,2-]	0.3
Tetrachloroethene	0.3
Toluene	0.31
Trichloro-1,2,2-trifluoroethane[1,1,2-]	0.3
Trichlorobenzene[1,2,3-]	0.3
Trichlorobenzene[1,2,4-]	0.3
Trichloroethane[1,1,1-]	0.3
Trichloroethane[1,1,2-]	0.3
Trichloroethene	0.31
Trichlorofluoromethane	0.31
Trichloropropane[1,2,3-]	0.3
Trimethylbenzene[1,2,4-]	0.3
Trimethylbenzene[1,3,5-]	0.3
Vinyl acetate	0.78
Vinyl Chloride	0.31
Xylene[1,2-]	0.31
Xylene[1,3-]+Xylene[1,4-]	0.31

Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

New Mexico Environment Department DOE Oversight Bureau

March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
COYOTE SPRINGS 15-Mar-18	Actinium-228	18 ± 5.9	NE	NE	18		EPA:901.1
	Americium-241	5.5 ± 14	NE	NE	47	U	EPA:901.1
	Beryllium-7	-1.4 ± 13	NE	NE	44	U	EPA:901.1
	Bismuth-212	12 ± 20	NE	NE	68	U	EPA:901.1
	Bismuth-214	8.8 ± 3.2	NE	NE	10	U	EPA:901.1
	Cesium-134	0.1 ± 1.5	NE	NE	4.9	U	EPA:901.1
	Cesium-137	-3.6 ± 1.6	NE	NE	5.5	U	EPA:901.1
	Cobalt-60	-0.38 ± 1.5	NE	NE	5.3	U	EPA:901.1
	Gross alpha	12 ± 2.6	15	NE	7.1		EPA:900.0
	Gross beta	26 ± 2.9	4mrem/yr	NE	6.2		EPA:900.0
	Iodine-131	-8.3 ± 8.1	NE	NE	28	U	EPA:901.1
	Lead-212	5.2 ± 2.2	NE	NE	7.1	U	EPA:901.1
	Lead-214	-2.2 ± 4.6	NE	NE	16	U	EPA:901.1
	Potassium-40	88 ± 49	NE	NE	160	U	EPA:901.1
	Protactinium-234m	460 ± 250	NE	NE	820	U	EPA:901.1
	Radium-226	0.089 ± 0.075	5	30	0.25	U	EPA: 903.1
	Radium-228	0.53 ± 0.17	5	30	0.64	U	EPA: 904.0
	Sodium-22	-1.2 ± 1.6	NE	NE	5.7	U	EPA:901.1
	Thallium-208	4.7 ± 1.5	NE	NE	4.9	U	EPA:901.1
	Thorium-234	57 ± 47	NE	NE	160	U	EPA:901.1
Uranium-234	9.9 ± 0.9	NE	NE	0.12		HASL300:ISOU	
Uranium-235	0.16 ± 0.06	NE	NE	0.17	U	HASL300:ISOU	
Uranium-238	2.1 ± 0.24	NE	NE	0.089		HASL300:ISOU	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

^a = A negative value indicates that the sample count rate was below that of the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

New Mexico Environment Department DOE Oversight Bureau

March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
Greystone-MW2 21-Mar-18	Actinium-228	14 ± 5.5	NE	NE	18	U	EPA:901.1
	Americium-241	-16 ± 8.2	NE	NE	28	U	EPA:901.1
	Beryllium-7	-11 ± 13	NE	NE	44	U	EPA:901.1
	Bismuth-212	38 ± 20	NE	NE	65	U	EPA:901.1
	Bismuth-214	7.3 ± 6.3	NE	NE	21	U	EPA:901.1
	Cesium-134	-2.8 ± 1.4	NE	NE	4.9	U	EPA:901.1
	Cesium-137	-2.6 ± 1.5	NE	NE	5.1	U	EPA:901.1
	Cobalt-60	-2 ± 1.8	NE	NE	6.4	U	EPA:901.1
	Gross alpha	12 ± 1.3	15	NE	1.6		EPA:900.0
	Gross beta	5.1 ± 0.76	4mrem/yr	NE	2		EPA:900.0
	Iodine-131	-0.42 ± 6.9	NE	NE	23	U	EPA:901.1
	Lead-212	6.1 ± 4	NE	NE	13	U	EPA:901.1
	Lead-214	8.4 ± 5.1	NE	NE	17	U	EPA:901.1
	Potassium-40	49 ± 40	NE	NE	130	U	EPA:901.1
	Protactinium-234m	280 ± 250	NE	NE	840	U	EPA:901.1
	Radium-226	0.16 ± 0.083	5	30	0.24	U	EPA: 903.1
	Radium-228	0.041 ± 0.13	5	30	0.61	U	EPA: 904.0
	Sodium-22	1.1 ± 1.8	NE	NE	6	U	EPA:901.1
	Thallium-208	1.5 ± 2.7	NE	NE	9.1	U	EPA:901.1
	Thorium-234	-35 ± 40	NE	NE	130	U	EPA:901.1
Uranium-234	9.7 ± 0.84	NE	NE	0.025		HASL300:ISOU	
Uranium-235	0.16 ± 0.043	NE	NE	0.029		HASL300:ISOU	
Uranium-238	2.2 ± 0.23	NE	NE	0.069		HASL300:ISOU	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

^a = A negative value indicates that the sample count rate was below that of the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

New Mexico Environment Department DOE Oversight Bureau

March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
MRN-2 12-Mar-18	Actinium-228	7.7 ± 5.1	NE	NE	17	U	EPA:901.1
	Americium-241	-3.3 ± 5.7	NE	NE	19	U	EPA:901.1
	Beryllium-7	0.77 ± 6.6	NE	NE	22	U	EPA:901.1
	Bismuth-212	14 ± 5.6	NE	NE	18	U	EPA:901.1
	Bismuth-214	-0.92 ± 4.3	NE	NE	14	U	EPA:901.1
	Cesium-134	-1.7 ± 0.75	NE	NE	2.5	U	EPA:901.1
	Cesium-137	-1 ± 0.66	NE	NE	2.2	U	EPA:901.1
	Cobalt-60	-1.2 ± 0.67	NE	NE	2.3	U	EPA:901.1
	Gross alpha	2.8 ± 0.39	15	NE	0.81		EPA:900.0
	Gross beta	3.3 ± 0.47	4mrem/yr	NE	1.2		EPA:900.0
	Iodine-131	4.1 ± 4.1	NE	NE	14	U	EPA:901.1
	Lead-212	-1.5 ± 2.4	NE	NE	7.9	U	EPA:901.1
	Lead-214	-0.75 ± 3.8	NE	NE	12	U	EPA:901.1
	Potassium-40	44 ± 18	NE	NE	59	U	EPA:901.1
	Protactinium-234m	260 ± 110	NE	NE	340	U	EPA:901.1
	Radium-226	0.11 ± 0.051	5	30	0.12	U	EPA: 903.1
	Radium-228	0.16 ± 0.13	5	30	0.59	U	EPA: 904.0
Sodium-22	0.025 ± 0.63	NE	NE	2.1	U	EPA:901.1	
Thallium-208	0.063 ± 1.6	NE	NE	5.4	U	EPA:901.1	
Thorium-234	5.7 ± 31	NE	NE	100	U	EPA:901.1	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

^a = A negative value indicates that the sample count rate was below that of the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

New Mexico Environment Department DOE Oversight Bureau

March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
MRN-3D 13-Mar-18	Actinium-228	18 ± 11	NE	NE	35	U	EPA:901.1
	Americium-241	77 ± 47	NE	NE	150	U	EPA:901.1
	Beryllium-7	12 ± 11	NE	NE	37	U	EPA:901.1
	Bismuth-212	40 ± 19	NE	NE	60	U	EPA:901.1
	Bismuth-214	8.7 ± 4.6	NE	NE	19	U	EPA:901.1
	Cesium-134	0.73 ± 1.4	NE	NE	4.8	U	EPA:901.1
	Cesium-137	-3 ± 1.2	NE	NE	4.4	U	EPA:901.1
	Cobalt-60	0.39 ± 1.4	NE	NE	4.9	U	EPA:901.1
	Gross alpha	1.8 ± 0.37	15	NE	1		EPA:900.0
	Gross beta	4.3 ± 0.51	4mrem/yr	NE	1.1		EPA:900.0
	Iodine-131	-8.3 ± 3.7	NE	NE	13	U	EPA:901.1
	Lead-212	-1.3 ± 4.3	NE	NE	14	U	EPA:901.1
	Lead-214	3.8 ± 4.6	NE	NE	15	U	EPA:901.1
	Potassium-40	40 ± 38	NE	NE	120	U	EPA:901.1
	Protactinium-234m	83 ± 210	NE	NE	710	U	EPA:901.1
	Radium-226	0.15 ± 0.059	5	30	0.15	U	EPA: 903.1
	Radium-228	0.12 ± 0.15	5	30	0.66	U	EPA: 904.0
Sodium-22	1.9 ± 1.4	NE	NE	4.5	U	EPA:901.1	
Thallium-208	4.9 ± 1.4	NE	NE	4.5		EPA:901.1	
Thorium-234	23 ± 63	NE	NE	210	U	EPA:901.1	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

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March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
NWTA3-MW3D 23-Mar-18	Actinium-228	14 ± 5.9	NE	NE	21	U	EPA:901.1
	Americium-241	1.3 ± 11	NE	NE	36	U	EPA:901.1
	Beryllium-7	-30 ± 28	NE	NE	96	U	EPA:901.1
	Bismuth-212	3.8 ± 21	NE	NE	72	U	EPA:901.1
	Bismuth-214	10 ± 5	NE	NE	16	U	EPA:901.1
	Cesium-134	-5.2 ± 2.1	NE	NE	7.2	U	EPA:901.1
	Cesium-137	-0.51 ± 1.5	NE	NE	5.3	U	EPA:901.1
	Cobalt-60	1 ± 1.7	NE	NE	5.9	U	EPA:901.1
	Gross alpha	3.6 ± 0.46	15	NE	0.91		EPA:900.0
	Gross beta	3.6 ± 0.45	4mrem/yr	NE	1		EPA:900.0
	Iodine-131	2.6 ± 21	NE	NE	70	U	EPA:901.1
	Lead-212	-0.38 ± 4.1	NE	NE	14	U	EPA:901.1
	Lead-214	6.3 ± 4.3	NE	NE	14	U	EPA:901.1
	Potassium-40	73 ± 45	NE	NE	150	U	EPA:901.1
	Protactinium-234m	250 ± 260	NE	NE	860	U	EPA:901.1
	Radium-226	0.14 ± 0.067	5	30	0.19	U	EPA: 903.1
	Radium-228	0.11 ± 0.15	5	30	0.65	U	EPA: 904.0
Sodium-22	2.1 ± 1.8	NE	NE	5.8	U	EPA:901.1	
Thallium-208	3.9 ± 2.7	NE	NE	8.9	U	EPA:901.1	
Thorium-234	15 ± 46	NE	NE	150	U	EPA:901.1	

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

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March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
PL-2 12-Mar-18	Actinium-228	-4.1 ± 12	NE	NE	41	U	EPA:901.1
	Americium-241	10 ± 14	NE	NE	48	U	EPA:901.1
	Beryllium-7	10 ± 13	NE	NE	42	U	EPA:901.1
	Bismuth-212	-0.11 ± 21	NE	NE	70	U	EPA:901.1
	Bismuth-214	3.3 ± 6.7	NE	NE	22	U	EPA:901.1
	Cesium-134	-2.1 ± 1.5	NE	NE	5	U	EPA:901.1
	Cesium-137	1.1 ± 1.5	NE	NE	5.1	U	EPA:901.1
	Cobalt-60	-0.47 ± 1.6	NE	NE	5.5	U	EPA:901.1
	Gross alpha	3.7 ± 0.45	15	NE	0.83		EPA:900.0
	Gross beta	3.4 ± 0.48	4mrem/yr	NE	1.2		EPA:900.0
	Iodine-131	2.2 ± 9.3	NE	NE	31	U	EPA:901.1
	Lead-212	2.5 ± 3.9	NE	NE	13	U	EPA:901.1
	Lead-214	7 ± 2.8	NE	NE	9	U	EPA:901.1
	Potassium-40	-29 ± 48	NE	NE	160	U	EPA:901.1
	Protactinium-234m	390 ± 230	NE	NE	750	U	EPA:901.1
	Radium-226	0.16 ± 0.065	5	30	0.18	U	EPA: 903.1
	Radium-228	0.0048 ± 0.14	5	30	0.66	U	EPA: 904.0
Sodium-22	2.7 ± 1.6	NE	NE	5.3	U	EPA:901.1	
Thallium-208	4.8 ± 1.5	NE	NE	4.7		EPA:901.1	
Thorium-234	44 ± 46	NE	NE	150	U	EPA:901.1	

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

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March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
PL-4 13-Mar-18	Actinium-228	13 ± 8.1	NE	NE	27	U	EPA:901.1
	Americium-241	3 ± 1.4	NE	NE	4.6	U	EPA:901.1
	Beryllium-7	-7.6 ± 8.3	NE	NE	29	U	EPA:901.1
	Bismuth-212	4.5 ± 17	NE	NE	56	U	EPA:901.1
	Bismuth-214	4.6 ± 5.2	NE	NE	17	U	EPA:901.1
	Cesium-134	-1.8 ± 1.1	NE	NE	3.9	U	EPA:901.1
	Cesium-137	-1.5 ± 1.1	NE	NE	3.8	U	EPA:901.1
	Cobalt-60	-0.34 ± 1.3	NE	NE	4.4	U	EPA:901.1
	Gross alpha	3.6 ± 0.49	15	NE	1.1		EPA:900.0
	Gross beta	5 ± 0.57	4mrem/yr	NE	1.2		EPA:900.0
	Iodine-131	-2.2 ± 3.2	NE	NE	11	U	EPA:901.1
	Lead-212	-0.8 ± 3	NE	NE	10	U	EPA:901.1
	Lead-214	-1 ± 4.6	NE	NE	15	U	EPA:901.1
	Potassium-40	-3.4 ± 31	NE	NE	100	U	EPA:901.1
	Protactinium-234m	-18 ± 190	NE	NE	660	U	EPA:901.1
	Radium-226	0.071 ± 0.048	5	30	0.15	U	EPA: 903.1
	Radium-228	0.11 ± 0.15	5	30	0.66	U	EPA: 904.0
Sodium-22	-1.1 ± 1.2	NE	NE	4.2	U	EPA:901.1	
Thallium-208	0.034 ± 2.3	NE	NE	7.7	U	EPA:901.1	
Thorium-234	21 ± 22	NE	NE	73	U	EPA:901.1	

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

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March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
SFR-2S 19-Mar-18	Actinium-228	7.4 ± 4.1	NE	NE	17	U	EPA:901.1
	Americium-241	11 ± 8.4	NE	NE	27	U	EPA:901.1
	Beryllium-7	4.8 ± 9.5	NE	NE	31	U	EPA:901.1
	Bismuth-212	15 ± 7.9	NE	NE	26	U	EPA:901.1
	Bismuth-214	0.24 ± 4.5	NE	NE	15	U	EPA:901.1
	Cesium-134	-0.58 ± 1.1	NE	NE	3.6	U	EPA:901.1
	Cesium-137	-0.4 ± 0.67	NE	NE	2.3	U	EPA:901.1
	Cobalt-60	-1.3 ± 0.69	NE	NE	2.4	U	EPA:901.1
	Gross alpha	19 ± 1.9	15	NE	2.4		EPA:900.0
	Gross beta	9.5 ± 1.2	4mrem/yr	NE	2.6		EPA:900.0
	Iodine-131	0.9 ± 2.6	NE	NE	8.6	U	EPA:901.1
	Lead-212	-0.64 ± 2.4	NE	NE	8	U	EPA:901.1
	Lead-214	-0.79 ± 3.9	NE	NE	13	U	EPA:901.1
	Potassium-40	45 ± 19	NE	NE	62	U	EPA:901.1
	Protactinium-234m	250 ± 110	NE	NE	360	U	EPA:901.1
	Radium-226	0.12 ± 0.081	5	30	0.26	U	EPA: 903.1
	Radium-228	0.54 ± 0.17	5	30	0.67	U	EPA: 904.0
	Sodium-22	1.1 ± 0.64	NE	NE	2.1	U	EPA:901.1
	Thallium-208	1.9 ± 1.7	NE	NE	5.6	U	EPA:901.1
	Thorium-234	20 ± 31	NE	NE	100	U	EPA:901.1
Uranium-234	19 ± 1.6	NE	NE	0.081		HASL300:ISOU	
Uranium-235	0.37 ± 0.071	NE	NE	0.031		HASL300:ISOU	
Uranium-238	5.1 ± 0.47	NE	NE	0.065		HASL300:ISOU	

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

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Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
SFR-2S 19-Mar-18 (Duplicate)	Actinium-228	19 ± 5.9	NE	NE	18		EPA:901.1
	Americium-241	-23 ± 17	NE	NE	58	U	EPA:901.1
	Beryllium-7	30 ± 13	NE	NE	43	U	EPA:901.1
	Bismuth-212	25 ± 21	NE	NE	69	U	EPA:901.1
	Bismuth-214	12 ± 3.3	NE	NE	10		EPA:901.1
	Cesium-134	-4.3 ± 1.6	NE	NE	5.4	U	EPA:901.1
	Cesium-137	-0.5 ± 1.6	NE	NE	5.3	U	EPA:901.1
	Cobalt-60	-0.76 ± 1.9	NE	NE	6.6	U	EPA:901.1
	Gross alpha	20 ± 1.9	15	NE	2.2		EPA:900.0
	Gross beta	12 ± 1.3	4mrem/yr	NE	2.3		EPA:900.0
	Iodine-131	-0.99 ± 5.3	NE	NE	18	U	EPA:901.1
	Lead-212	0.096 ± 4.3	NE	NE	14	U	EPA:901.1
	Lead-214	13 ± 2.9	NE	NE	8.8		EPA:901.1
	Potassium-40	-5.4 ± 44	NE	NE	150	U	EPA:901.1
	Protactinium-234m	340 ± 270	NE	NE	880	U	EPA:901.1
	Radium-226	0.1 ± 0.088	5	30	0.3	U	EPA: 903.1
	Radium-228	0.33 ± 0.15	5	30	0.64	U	EPA: 904.0
	Sodium-22	-2.4 ± 1.8	NE	NE	6.3	U	EPA:901.1
	Thallium-208	5.7 ± 1.6	NE	NE	4.9		EPA:901.1
	Thorium-234	-12 ± 45	NE	NE	150	U	EPA:901.1
Uranium-234	19 ± 1.6	NE	NE	0.082		HASL300:ISOU	
Uranium-235	0.2 ± 0.052	NE	NE	0.082		HASL300:ISOU	
Uranium-238	4.9 ± 0.45	NE	NE	0.061		HASL300:ISOU	

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

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Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)		EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
SFR-4T 20-Mar-18	Actinium-228	14	± 7.3	NE	NE	24	U	EPA:901.1
	Americium-241	-6.2	± 10	NE	NE	34	U	EPA:901.1
	Beryllium-7	17	± 15	NE	NE	51	U	EPA:901.1
	Bismuth-212	11	± 24	NE	NE	81	U	EPA:901.1
	Bismuth-214	5.3	± 7.8	NE	NE	26	U	EPA:901.1
	Cesium-134	-1.5	± 2.5	NE	NE	8.6	U	EPA:901.1
	Cesium-137	-0.16	± 1.8	NE	NE	6.2	U	EPA:901.1
	Cobalt-60	0.54	± 2.5	NE	NE	8.4	U	EPA:901.1
	Gross alpha	-7.7	± 4.2	15	NE	15	U	EPA:900.0
	Gross beta	-9.8	± 6.8	4mrem/yr	NE	23	U	EPA:900.0
	Iodine-131	-14	± 9.7	NE	NE	33	U	EPA:901.1
	Lead-212	4.4	± 2.5	NE	NE	8.1	U	EPA:901.1
	Lead-214	8.4	± 3	NE	NE	9.7	U	EPA:901.1
	Potassium-40	-31	± 58	NE	NE	200	U	EPA:901.1
	Protactinium-234m	550	± 320	NE	NE	1000	U	EPA:901.1
	Radium-226	0.43	± 0.12	5	30	0.18		EPA: 903.1
	Radium-228	0.49	± 0.16	5	30	0.63	U	EPA: 904.0
	Sodium-22	-2.1	± 2.1	NE	NE	7.3	U	EPA:901.1
	Thallium-208	7.8	± 1.8	NE	NE	5.6		EPA:901.1
	Thorium-234	19	± 43	NE	NE	140	U	EPA:901.1
Uranium-234	0.37	± 0.067	NE	NE	0.097		HASL300:ISOU	
Uranium-235	0.0066	± 0.019	NE	NE	0.057	U	HASL300:ISOU	
Uranium-238	0.028	± 0.021	NE	NE	0.078	U	HASL300:ISOU	

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Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

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Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW2 22-Mar-18	Actinium-228	7.3 ± 4.7	NE	NE	15	U	EPA:901.1
	Americium-241	-0.75 ± 1.5	NE	NE	4.9	U	EPA:901.1
	Beryllium-7	-1.1 ± 9.3	NE	NE	32	U	EPA:901.1
	Bismuth-212	19 ± 16	NE	NE	54	U	EPA:901.1
	Bismuth-214	4 ± 4	NE	NE	16	U	EPA:901.1
	Cesium-134	-2.6 ± 1.2	NE	NE	4	U	EPA:901.1
	Cesium-137	-0.57 ± 1.1	NE	NE	3.7	U	EPA:901.1
	Cobalt-60	-0.14 ± 1.3	NE	NE	4.5	U	EPA:901.1
	Gross alpha	4.3 ± 0.49	15	NE	0.83		EPA:900.0
	Gross beta	3.7 ± 0.47	4mrem/yr	NE	1.1		EPA:900.0
	Iodine-131	4.2 ± 5.5	NE	NE	18	U	EPA:901.1
	Lead-212	1.3 ± 3	NE	NE	10	U	EPA:901.1
	Lead-214	-0.74 ± 4.1	NE	NE	14	U	EPA:901.1
	Potassium-40	20 ± 32	NE	NE	110	U	EPA:901.1
	Protactinium-234m	190 ± 200	NE	NE	680	U	EPA:901.1
	Radium-226	0.067 ± 0.074	5	30	0.27	U	EPA: 903.1
	Radium-228	0.58 ± 0.24	5	30	0.99	U	EPA: 904.0
	Sodium-22	-3.1 ± 1.2	NE	NE	4.4	U	EPA:901.1
	Thallium-208	2.4 ± 2.3	NE	NE	7.9	U	EPA:901.1
	Thorium-234	-2.1 ± 21	NE	NE	70	U	EPA:901.1
Uranium-234	3.1 ± 0.3	NE	NE	0.059		HASL300:ISOU	
Uranium-235	0.059 ± 0.026	NE	NE	0.058		HASL300:ISOU	
Uranium-238	0.97 ± 0.12	NE	NE	0.074		HASL300:ISOU	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

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Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW3 9-Mar-18	Actinium-228	0.65 ± 13	NE	NE	45	U	EPA:901.1
	Americium-241	10 ± 9.9	NE	NE	33	U	EPA:901.1
	Beryllium-7	1.9 ± 15	NE	NE	52	U	EPA:901.1
	Bismuth-212	31 ± 24	NE	NE	79	U	EPA:901.1
	Bismuth-214	14 ± 3.8	NE	NE	12		EPA:901.1
	Cesium-134	-4.4 ± 1.8	NE	NE	6.4	U	EPA:901.1
	Cesium-137	1.3 ± 1.8	NE	NE	6.1	U	EPA:901.1
	Cobalt-60	-1.8 ± 2.3	NE	NE	8.1	U	EPA:901.1
	Gross alpha	1.7 ± 0.38	15	NE	1.1		EPA:900.0
	Gross beta	4.6 ± 0.55	4mrem/yr	NE	1.3		EPA:900.0
	Iodine-131	4.2 ± 14	NE	NE	46	U	EPA:901.1
	Lead-212	0.58 ± 4.7	NE	NE	16	U	EPA:901.1
	Lead-214	10 ± 3	NE	NE	9.6		EPA:901.1
	Potassium-40	56 ± 60	NE	NE	200	U	EPA:901.1
	Protactinium-234m	110 ± 300	NE	NE	1000	U	EPA:901.1
	Radium-226	0.051 ± 0.052	5	30	0.18	U	EPA: 903.1
	Radium-228	0.33 ± 0.14	5	30	0.57	U	EPA: 904.0
Sodium-22	0.11 ± 2.1	NE	NE	7.2	U	EPA:901.1	
Thallium-208	5.5 ± 1.8	NE	NE	5.6	U	EPA:901.1	
Thorium-234	29 ± 47	NE	NE	150	U	EPA:901.1	

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Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
SWTA3-MW4 23-Mar-18	Actinium-228	13 ± 5.8	NE	NE	19	U	EPA:901.1
	Americium-241	-5.8 ± 15	NE	NE	49	U	EPA:901.1
	Beryllium-7	-4.9 ± 15	NE	NE	52	U	EPA:901.1
	Bismuth-212	20 ± 22	NE	NE	75	U	EPA:901.1
	Bismuth-214	12 ± 3.1	NE	NE	9.7		EPA:901.1
	Cesium-134	-1.9 ± 1.4	NE	NE	4.9	U	EPA:901.1
	Cesium-137	-1.5 ± 1.5	NE	NE	5.3	U	EPA:901.1
	Cobalt-60	-3.1 ± 1.6	NE	NE	5.7	U	EPA:901.1
	Gross alpha	1.6 ± 0.4	15	NE	1.2		EPA:900.0
	Gross beta	4.1 ± 0.47	4mrem/yr	NE	1		EPA:900.0
	Iodine-131	-24 ± 23	NE	NE	79	U	EPA:901.1
	Lead-212	2.5 ± 4.2	NE	NE	14	U	EPA:901.1
	Lead-214	7.2 ± 3	NE	NE	9.5	U	EPA:901.1
	Potassium-40	54 ± 51	NE	NE	170	U	EPA:901.1
	Protactinium-234m	160 ± 250	NE	NE	850	U	EPA:901.1
	Radium-226	0.22 ± 0.074	5	30	0.18		EPA: 903.1
	Radium-228	0.72 ± 0.19	5	30	0.69		EPA: 904.0
Sodium-22	-0.64 ± 1.6	NE	NE	5.7	U	EPA:901.1	
Thallium-208	5.4 ± 1.6	NE	NE	4.9		EPA:901.1	
Thorium-234	24 ± 20	NE	NE	66	U	EPA:901.1	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

^a = A negative value indicates that the sample count rate was below that of the instrument background; result is below the Minimum Detectable Activity (MDA).

Table-7

Groundwater Quality Results: Gross Alpha, Gross Beta, Gamma Spectroscopy, Radium-226, Radium-228 and Isotopic Uranium

SNL/NM Long-Term Stewardship Consolidated Groundwater Monitoring Program

New Mexico Environment Department DOE Oversight Bureau

March 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	EPA MCL (pCi/L)	NMWQCC MAC (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TRE-1 14-Mar-18	Actinium-228	14 ± 6.4	NE	NE	23	U	EPA:901.1
	Americium-241	27 ± 15	NE	NE	48	U	EPA:901.1
	Beryllium-7	-32 ± 12	NE	NE	42	U	EPA:901.1
	Bismuth-212	19 ± 22	NE	NE	73	U	EPA:901.1
	Bismuth-214	21 ± 5	NE	NE	17		EPA:901.1
	Cesium-134	-1.7 ± 1.4	NE	NE	4.9	U	EPA:901.1
	Cesium-137	1.1 ± 1.5	NE	NE	5.1	U	EPA:901.1
	Cobalt-60	1.3 ± 1.6	NE	NE	5.5	U	EPA:901.1
	Gross alpha	23 ± 2.4	15	NE	3.7		EPA:900.0
	Gross beta	10 ± 1.3	4mrem/yr	NE	3		EPA:900.0
	Iodine-131	-2.6 ± 4.1	NE	NE	14	U	EPA:901.1
	Lead-212	0.95 ± 4.4	NE	NE	14	U	EPA:901.1
	Lead-214	21 ± 3.6	NE	NE	13		EPA:901.1
	Potassium-40	-29 ± 47	NE	NE	160	U	EPA:901.1
	Protactinium-234m	-140 ± 250	NE	NE	870	U	EPA:901.1
	Radium-226	0.12 ± 0.056	5	30	0.16	U	EPA: 903.1
	Radium-228	0.83 ± 0.2	5	30	0.7		EPA: 904.0
	Sodium-22	0.091 ± 1.6	NE	NE	5.4	U	EPA:901.1
	Thallium-208	1.7 ± 3.5	NE	NE	12	U	EPA:901.1
	Thorium-234	48 ± 19	NE	NE	64	U	EPA:901.1
Uranium-234	24 ± 2	NE	NE	0.078		HASL300:ISOU	
Uranium-235	0.36 ± 0.073	NE	NE	0.067		HASL300:ISOU	
Uranium-238	5.8 ± 0.53	NE	NE	0.028		HASL300:ISOU	

U = Result is less than the sample specific Minimum Detectable Activity (MDA).

^a = A negative value indicates that the sample count rate was below that of the instrument background; result is below the Minimum Detectable Activity (MDA).