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December 4, 2018

Steven Black
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Subject: Data Submittal for Groundwater Monitoring at Sandia National Laboratories/New Mexico Technical Area V Groundwater Area of Concern Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2018 Q-4

Mr. Black:

This letter transmits the subject report as final. The report shows groundwater data results from Technical Area V Groundwater Area of Concern collected by the New Mexico Environment Department DOE Oversight Bureau during the fourth quarter of FFY 2018.

The enclosed monitoring results were provided to the U.S Department of Energy in draft form on October 31, 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,

A handwritten signature in blue ink that reads "Chris Armijo".

Chris Armijo
Environmental Scientist
Sandia Oversight Section

- Enclosure:
- (1) Groundwater Monitoring at Sandia National Laboratories/New Mexico Technical Area V Groundwater Area of Concern Conducted by the New Mexico Environment Department DOE Oversight Bureau for FFY 2018 Q-4
 - (2) Table-1 Total Target Analyte List Metals Plus Uranium Results
 - (3) Table-2 Major Anions and Nitrate-Nitrite as Nitrogen Results
 - (4) Table-3 Detected Volatile Organic Compounds Results
 - (5) Table-4 Method Detection Limits for Volatile Organic Compounds
 - (6) Table-5 Gross Alpha, Gross Beta, Gamma Spectroscopy and Tritium Results

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File: SGE42. Groundwater Monitoring. TAVG. FFY 2018 Q-4

DOE Oversight Bureau, New Mexico Environment Department

**Groundwater Monitoring at
Sandia National Laboratories/New Mexico
Technical Area-V Groundwater
Area of Concern**

**Conducted by the
New Mexico Environment Department DOE Oversight Bureau
for FFY 2018 Q-4**

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Final Report

12/4/2018

The purpose of this communication is to transmit groundwater quality data collected by New Mexico Environment Department DOE Oversight Bureau from Technical Area-V Groundwater Area of Concern during the fourth quarter of Federal Fiscal Year 2018.

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 July and August 2018. The Bureau collected groundwater samples from Technical Area-V Groundwater (TAVG) Area of Concern (AOC) monitoring wells LWDS-MW1, TAV-MW2, TAV-MW4, TAV-MW8, TAV-MW11, TAV-MW15 and TAV-MW16. Split samples were collected using standard Sandia National Laboratories/New Mexico (SNL/NM) sampling procedures and equipment. Samples collected from TAV-MW15 and TAV-MW16 wells were analyzed for metals, anions, nitrate-nitrite as nitrogen (N), volatile organic compounds (VOCs) and radionuclides. Samples collected from LWDS-MW1, TAV-MW6, TAV-MW8, TAV-MW10, TAV-MW12, and TAV-MW14 wells were analyzed for nitrate-nitrite and VOCs only. The Bureau submitted samples for analysis to an independent analytical laboratory under contract with the NMED.

Nitrate exceeded the U.S. Environmental Protection Agency (EPA) maximum contaminant level (MCL) or drinking water standard of 10 mg/L at monitoring well LWDS-MW1. Trichloroethene (TCE) also exceeded the EPA MCL of 5 µg/L at monitoring well LWDS-MW1.

Data Assessment

All groundwater samples were collected and analyzed in accordance with U.S. EPA) protocols. Data results are compared to applicable MCLs established by the U.S. EPA National Primary Drinking Water Regulations (40 CFR 141), National Primary Drinking Water Standards, EPA, July 2002.

Results

Analytical results for total (unfiltered) target analyte list (TAL) metals plus uranium are presented in Table-1. All metal concentrations were below established MCLs.

Analytical results for anions (bromide, chloride, fluoride and sulfate) and nitrate-nitrite are summarized in Table-2. All anions were below MCLs. Nitrate exceeded the EPA MCL of 10 milligrams per liter (mg/L) at monitoring well LWDS-MW1 at a concentration of 13 mg/L. All other samples analyzed for nitrate-nitrite were detected below the EPA MCL.

Volatile organic compounds detected at concentrations above the method detection limit (MDL) are listed in Table-3. No VOCs were detected above their associated MCL, except for TCE. TCE was detected above the EPA MCL of 5 micrograms per liter (µg/L) at monitoring well LWDS-MW1 at a concentration of 18 µg/L. Table-4 summarizes the laboratory MDLs for the remaining VOCs analyzed from samples collected at TAVG.

Analytical results for radionuclides are presented in Table-5 and used to screen for potential radiological contamination. Samples were analyzed for gross alpha, gross beta, gamma emitting isotopes and tritium. All radionuclide results were below established EPA MCLs.

Conclusion

The DOE-OB collected split samples from seven (7) TAVG monitoring wells during the fourth quarter of FFY 2018. Samples were analyzed by an independent analytical laboratory. Groundwater samples collected from LWDS-MW1 exceeded both the nitrate and TCE drinking water standards of 10 mg/L and 5 µg/L, respectively.

Both nitrate and TCE have been identified as contaminants of concern at TAVG. Historically, nitrate and TCE have been detected above the EPA drinking water standards in several wells and the Bureau's results for this reporting period are consistent with past results.

The DOE-OB will continue to collect split samples with SNL/NM from TAVG monitoring wells and continue to independently monitor TAVG for contaminants of concern.

Table-1

**Groundwater Quality Monitoring Results: Total Target Analyte List Metals Plus Uranium
 New Mexico Environment Department DOE Oversight Bureau
 Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern
 July/August 2018**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TAV-MW15 25-Jul-18	Aluminum	0.25	NE	0.1	0.01		SW846: 6020
	Antimony	0.00012	0.006	0.001	0.0001	U	SW846: 6020
	Arsenic	0.00039	0.01	0.002	0.0004	U	SW846: 6020
	Barium	0.067	2	0.005	0.0006		SW846: 6020
	Beryllium	0.000054	0.004	0.0005	5E-05	U	SW846: 6020
	Cadmium	0.000083	0.005	0.002	8E-05	U	SW846: 6020
	Calcium	70	NE	1	0.085		SW846: 6020
	Chromium	0.00077	0.1	0.01	0.0005	J	SW846: 6020
	Cobalt	0.00011	NE	0.005	0.0001	U	SW846: 6020
	Copper	0.00032	NE	0.02	0.0003	U	SW846: 6020
	Iron	0.03	NE	0.1	0.0098	J	SW846: 6020
	Lead	0.000079	NE	0.002	8E-05	U	SW846: 6020
	Magnesium	24	NE	0.1	0.016		SW846: 6020
	Manganese	0.0012	NE	0.005	0.0004	J	SW846: 6020
	Mercury	0.00006	0.002	0.0001	6E-05	U	SW846: 7470A
	Nickel	0.00092	NE	0.02	0.0009	U	SW846: 6020
	Potassium	3.9	NE	1	0.039		SW846: 6020
	Selenium	0.0022	0.05	0.01	0.0007	J	SW846: 6020
	Silver	0.000029	NE	0.0005	3E-05	U	SW846: 6020
	Sodium	65	NE	1	0.022		SW846: 6020
Thallium	4.1E-06	0.002	0.0001	4E-06	U	SW846: 6020	
Uranium	0.0069	0.03	0.0001	5E-06		SW846: 6020	
Vanadium	0.002	NE	0.005	0.0001	J	SW846: 6020	
Zinc	0.0014	NE	0.1	0.0014	U	SW846: 6020	

J = the reported value was obtained from a reading that was less than the Quantitation 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 Monitoring Results: Total Target Analyte List Metals Plus Uranium
 New Mexico Environment Department DOE Oversight Bureau
 Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern
 July/August 2018**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TAV-MW16 26-Jul-18	Aluminum	0.01	NE	0.1	0.01	U	SW846: 6020
	Antimony	0.00012	0.006	0.001	0.0001	U	SW846: 6020
	Arsenic	0.00042	0.01	0.002	0.0004	J	SW846: 6020
	Barium	0.064	2	0.005	0.0006		SW846: 6020
	Beryllium	0.000054	0.004	0.0005	5E-05	U	SW846: 6020
	Cadmium	0.000083	0.005	0.002	8E-05	U	SW846: 6020
	Calcium	75	NE	1	0.085		SW846: 6020
	Chromium	0.00046	0.1	0.01	0.0005	U	SW846: 6020
	Cobalt	0.00011	NE	0.005	0.0001	U	SW846: 6020
	Copper	0.00032	NE	0.02	0.0003	U	SW846: 6020
	Iron	0.0098	NE	0.1	0.0098	U	SW846: 6020
	Lead	0.000079	NE	0.002	8E-05	U	SW846: 6020
	Magnesium	26	NE	0.1	0.016		SW846: 6020
	Manganese	0.00036	NE	0.005	0.0004	U	SW846: 6020
	Mercury	0.00006	0.002	0.0001	6E-05	U	SW846: 7470A
	Nickel	0.00092	NE	0.02	0.0009	U	SW846: 6020
	Potassium	4.2	NE	1	0.039		SW846: 6020
	Selenium	0.0023	0.05	0.01	0.0007	J	SW846: 6020
	Silver	0.000029	NE	0.0005	3E-05	U	SW846: 6020
	Sodium	69	NE	1	0.022		SW846: 6020
	Thallium	4.1E-06	0.002	0.0001	4E-06	U	SW846: 6020
Uranium	0.0064	0.03	0.0001	5E-06		SW846: 6020	
Vanadium	0.004	NE	0.005	0.0001	J	SW846: 6020	
Zinc	0.0014	NE	0.1	0.0014	U	SW846: 6020	

J = the reported value was obtained from a reading that was less than the Quantitation 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 Monitoring Results: Total Target Analyte List Metals Plus Uranium
 New Mexico Environment Department DOE Oversight Bureau
 Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern
 July/August 2018**

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
TAV-MW16 26-Jul-18 (Duplicate)	Aluminum	0.011	NE	0.1	0.01	J	SW846: 6020
	Antimony	0.00012	0.006	0.001	0.0001	U	SW846: 6020
	Arsenic	0.00049	0.01	0.002	0.0004	J	SW846: 6020
	Barium	0.065	2	0.005	0.0006		SW846: 6020
	Beryllium	0.000054	0.004	0.0005	5E-05	U	SW846: 6020
	Cadmium	0.000083	0.005	0.002	8E-05	U	SW846: 6020
	Calcium	78	NE	1	0.085		SW846: 6020
	Chromium	0.00046	0.1	0.01	0.0005	U	SW846: 6020
	Cobalt	0.00011	NE	0.005	0.0001	U	SW846: 6020
	Copper	0.00032	NE	0.02	0.0003	U	SW846: 6020
	Iron	0.0098	NE	0.1	0.0098	U	SW846: 6020
	Lead	0.000079	NE	0.002	8E-05	U	SW846: 6020
	Magnesium	26	NE	0.1	0.016		SW846: 6020
	Manganese	0.00042	NE	0.005	0.0004	J	SW846: 6020
	Mercury	0.00006	0.002	0.0001	6E-05	U	SW846: 7470A
	Nickel	0.00092	NE	0.02	0.0009	U	SW846: 6020
	Potassium	4.3	NE	1	0.039		SW846: 6020
	Selenium	0.0022	0.05	0.01	0.0007	J	SW846: 6020
	Silver	0.000029	NE	0.0005	3E-05	U	SW846: 6020
	Sodium	70	NE	1	0.022		SW846: 6020
	Thallium	4.1E-06	0.002	0.0001	4E-06	U	SW846: 6020
Uranium	0.0065	0.03	0.0001	5E-06		SW846: 6020	
Vanadium	0.0041	NE	0.005	0.0001	J	SW846: 6020	
Zinc	0.0014	NE	0.1	0.0014	U	SW846: 6020	

J = the reported value was obtained from a reading that was less than the Quantitation 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-2

Groundwater Quality Monitoring Results: Major Anions and Nitrate-Nitrite as Nitrogen

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern

July/August 2018

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Laboratory Detection Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
LWDS-MW1 6-Aug-18	Nitrate-Nitrite as Nitrogen	13	10	0.1	0.03		EPA: 353.2
TAV-MW2 30-Jul-18	Nitrate-Nitrite as Nitrogen	5.2	10	0.1	0.03		EPA: 353.2
TAV-MW4 1-Aug-18	Nitrate-Nitrite as Nitrogen	5.1	10	0.1	0.03		EPA: 353.2
TAV-MW8 2-Aug-18	Nitrate-Nitrite as Nitrogen	7.5	10	0.1	0.03		EPA: 353.2
TAV-MW11 31-Aug-18	Nitrate-Nitrite as Nitrogen	7.2	10	0.1	0.03		EPA: 353.2
TAV-MW15 25-Jul-18	Bromide	0.06	NE	0.2	0.06	U	EPA: 300.0
	Chloride	81	NE	2	0.6		EPA: 300.0
	Fluoride	0.92	NE	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	2.1	10	0.05	0.015		EPA: 353.2
	Sulfate	58	NE	1	0.3		EPA: 300.0
TAV-MW16 26-Jul-18	Bromide	0.28	NE	0.2	0.06		EPA: 300.0
	Chloride	92	NE	2	0.6		EPA: 300.0
	Fluoride	0.91	NE	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	2.6	10	0.05	0.015		EPA: 353.2
	Sulfate	60	NE	1	0.3		EPA: 300.0
TAV-MW16 26-Jul-18 (Duplicate)	Bromide	0.29	NE	0.2	0.06		EPA: 300.0
	Chloride	92	NE	2	0.6		EPA: 300.0
	Fluoride	0.93	NE	0.1	0.03		EPA: 300.0
	Nitrate-Nitrite as Nitrogen	2.6	10	0.05	0.015		EPA: 353.2
	Sulfate	60	NE	1	0.3		EPA: 300.0

BOLD = Result exceeds EPA Maximum Contaminant Level

NE = Not Established

U = the analyte was analyzed for but not detected

Table-3

Groundwater Quality Monitoring Results: Detected Volatile Organic Compounds

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern

July/August 2018

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	EPA MCL (µg/L)	Laboratory Detection Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
LWDS-MW1 6-Aug-18	Dichloroethene[cis-1,2-]	4.2	70	1	0.3		SW846: 8260B-25
	Trichloroethene	18	5	1	0.5		SW846: 8260B-25
TAV-MW2 30-Jul-18	Trichloroethene	3	5	1	0.5		SW846: 8260B-25
TAV-MW4 1-Aug-18	Chloroform	0.93	NE	1	0.3	J	SW846: 8260B-25
	Dichloroethene[cis-1,2-]	0.39	70	1	0.3	J	SW846: 8260B-25
	Trichloroethene	4.6	5	1	0.5		SW846: 8260B-25
TAV-MW8 2-Aug-18	Dichloroethene[cis-1,2-]	0.72	70	1	0.3	J	SW846: 8260B-25
	Trichloroethene	4.6	5	1	0.5		SW846: 8260B-25
TAV-MW11 31-Aug-18	Dichloroethene[cis-1,2-]	0.57	70	1	0.3	J	SW846: 8260B-25
	Trichloroethene	3	5	1	0.5		SW846: 8260B-25
TAV-MW16 26-Jul-18	Trichloroethene	0.56	5	1	0.5	J	SW846: 8260B-25
TAV-MW16 26-Jul-18 (Duplicate)	Trichloroethene	0.65	5	1	0.5	J	SW846: 8260B-25

BOLD = Result exceeds EPA Maximum Contaminant Level

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

NE = Not Established

Table-4

Groundwater Quality Monitoring Results: Method Detection Limits for Volatile Organic Compounds by Method SW846:8260B

New Mexico Environment Department DOE Oversight Bureau

Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern

July/August 2018

Analyte	MDL (µg/L)
Acetone	3
Benzene	0.3
Bromobenzene	0.3
Bromochloromethane	0.3
Bromodichloromethane	0.3
Bromoform	0.3
Bromomethane	0.33
Butanone[2-]	3
Butylbenzene[n-]	0.3
Butylbenzene[sec-]	0.3
Butylbenzene[tert-]	0.3
Carbon Disulfide	0.3
Carbon Tetrachloride	0.15
Chlorobenzene	0.3
Chlorodibromomethane	0.3
Chloroethane	0.3
Chloroform	0.3
Chlorohexane[1-]	0.3
Chloromethane	0.3
Chlorotoluene[2-]	0.3
Chlorotoluene[4-]	0.3
Dibromo-3-Chloropropane[1,2-]	0.6
Dibromoethane[1,2-]	0.3
Dibromomethane	0.3
Dichlorobenzene[1,2-]	0.3
Dichlorobenzene[1,3-]	0.3
Dichlorobenzene[1,4-]	0.3
Dichlorodifluoromethane	0.3
Dichloroethane[1,1-]	0.3
Dichloroethane[1,2-]	0.15
Dichloroethene[1,1-]	0.3
Dichloroethene[cis-1,2-]	0.3
Dichloroethene[trans-1,2-]	0.3
Dichloropropane[1,2-]	0.3
Dichloropropane[1,3-]	0.15

Analyte	MDL (µg/L)
Dichloropropane[2,2-]	0.3
Dichloropropene[1,1-]	0.3
Dichloropropene[cis-1,3-]	0.3
Dichloropropene[trans-1,3-]	0.3
Ethylbenzene	0.3
Hexachlorobutadiene	0.3
Hexanone[2-]	3
Iodomethane	0.3
Isopropylbenzene	0.3
Isopropyltoluene[4-]	0.3
Methyl tert-Butyl Ether	0.3
Methyl-2-pentanone[4-]	3
Methylene Chloride	0.34
Naphthalene	0.3
Propylbenzene[1-]	0.3
Styrene	0.3
Tetrachloroethane[1,1,1,2-]	0.3
Tetrachloroethane[1,1,2,2-]	0.3
Tetrachloroethene	0.3
Toluene	0.3
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	0.5
Trichlorofluoromethane	0.3
Trichloropropane[1,2,3-]	0.3
Trimethylbenzene[1,2,4-]	0.3
Trimethylbenzene[1,3,5-]	0.3
Vinyl acetate	0.73
Vinyl Chloride	0.15
Xylene[1,2-]	0.3
Xylene[1,3-]+Xylene[1,4-]	0.3

Table-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Spectroscopy and Tritium
New Mexico Environment Department DOE Oversight Bureau
Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern
July/August 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TAV-MW15 25-Jul-18	Actinium-228	13 ± 5.8	19	U	EPA: 901.1
	Americium-241	-5.4 ± 8.1	27	U	EPA: 901.1
	Beryllium-7	11 ± 17	58	U	EPA: 901.1
	Bismuth-212	67 ± 20	64	NQ	EPA: 901.1
	Bismuth-214	0.58 ± 5.8	19	U	EPA: 901.1
	Cesium-134	-4.7 ± 1.5	5.2	U	EPA: 901.1
	Cesium-137	-3.2 ± 1.4	4.9	U	EPA: 901.1
	Cobalt-60	-2.1 ± 1.8	6.4	U	EPA: 901.1
	Gross alpha	8 ± 1.1	2.2	M3	EPA: 900.0
	Gross beta	5.2 ± 0.75	1.9	M3	EPA: 900.0
	Iodine-131	-140 ± 76	260	U	EPA: 901.1
	Lead-212	1.4 ± 4.1	13	U	EPA: 901.1
	Lead-214	0.96 ± 5.6	19	U	EPA: 901.1
	Potassium-40	-9.1 ± 39	130	U	EPA: 901.1
	Protactinium-234m	240 ± 250	830	U	EPA: 901.1
	Sodium-22	-1.2 ± 1.7	5.8	U	EPA: 901.1
	Thallium-208	2.5 ± 2.8	9.3	U	EPA: 901.1
	Thorium-234	-19 ± 41	140	U	EPA: 901.1
Tritium	-26 ± 97	330	U	EPA: 906.0	

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-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Spectroscopy and Tritium
New Mexico Environment Department DOE Oversight Bureau
Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern
July/August 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TAV-MW16 26-Jul-18	Actinium-228	-4.8 ± 11	36	U	EPA: 901.1
	Americium-241	0.33 ± 1.5	4.9	U	EPA: 901.1
	Beryllium-7	5.3 ± 14	46	U	EPA: 901.1
	Bismuth-212	41 ± 18	58	U	EPA: 901.1
	Bismuth-214	-0.014 ± 5	17	U	EPA: 901.1
	Cesium-134	0.38 ± 1.2	3.9	U	EPA: 901.1
	Cesium-137	-0.56 ± 1.2	4.2	U	EPA: 901.1
	Cobalt-60	1.2 ± 1.3	4.3	U	EPA: 901.1
	Gross alpha	7 ± 0.97	2.1	M3	EPA: 900.0
	Gross beta	6.5 ± 0.86	2.1	M3	EPA: 900.0
	Iodine-131	1.2 ± 63	210	U	EPA: 901.1
	Lead-212	-2.5 ± 3.1	10	U	EPA: 901.1
	Lead-214	0.77 ± 2.8	13	U	EPA: 901.1
	Potassium-40	39 ± 31	100	U	EPA: 901.1
	Protactinium-234m	-180 ± 340	1200	U	EPA: 901.1
	Sodium-22	-2.6 ± 1.3	4.8	U	EPA: 901.1
	Thallium-208	2.8 ± 2.2	7.3	U	EPA: 901.1
	Thorium-234	29 ± 17	69	U	EPA: 901.1
Tritium	45 ± 97	320	U	EPA: 906.0	

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-5

Groundwater Quality Monitoring Results: Gross Alpha, Gross Beta, Gamma Spectroscopy and Tritium
 New Mexico Environment Department DOE Oversight Bureau
 Sandia National Laboratories/New Mexico: Technical Area V Groundwater Area of Concern
 July/August 2018

Monitoring Well/ Sample Date	Analyte	Activity ^a (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
TAV-MW16 26-Jul-18 (Duplicate)	Actinium-228	11 ± 5.7	19	U	EPA: 901.1
	Americium-241	-23 ± 24	80	U	EPA: 901.1
	Beryllium-7	-9.5 ± 20	67	U	EPA: 901.1
	Bismuth-212	18 ± 22	72	U	EPA: 901.1
	Bismuth-214	-1.9 ± 7	23	U	EPA: 901.1
	Cesium-134	-0.4 ± 1.5	5	U	EPA: 901.1
	Cesium-137	-2.9 ± 1.5	5.4	U,M	EPA: 901.1
	Cobalt-60	-0.37 ± 1.4	5	U	EPA: 901.1
	Gross alpha	8 ± 0.98	1.8	M3	EPA: 900.0
	Gross beta	6.6 ± 0.78	1.7	M3	EPA: 900.0
	Iodine-131	79 ± 82	270	U	EPA: 901.1
	Lead-212	8 ± 2.3	7.1	NQ	EPA: 901.1
	Lead-214	9.4 ± 3	9.5	U	EPA: 901.1
	Potassium-40	49 ± 48	160	U	EPA: 901.1
	Protactinium-234m	130 ± 240	800	U	EPA: 901.1
	Sodium-22	-0.64 ± 1.6	5.5	U	EPA: 901.1
	Thallium-208	3.8 ± 1.5	4.8	U	EPA: 901.1
	Thorium-234	45 ± 20	65	U	EPA: 901.1
Tritium	-160 ± 94	320	U	EPA: 906.0	