



BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

DOE Oversight Bureau

Post Office Box 5400 MS 1396
Albuquerque, NM 87185-5400
Phone (505) 845-5823 Fax (505) 845-5853
www.nmenv.state.nm.us



RON CURRY
Secretary
SARAH COTTRELL
Deputy Secretary

July 14, 2010

Karen Agogino
POC, DOE/SSO
P.O Box 5400 MS 0184
Albuquerque, New Mexico 87185-5400

**Subject: Groundwater Monitoring at Sandia National Laboratories/New Mexico
Mixed Waste Landfill Conducted by NMED/DOE OB for FFY 2010 Q-2**

Dear Ms. Agogino:

This letter transmits the subject final report.

The monitoring results are provided to DOE as final. If you have any questions, or if you would like copies of the complete data set, please contact Chris Armijo at (505)845-5824 or contact me at (505)845-5933.

Sincerely,

Barry S. Birch
Program Manager
Sandia Oversight Section

BSB:ca

Enclosure: Draft data submittal entitled: "Groundwater Monitoring at Sandia National Laboratories/New Mexico Mixed Waste Landfill Conducted by NMED/DOE OB for FFY 2010 Q-2" with the following enclosures:

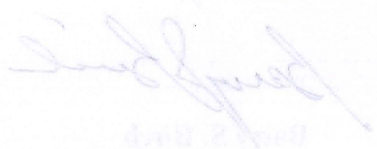
- (1) Table-1 Total TAL (Unfiltered) Metals Results
- (2) Table-2 Dissolved TAL (Filtered) Metals Results
- (3) Table-3 Non-Metal Inorganic Results
- (4) Table-4 Gamma-Emitting Isotopes and Gross Alpha/Beta Results
- (5) Table-5 Detected VOCs and SVOCs Results
- (6) Map-MWL Groundwater Monitoring Wells

July 14, 2010

cc: Gayle Dye, DOE/NNSA
John Gould, DOE/SSO
John Pike, 377 MSG/CEV
John Cochran, SNL
Franz Lauffer, SNL/GWPP
Michael Skelly, SNL Groundwater
Thomas Skibitski, Chief, DOE OB
Barry Birch, Program Manager, DOE OB/SOS
Chris Armijo, Environmental Scientist, DOE OB/SOS

File: SGE42.Groundwater Monitoring.MWL FFY 2010 Q-2

The monitoring results are provided to EAF as final. If you have any questions or if you would like copies of the complete data set, please contact Chris Armijo at (202) 943-5824 or contact me at (202) 943-5813.

Sincerely,

Barry Birch
Program Manager
Sanjour Oversight Section

Enclosure: Data data submitted entitled "Groundwater Monitoring at Sandia National Laboratories/New Mexico Mixed Waste Landfill Conducted by NMED/DOE OB for FFY 2010 Q-2" with the following enclosures:
(1) Table-1 Total TAL (Filtered) Metals Results
(2) Table-1 Dissolved TAL (Filtered) Metals Results
(3) Table-3 Non-Metal Inorganic Results
(4) Table-4 Gaseous-Emitting Isotopes and Gross Alpha/Beta Results
(5) Table-2 Dissolved VOCs and SVOC Results
(6) Map-MWL Groundwater Monitoring Wells



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**Groundwater Monitoring at Sandia National Laboratories/New Mexico Mixed Waste
Landfill Conducted by NMED/DOE OB for FFY 2010 Q-2**

The New Mexico Environment Department (NMED) DOE Oversight Bureau (Bureau) has compiled and assessed groundwater data from samples collected in January 2010. The Bureau obtained groundwater samples from Mixed Waste Landfill (MWL) groundwater monitoring wells MWL-MW7, MWL-MW8, MWL-MW9. Split samples were collected by Sandia staff using standard Sandia sampling procedures and equipment. The Bureau split samples were submitted to an independent analytical laboratory for analyses of metals, non-metal inorganic compounds, radionuclides, and organic compounds. Toluene was detected at concentrations slightly above the method detection limit at MWL-MW8 and MWL-MW9, but the concentrations were below the EPA maximum contaminant level at both monitoring wells.

Data Assessment

Data results are compared to applicable Maximum Contaminant Levels (MCLs) from the EPA National Primary Drinking Water Regulations (40 CFR 141).

Results

Analytical results for total metals are listed in Table-1. Samples were analyzed for total (unfiltered) Target Analyte List (TAL) metals plus uranium. All metal concentrations were below established MCLs.

Analytical results for dissolved metals are listed in Table-2. Samples were analyzed for dissolved (filtered) Target Analyte List (TAL) metals plus uranium. All metal concentrations were below established MCLs.

Analytical results for non-metal inorganic compounds are listed in Table-3. Samples were analyzed for major anions (bromide, chloride, fluoride, and sulfate) and nitrate plus nitrite (NPN). All concentrations were below established MCLs.

Analytical results for radionuclides are listed in Table-4. Samples were analyzed for gamma-emitting isotopes and gross alpha/beta. All gamma-emitting isotopes and gross alpha activities were below established MCLs. Gross alpha ranged from 6.2 pCi/L at MWL-MW7 to 6.8 pCi/L at MWL-MW8.

Analytical results for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) detected above their associated method detection limit (MDL) are listed in Table-5. Only toluene was detected above the MDL at monitoring wells MWL-MW8 (1.1 µg/L original and 0.88 µg/L duplicate) and MWL-MW9 (0.77 µg/L), but the concentrations were below the MCL of 1,000 µg/L.

Conclusions

Data results from Sandia for this sampling event have not been received at this time, so there is no direct comparison of results.

Toluene was detected at concentrations slightly above the method detection limit at MWL-MW8 and MWL-MW9, but the concentrations were three orders of magnitude below the EPA maximum contaminant level at both wells. Sandia is aware of the toluene presence in the two wells, and it is investigating the potential sources.

Response

Questions or comments should be addressed to Barry S. Birch by phone at (505)845-5933, by e-mail at barry.birch@state.nm.us, or to the address in the letterhead.

Enclosure: (1) Table-1 Total TAL (Unfiltered) Metals Results
 (2) Table-2 Dissolved TAL (Filtered) Metals Results
 (3) Table-3 Non-Metal Inorganic Results
 (4) Table-4 Gamma-Emitting Isotopes and Gross Alpha/Beta Results
 (5) Table-5 Detected VOCs and SVOCs Results
 (6) Map-MWL Groundwater Monitoring Wells

Distribution: Gayle Dye, DOE/NNSA
 Karen Agogino, POC, DOE/SSO
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 Michael Skelly, SNL/NM Groundwater
 Thomas Skibitski, Chief, DOE OB
 Barry Birch, Program Manager, DOE OB/SOS
 Chris Armijo, Environmental Scientist, DOE OB/SOS

File: SGE42.Groundwater Monitoring.MWL FFY 2010 Q-2

Table 1- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Total (Unfiltered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW7 5-Jan-10	Aluminum	0.0095	NE	0.1	0.0082	U	SW-846:6010
	Antimony	0.00005	0.006	0.0003	0.000079	B	SW-846:6020
	Arsenic	0.0014	0.01	0.002	0.00016	B	SW-846:6020
	Barium	0.099	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000029	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	58	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.0082	NE	0.05	0.0036	B	SW-846:6010
	Lead	0.00035	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	20	NE	0.5	0.0052		SW-846:6010
	Manganese	0.0002	NE	0.002	0.00013	U	SW-846:6010
	Mercury	0.000029	0.002	0.0001	0.000011	B	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5.1	NE	0.5	0.03		SW-846:6010
	Selenium	0.00027	0.05	0.001	0.00018	U	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	43	NE	0.5	0.006		SW-846:6010
	Thallium	0.000016	0.002	0.0002	0.000018	B	SW-846:6020
	Uranium	0.008	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.0061	NE	0.005	0.0006		SW-846:6010
	Zinc	0.0033	NE	0.005	0.0039	U	SW-846:6010

Refer to the notes at the end of the tables.

Table 1- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Total (Unfiltered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 6-Jan-10	Aluminum	0.086	NE	0.1	0.0082	B	SW-846:6010
	Antimony	0.00007	0.006	0.0003	0.000079	B	SW-846:6020
	Arsenic	0.00056	0.01	0.002	0.00016	B	SW-846:6020
	Barium	0.15	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000017	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	59	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.18	NE	0.05	0.0036		SW-846:6010
	Lead	0.00017	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	20	NE	0.5	0.0052		SW-846:6010
	Manganese	0.23	NE	0.002	0.00013		SW-846:6010
	Mercury	0.000021	0.002	0.0001	0.000011	U	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5.4	NE	0.5	0.03		SW-846:6010
	Selenium	0.00036	0.05	0.001	0.00018	B	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	44	NE	0.5	0.006		SW-846:6010
	Thallium	0.000029	0.002	0.0002	0.000018	B	SW-846:6020
	Uranium	0.0078	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.0011	NE	0.005	0.0006	U	SW-846:6010
	Zinc	0.0033	NE	0.005	0.0039	U	SW-846:6010

Refer to the notes at the end of the tables.

Table 1- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Total (Unfiltered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 (DUP) 6-Jan-10	Aluminum	0.082	NE	0.1	0.0082	B	SW-846:6010
	Antimony	0.000071	0.006	0.0003	0.000079	B	SW-846:6020
	Arsenic	0.00049	0.01	0.002	0.00016	B	SW-846:6020
	Barium	0.15	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000025	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	61	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.18	NE	0.05	0.0036		SW-846:6010
	Lead	0.00017	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	21	NE	0.5	0.0052		SW-846:6010
	Manganese	0.24	NE	0.002	0.00013		SW-846:6010
	Mercury	0.000021	0.002	0.0001	0.000011	U	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5.5	NE	0.5	0.03		SW-846:6010
	Selenium	0.00037	0.05	0.001	0.00018	B	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	44	NE	0.5	0.006		SW-846:6010
	Thallium	0.000028	0.002	0.0002	0.000018	B	SW-846:6020
	Uranium	0.0077	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.0011	NE	0.005	0.0006	U	SW-846:6010
	Zinc	0.0043	NE	0.005	0.0039	B	SW-846:6010

Refer to the notes at the end of the tables.

Table 1- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Total (Unfiltered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW9 7-Jan-10	Aluminum	0.055	NE	0.1	0.0082	B	SW-846:6010
	Antimony	0.000035	0.006	0.0003	0.000079	B	SW-846:6020
	Arsenic	0.0031	0.01	0.002	0.00016		SW-846:6020
	Barium	0.092	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000025	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	58	NE	0.5	0.014		SW-846:6010
	Chromium	0.0023	0.1	0.005	0.00073	B	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.13	NE	0.05	0.0036		SW-846:6010
	Lead	0.00022	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	20	NE	0.5	0.0052		SW-846:6010
	Manganese	0.017	NE	0.002	0.00013		SW-846:6010
	Mercury	0.000021	0.002	0.0001	0.000011	U	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5	NE	0.5	0.03		SW-846:6010
	Selenium	0.00052	0.05	0.001	0.00018	B	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	42	NE	0.5	0.006		SW-846:6010
	Thallium	0.000013	0.002	0.0002	0.000018	U	SW-846:6020
	Uranium	0.0088	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.008	NE	0.005	0.0006		SW-846:6010
	Zinc	0.0033	NE	0.005	0.0039	U	SW-846:6010

Refer to the notes at the end of the tables.

Table 2- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Dissolved (Filtered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW7 5-Jan-10	Aluminum	0.0095	NE	0.1	0.0082	U	SW-846:6010
	Antimony	0.000034	0.006	0.0003	0.000079	U	SW-846:6020
	Arsenic	0.0017	0.01	0.002	0.00016	B	SW-846:6020
	Barium	0.096	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000023	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	58	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.0014	NE	0.05	0.0036	U	SW-846:6010
	Lead	0.00002	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	20	NE	0.5	0.0052		SW-846:6010
	Manganese	0.0002	NE	0.002	0.00013	U	SW-846:6010
	Mercury	0.000028	0.002	0.0001	0.000011	B	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5.1	NE	0.5	0.03		SW-846:6010
	Selenium	0.00027	0.05	0.001	0.00018	U	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	42	NE	0.5	0.006		SW-846:6010
	Thallium	0.000013	0.002	0.0002	0.000018	U	SW-846:6020
	Uranium	0.0076	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.006	NE	0.005	0.0006		SW-846:6010
	Zinc	0.0033	NE	0.005	0.0039	U	SW-846:6010

Refer to the notes at the end of the tables.

Table 2- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Dissolved (Filtered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 6-Jan-10	Aluminum	0.0095	NE	0.1	0.0082	U	SW-846:6010
	Antimony	0.000057	0.006	0.0003	0.000079	B	SW-846:6020
	Arsenic	0.00062	0.01	0.002	0.00016	B	SW-846:6020
	Barium	0.14	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000016	0.005	0.0003	0.00003	U	SW-846:6020
	Calcium	59	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.0014	NE	0.05	0.0036	U	SW-846:6010
	Lead	0.000031	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	20	NE	0.5	0.0052		SW-846:6010
	Manganese	0.22	NE	0.002	0.00013		SW-846:6010
	Mercury	0.000021	0.002	0.0001	0.000011	U	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5.4	NE	0.5	0.03		SW-846:6010
	Selenium	0.00034	0.05	0.001	0.00018	B	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	43	NE	0.5	0.006		SW-846:6010
	Thallium	0.000026	0.002	0.0002	0.000018	B	SW-846:6020
	Uranium	0.0083	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.0011	NE	0.005	0.0006	U	SW-846:6010
	Zinc	0.0033	NE	0.005	0.0039	U	SW-846:6010

Refer to the notes at the end of the tables.

Table 2- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Dissolved (Filtered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 (DUP) 6-Jan-10	Aluminum	0.0095	NE	0.1	0.0082	U	SW-846:6010
	Antimony	0.0001	0.006	0.0003	0.000079	B	SW-846:6020
	Arsenic	0.0011	0.01	0.002	0.00016	B	SW-846:6020
	Barium	0.13	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000024	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	53	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.0014	NE	0.05	0.0036	U	SW-846:6010
	Lead	0.000067	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	18	NE	0.5	0.0052		SW-846:6010
	Manganese	0.2	NE	0.002	0.00013		SW-846:6010
	Mercury	0.000021	0.002	0.0001	0.000011	U	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	4.7	NE	0.5	0.03		SW-846:6010
	Selenium	0.00059	0.05	0.001	0.00018	B	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	39	NE	0.5	0.006		SW-846:6010
	Thallium	0.000022	0.002	0.0002	0.000018	B	SW-846:6020
	Uranium	0.0069	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.0011	NE	0.005	0.0006	U	SW-846:6010
	Zinc	0.0033	NE	0.005	0.0039	U	SW-846:6010

Refer to the notes at the end of the tables.

Table 2- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Dissolved (Filtered) Metals

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW9 7-Jan-10	Aluminum	0.0095	NE	0.1	0.0082	U	SW-846:6010
	Antimony	0.000034	0.006	0.0003	0.000079	U	SW-846:6020
	Arsenic	0.0032	0.01	0.002	0.00016		SW-846:6020
	Barium	0.093	2	0.002	0.00014		SW-846:6010
	Beryllium	0.00016	0.004	0.001	0.0001	U	SW-846:6010
	Cadmium	0.000024	0.005	0.0003	0.00003	B	SW-846:6020
	Calcium	58	NE	0.5	0.014		SW-846:6010
	Chromium	0.00085	0.1	0.005	0.00073	U	SW-846:6010
	Cobalt	0.0011	NE	0.002	0.00068	U	SW-846:6010
	Copper	0.00095	1.3	0.002	0.00055	U	SW-846:6010
	Iron	0.0014	NE	0.05	0.0036	U	SW-846:6010
	Lead	0.000046	0.015	0.0005	0.000024	B	SW-846:6020
	Magnesium	20	NE	0.5	0.0052		SW-846:6010
	Manganese	0.0021	NE	0.002	0.00013		SW-846:6010
	Mercury	0.000021	0.002	0.0001	0.000011	U	SW-846:7470
	Nickel	0.0013	NE	0.005	0.0009	U	SW-846:6010
	Potassium	5	NE	0.5	0.03		SW-846:6010
	Selenium	0.00051	0.05	0.001	0.00018	B	SW-846:6020
	Silver	0.000023	NE	0.0001	0.0000085	U	SW-846:6020
	Sodium	42	NE	0.5	0.006		SW-846:6010
	Thallium	0.000013	0.002	0.0002	0.000018	U	SW-846:6020
	Uranium	0.0088	0.03	0.0001	0.0000041		SW-846:6020
	Vanadium	0.0074	NE	0.005	0.0006		SW-846:6010
	Zinc	0.0048	NE	0.005	0.0039	B	SW-846:6010

Refer to the notes at the end of the tables.

Table 3- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Non-Metal Inorganics

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	EPA MCL (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
MWL-MW7 5-Jan-10	Bromide	0.26	NE	0.2	0.095		EPA:300
	Chloride	45	NE	1	0.46		EPA:300
	Fluoride	0.95	4	0.1	0.022		EPA:300
	Nitrate-Nitrite as N	3.2	10	0.02	0.0072		EPA:353.2
	Sulfate	37	NE	1	0.23		EPA:300
MWL-MW8 6-Jan-10	Bromide	0.26	NE	0.2	0.095		EPA:300
	Chloride	53	NE	1	0.46		EPA:300
	Fluoride	0.92	4	0.1	0.022		EPA:300
	Nitrate-Nitrite as N	1	10	0.01	0.0036		EPA:353.2
	Sulfate	35	NE	1	0.23		EPA:300
MWL-MW8 (DUP) 6-Jan-10	Bromide	0.3	NE	0.2	0.095		EPA:300
	Chloride	53	NE	1	0.46		EPA:300
	Fluoride	0.94	4	0.1	0.022		EPA:300
	Nitrate-Nitrite as N	1	10	0.01	0.0036		EPA:353.2
	Sulfate	36	NE	1	0.23		EPA:300
MWL-MW9 7-Jan-10	Bromide	0.26	NE	0.2	0.095		EPA:300
	Chloride	43	NE	1	0.46		EPA:300
	Fluoride	0.93	4	0.1	0.022		EPA:300
	Nitrate-Nitrite as N	1.9	10	0.01	0.0036		EPA:353.2
	Sulfate	37	NE	1	0.23		EPA:300

Refer to the notes at the end of the tables.

Table 4- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Gamma-Emitting Isotopes and Gross Alpha/Beta

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
MWL-MW7 5-Jan-10	Actinium-228	9.9 ± 11	25	U	713R10
	Aluminum-26	1.8 ± 4	6.7	U	713R10
	Americium-241	-2.7 ± 25	42	U	713R10
	Antimony-124	5.3 ± 2.9	4.5	TI	713R10
	Antimony-125	-3 ± 6.4	12	U	713R10
	Beryllium-7	13 ± 21	34	U	713R10
	Bismuth-212	11 ± 39	66	U	713R10
	Bismuth-214	8 ± 11	22	U,J	713R10
	Cadmium-109	4.2 ± 48	81	U	713R10
	Cerium-139	-0.45 ± 1.7	2.8	U	713R10
	Cerium-144	5 ± 12	19	U	713R10
	Cesium-134	-2.9 ± 2.9	5	U	713R10
	Cesium-137	-1.9 ± 2.9	4.9	U	713R10
	Chromium-51	8.6 ± 23	39	U	713R10
	Cobalt-56	0.8 ± 5.6	9.4	U	713R10
	Cobalt-57	-0.75 ± 1.5	2.6	U	713R10
	Cobalt-58	2.4 ± 2.8	4.6	U	713R10
	Cobalt-60	0.54 ± 3.3	5.6	U	713R10
	Europium-152	-20 ± 18	32	U	713R10
	Europium-154	-1.3 ± 16	28	U	713R10
	Europium-155	-2.5 ± 6.7	11	U	713R10
	Gross Alpha	6.2 ± 1.2	0.67		724R10
	Gross Beta	5.8 ± 1.2	1		724R10
	Iodine-131	-3.9 ± 5.7	9.7	U	713R10
	Iron-59	4.5 ± 6.5	11	U	713R10
	Lead-212	5.2 ± 7.7	13	U	713R10
	Lead-214	6.7 ± 11	18	U,J	713R10
	Manganese-54	-0.12 ± 2.9	4.9	U	713R10
	Niobium-94	1.7 ± 2.8	4.7	U	713R10
	Niobium-95	-3.1 ± 2.8	4.9	U	713R10
	Potassium-40	12 ± 75	120	U	713R10
	Protactinium-234m	520 ± 500	820	U	713R10
	Ruthenium-106	2.9 ± 26	44	U	713R10
	Scandium-46	-0.059 ± 2.9	5	U	713R10
	Silver-110m	0.91 ± 2.6	4.4	U	713R10
	Sodium-22	-1.4 ± 3.5	6	U	713R10
	Strontium-85	3.2 ± 3.6	5.7	U	713R10
	Thallium-208	5 ± 2.9	4.5	TI	713R10
	Thorium-227	-8.5 ± 21	35	U	713R10
	Thorium-234	-1.8 ± 70	120	U	713R10
	Uranium-235	2.6 ± 11	19	U	713R10
	Zinc-65	3.3 ± 9.7	16	U	713R10

Refer to the notes at the end of the tables.

Table 4- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Gamma-Emitting Isotopes and Gross Alpha/Beta

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 6-Jan-10	Actinium-228	18 ± 11	17	TI	713R10
	Aluminum-26	1.1 ± 3.3	5.7	U	713R10
	Americium-241	-3.9 ± 27	45	U	713R10
	Antimony-124	1.4 ± 3.5	5.8	U	713R10
	Antimony-125	3.1 ± 6.9	12	U	713R10
	Beryllium-7	-12 ± 24	42	U	713R10
	Bismuth-212	32 ± 42	69	U	713R10
	Bismuth-214	9.3 ± 14	22	U,J	713R10
	Cadmium-109	-2.7 ± 79	130	U	713R10
	Cerium-139	0.29 ± 2	3.4	U	713R10
	Cerium-144	-2.7 ± 14	24	U	713R10
	Cesium-134	-3.1 ± 3.2	5.6	U	713R10
	Cesium-137	1.9 ± 3.1	5.1	U,M	713R10
	Chromium-51	4.9 ± 26	43	U	713R10
	Cobalt-56	3.3 ± 5.3	8.9	U	713R10
	Cobalt-57	-0.14 ± 2	3.3	U	713R10
	Cobalt-58	-0.53 ± 3	5.2	U	713R10
	Cobalt-60	-2.5 ± 3.1	5.6	U	713R10
	Europium-152	1.1 ± 16	27	U	713R10
	Europium-154	7.8 ± 17	29	U	713R10
	Europium-155	-2 ± 9.2	15	U	713R10
	Gross Alpha	6.6 ± 1.3	0.81		724R10
	Gross Beta	6.6 ± 1.3	1.1		724R10
	Iodine-131	-4.7 ± 5.5	9.5	U	713R10
	Iron-59	-1.3 ± 9.9	17	U	713R10
	Lead-212	-0.53 ± 10	17	U	713R10
	Lead-214	4.9 ± 14	22	U,J	713R10
	Manganese-54	-2.5 ± 3	5.2	U	713R10
	Niobium-94	-0.42 ± 3.1	5.2	U	713R10
	Niobium-95	-0.5 ± 2.9	4.9	U	713R10
	Potassium-40	-50 ± 93	160	U	713R10
	Protactinium-234m	53 ± 530	900	U	713R10
	Ruthenium-106	6.8 ± 28	47	U	713R10
	Scandium-46	1.5 ± 3.1	5.2	U	713R10
	Silver-110m	-1.4 ± 2.9	5	U	713R10
	Sodium-22	-1.4 ± 3.1	5.4	U	713R10
	Strontium-85	0.64 ± 3.7	6.2	U	713R10
	Thallium-208	3.2 ± 2.9	4.7	U	713R10
	Thorium-227	5.9 ± 24	40	U	713R10
	Thorium-234	59 ± 48	77	U	713R10
	Uranium-235	12 ± 14	23	U	713R10
	Zinc-65	-3.9 ± 6.6	12	U	713R10

Refer to the notes at the end of the tables.

Table 4- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Gamma-Emitting Isotopes and Gross Alpha/Beta

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 (DUP) 6-Jan-10	Actinium-228	13 ± 10	16	U	713R10
	Aluminum-26	-0.65 ± 3.5	6	U	713R10
	Americium-241	-1.7 ± 21	36	U	713R10
	Antimony-124	-10 ± 3.2	5.6	U	713R10
	Antimony-125	3.9 ± 6.4	12	U	713R10
	Beryllium-7	15 ± 23	37	U	713R10
	Bismuth-212	31 ± 39	63	U	713R10
	Bismuth-214	13 ± 13	21	U,J	713R10
	Cadmium-109	38 ± 65	110	U	713R10
	Cerium-139	-1.8 ± 2	3.3	U	713R10
	Cerium-144	12 ± 13	21	U	713R10
	Cesium-134	-3.3 ± 2.8	4.9	U	713R10
	Cesium-137	-1.4 ± 2.8	4.8	U	713R10
	Chromium-51	8.5 ± 23	38	U	713R10
	Cobalt-56	1.6 ± 4.8	8	U	713R10
	Cobalt-57	0.68 ± 1.8	2.9	U	713R10
	Cobalt-58	-0.42 ± 2.9	4.9	U	713R10
	Cobalt-60	-3.5 ± 3	5.4	U	713R10
	Europium-152	-6.8 ± 15	26	U	713R10
	Europium-154	-17 ± 15	27	U	713R10
	Europium-155	-4.8 ± 7.9	13	U	713R10
	Gross Alpha	5.9 ± 1.2	0.77		724R10
	Gross Beta	6.9 ± 1.3	1		724R10
	Iodine-131	3.6 ± 3.3	5.3	U	713R10
	Iron-59	2.1 ± 5.7	9.6	U	713R10
	Lead-212	5.5 ± 8.5	14	U	713R10
	Lead-214	13 ± 12	20	U,J	713R10
	Manganese-54	0.0056 ± 2.8	4.8	U	713R10
	Niobium-94	-1.2 ± 2.7	4.7	U	713R10
	Niobium-95	-1.8 ± 2.6	4.6	U	713R10
	Potassium-40	-8.7 ± 69	120	U	713R10
	Protactinium-234m	690 ± 470	730	U	713R10
	Ruthenium-106	-14 ± 25	43	U	713R10
	Scandium-46	-0.51 ± 2.7	4.7	U	713R10
	Silver-110m	0.4 ± 2.6	4.3	U	713R10
	Sodium-22	0.17 ± 2.8	4.8	U	713R10
	Strontium-85	7.3 ± 4	6.1	TI	713R10
	Thallium-208	5.7 ± 2.7	4.1	TI	713R10
	Thorium-227	-12 ± 19	33	U	713R10
	Thorium-234	4.9 ± 97	160	U	713R10
	Uranium-235	13 ± 13	22	U	713R10
	Zinc-65	-2.8 ± 6	10	U	713R10

Refer to the notes at the end of the tables.

Table 4- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Gamma-Emitting Isotopes and Gross Alpha/Beta

Monitoring Well/ Sample Date	Analyte	Activity (pCi/L)	MDA (pCi/L)	Laboratory Qualifier	Analytical Method
MWL-MW9 7-Jan-10	Actinium-228	8.8 ± 11	18	U	713R10
	Aluminum-26	1.1 ± 3.7	6.2	U	713R10
	Americium-241	-2.5 ± 15	26	U	713R10
	Antimony-124	4.3 ± 2.8	4.4	U	713R10
	Antimony-125	1.3 ± 6.4	12	U	713R10
	Beryllium-7	11 ± 21	35	U	713R10
	Bismuth-212	37 ± 40	65	U	713R10
	Bismuth-214	33 ± 13	21	J	713R10
	Cadmium-109	29 ± 52	86	U	713R10
	Cerium-139	0.75 ± 1.9	3.1	U	713R10
	Cerium-144	2.6 ± 13	21	U	713R10
	Cesium-134	-4.5 ± 2.8	4.9	U	713R10
	Cesium-137	-0.47 ± 2.9	4.9	U	713R10
	Chromium-51	0.59 ± 22	37	U	713R10
	Cobalt-56	3 ± 3.1	5	U	713R10
	Cobalt-57	0.035 ± 1.5	2.5	U	713R10
	Cobalt-58	-2.5 ± 2.9	5	U	713R10
	Cobalt-60	0.019 ± 3.1	5.3	U	713R10
	Europium-152	3.9 ± 16	27	U	713R10
	Europium-154	13 ± 16	27	U	713R10
	Europium-155	-5 ± 6.5	11	U	713R10
	Gross Alpha	6.4 ± 1.3	0.98		724R10
	Gross Beta	7.6 ± 1.5	1.3		724R10
	Iodine-131	1.2 ± 4.6	7.7	U	713R10
	Iron-59	1.6 ± 6.1	10	U	713R10
	Lead-212	1.9 ± 7.4	12	U	713R10
	Lead-214	33 ± 10	17	J	713R10
	Manganese-54	0.89 ± 2.8	4.7	U	713R10
	Niobium-94	1.9 ± 3	4.9	U	713R10
	Niobium-95	-0.29 ± 2.8	4.7	U	713R10
	Potassium-40	19 ± 80	130	U	713R10
	Protactinium-234m	410 ± 500	820	U	713R10
	Ruthenium-106	-2.1 ± 25	42	U	713R10
	Scandium-46	-0.7 ± 2.8	4.8	U	713R10
	Silver-110m	-0.17 ± 2.8	4.7	U	713R10
	Sodium-22	1.9 ± 3	5	U	713R10
	Strontium-85	3.1 ± 3.7	5.9	U	713R10
	Thallium-208	5.6 ± 3	4.6	TI	713R10
	Thorium-227	-1.1 ± 19	32	U	713R10
	Thorium-234	84 ± 66	120	U	713R10
	Uranium-235	20 ± 19	30	U	713R10
	Zinc-65	14 ± 13	22	U	713R10

Refer to the notes at the end of the tables.

Table 5- NMED DOE OB FFY 2010 Q-2 MWL Groundwater Quality Results: Detected VOCs and SVOCs

Monitoring Well/ Sample Date	Analyte	Result (µg/L)	EPA MCL (µg/L)	Quantitation Limit (µg/L)	MDL (µg/L)	Laboratory Qualifier	Analytical Method
MWL-MW8 6-Jan-10	Toluene	1.1	1000	1	0.17		SW8260_25
MWL-MW8 (DUP) 6-Jan-10	Toluene	0.88	1000	1	0.17	J	SW8260_25
MWL-MW9 7-Jan-10	Toluene	0.77	1000	1	0.17	J	SW8260_25

Refer to the notes at the end of the tables.

Notes

Result/Activity

mg/L = milligrams per liter

µg/L = micrograms per liter

pCi/L = pico Curies per liter

EPA MCL

Maximum Contaminant Level. Established by the U.S. Environmental Protection Agency National Primary Drinking Water Regulations (40 CFR 141)

NE = Not established

PQL

Practical Quantitation Limit. The lowest concentration that can be reliably measured by a laboratory with defined limits of precision and accuracy.

MDL

Method detection limit. The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

MDA

The minimum detectable activity is defined as the activity at which there is a 95% confidence that an analyte signal will be distinguishable from an analyte free sample.

Inorganic/Organic Lab Qualifier

B = Result is an estimated value above MDL/IDL but less than reporting limit.

E = Reported value is estimated due to interferences

J = Result is an estimated value

U = Analyte was analyzed for but was not detected

Radiochemistry Lab Qualifier

J = Value is an estimated activity.

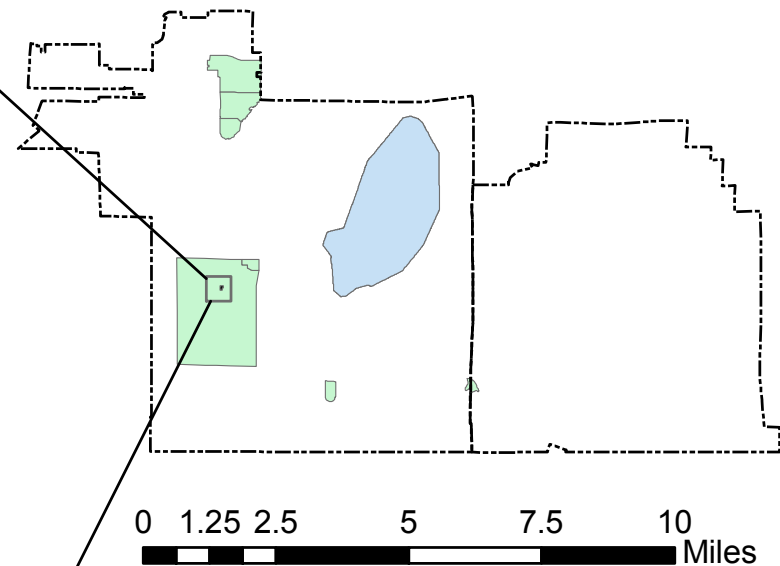
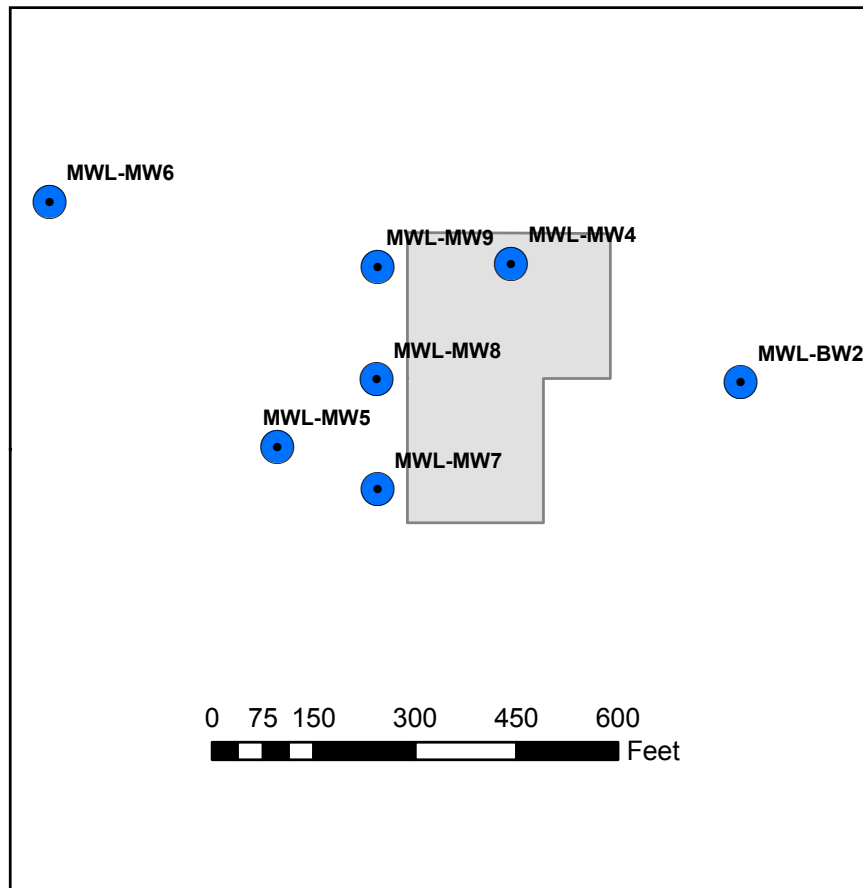
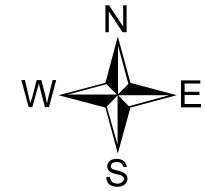
M = The requested MDC not met.

M3 = The requested MDC was not met, but the reported activity is greater than the reported MDC.

TI = Gamma: Nuclide identification is tentative.

U = Result is less than the sample specific MDC.

Mixed Waste Landfill Monitoring Wells



Legend

- Mixed Waste Landfill
- Solar Tower
- Optical Range
- Manzano Base
- KAFB Boundary
- SNL Technical Areas

