

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

DOE Oversight Bureau

406 North Guadalupe Street
Carlsbad, New Mexico 88220
Phone (575) 885-9023 Fax (575) 887-9283
www.nmenv.state.nm.us



DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

JAMES H. DAVIS, Ph.D.
Director
Resource Protection Division

Ambient Air Monitoring at the Waste Isolation Pilot Plant Conducted by NMED/DOE OB for CY 2011 Q-2

The New Mexico Environment Department DOE Oversight Bureau has compiled and assessed ambient air data collected during CY 2011 Q-2. The Bureau collected independent low-volume air samples from three locations at the WIPP site and at the Southeast Control Site located 12 miles upwind from the WIPP. Filters from the air samplers were collected bi-weekly and composited by location. The samples were sent to an independent analytical laboratory for analysis of gross alpha/beta, americium-241, cesium-137, plutonium-238, plutonium-239/240, and strontium-90.

The Bureau performs environmental monitoring and oversight to assure that activities at the WIPP are protective of the public health and environment. The ambient air monitoring program is implemented to independently verify the radiological monitoring results obtained by WIPP personnel, and to confirm that the operation of the WIPP is not increasing levels of radionuclides present in the ambient air as determined from preoperational studies.

Measurements for Am-241, Pu-238/239, Pu-240 and Sr-90 were reported with a "U" flag, meaning the target analyte was not detected above the Minimum Detectable Concentration (MDC). Cs-137 was reported at low-levels at Far Field and the Southeast Control site. Most likely, the Cs-137 was a carry-over from the higher levels reported at all ambient air sampling sites during the previous quarter which was attributed to the Fukushima disaster in Japan.

Questions and/or comments may be addressed to Julia Marple by phone at (575) 887-6851, or by e-mail at Julia.marple@state.nm.us

Enclosures: 1. Ambient Air Sampling Results CY 2011 Q-2
2. Map of NMED's Ambient Air Sampling Locations

Distribution: George Basabilvaso, DOE/CBFO
Dan Ferguson, DOE/CBFO
Thomas Skibitski, Chief, DOE OB
Julia Marple, Environmental Scientist, DOE OB/WOS

Ambient Air Sampling Results CY 2011 Q-2

<i>LVAS 1 WIPP Salt Shaft</i>							
Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	91	12	3		399000	52600	13100
Gross beta	176	18	2		771000	78900	8760
Am-241	0.038	0.087	0.16	U	166	381	701
Cs-137	1.2	1.6	2.7	U	5260	7010	11800
Pu-238	0.03	0.11	0.21	U	131	482	920
Pu-239/240	-0.005	0.052	0.15	U	-22	228	670
Sr-90	0.06	0.86	1.5	U	263	3770	6570
Total Air Volume (m³)					8445		

<i>LVAS 2 Far Field</i>							
Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	112	14	2		482000	60300	8610
Gross beta	195	20	2		840000	86100	8610
Am 241	0.041	0.069	0.12	U	177	297	517
Cs-137	2.8	2.0	2.1		12100	8610	9050
Pu-238	0.10	0.16	0.28	U	431	689	1210
Pu-239/240	-0.042	0.066	0.21	U	-181	284	905
Sr-90	-0.17	0.86	1.6	U	-732	3700	6890
Total Air Volume (m³)					8590		

<i>LVAS 3 Met Tower</i>							
Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	100	13	2		425000	55200	8490
Gross beta	180	18	2		764000	76400	8490
Am-241	0.07	0.10	0.16	U	297	425	679
Cs-137	1	1.5	2.5	U	4250	6370	10600
Pu-238	0.0	0.25	0.62	U	0	1060	2630
Pu-239/240	-0.059	0.068	0.46	U	-250	289	1950
Sr-90	-0.23	0.85	1.6	U	-976	3610	6790
Total Air Volume (m³)					8716		

LVAS 7 Met Tower Duplicate

Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	96	12	2		401000	50100	8360
Gross beta	163	17	2		681000	71000	8360
Am-241	0.082	0.098	0.15	U	343	409	627
Cs-137	1.0	1.5	2.6	U	4180	6270	10900
Pu-238	0.1	0.30	0.63	U	418	1250	2630
Pu-239/240	0.1	0.20	0.27	U	418	836	1130
Sr-90	0.66	0.90	1.5	U	2760	3760	6270
Total Air Volume (m³)					8856		

LVAS 9 Southeast Control

Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	94	12	2		390655	49871	8312
Gross beta	143	15	2		594294	62339	8312
Am-241	-0.036	0.036	0.17	U	-150	150	707
Cs-137	2.4	1.2	1.3		9974	4987	5403
Pu-238	-0.089	0.089	0.57	U	-370	370	2369
Pu-239/240	0.04	0.19	0.47	U	166	790	1953
Sr-90	-0.37	0.75	1.4	U	-1538	3117	5818
Total Air Volume (m³)					8903		

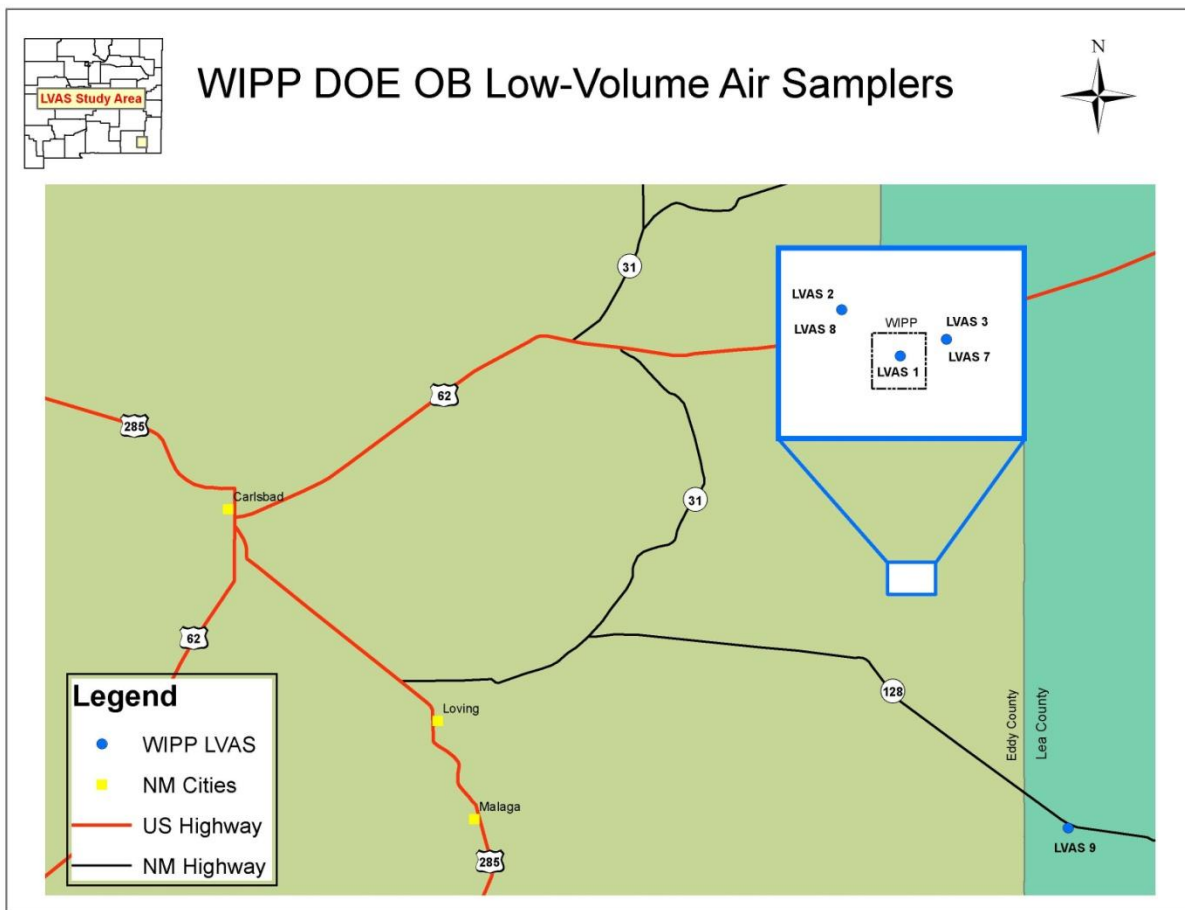
Abbreviations

TPU – Total Propagated Uncertainty

MDC – Minimum Detectable Concentration

Qualifiers/Flags

U – Result is less than the sample MDC.



Map of NMED's Ambient Air Sampling Locations

Note: Filters from LVAS 8 were archived for future use, if needed. They were not analyzed.