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

Vegetation Sampling near the Waste Isolation Pilot Plant Conducted by NMED/DOE OB for CY 2012

The New Mexico Environment Department (NMED) DOE Oversight Bureau has compiled and assessed laboratory data for vegetation samples collected near the Waste Isolation Pilot Plant (WIPP) during CY 2012. Bureau staff collected split vegetation samples from four locations surrounding the WIPP site. The samples were submitted to an independent analytical laboratory for analysis of specific radionuclides, including: americium-241, cesium-137, plutonium-238, plutonium-239/240, uranium-234, uranium-235, and uranium-238.

The locations from which vegetation was collected include Far Field, Noya Tank, Poker Tank, and WIPP North, with a field duplicate collected from the WIPP North site. Strontium-90 was detected above the sample Minimum Detectable Concentration (MDC) in vegetation collected at the Far Field site. A laboratory duplicate of this sample also showed strontium-90 detected above the sample MDC.

The field duplicate collected at WIPP North (WIPP North 2 of 2) also showed a detection of Sr-90 above the sample MDC, while there was no corresponding detection in the other WIPP North sample (WIPP North 1 of 2).

Strontium-90 was not detected in vegetation at any of the Oversight Bureau's sampling sites during previous sampling events.

There were no detections of any of the other listed analytes above the sample MDC.

Response
Questions and or comments may be addressed to Thomas Kesterson by phone at (575)-885-9023 or by e-mail at thomasl.kesterson@state.nm.us.

Enclosure: Table 1 – Laboratory Results for Selected Analytes Found in Vegetation near the WIPP, 2012.

Distribution: George Basabilvazo, DOE/CBFO
Thomas Skibitski, Chief, DOE OB

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Table 1 – Laboratory Results for Selected Analytes Found in Vegetation near the WIPP, 2012.

Far Field					***Data Summaries***		
Analyte	Result	2s TPU (±)	Sample MDC	Lab Flag	Result	2s TPU (±)	Sample MDC
	pCi/g				Bq/g		
Sr-90	1.53E-01	7.5E-02	1.12E-01	+	5.66E-03	2.78E-03	4.14E-03
Sr-90 (Lab Duplicate)	1.48E-01	7.5E-02	1.11E-01	+	5.48E-03	2.78E-03	4.11E-03
Pu-239/240	-1.26E-03	2.5E-02	5.24E-02	U	-4.66E-05	9.25E-04	1.94E-03
Pu-238	0.00E+00	2.5E-02	5.24E-02	U	0.00E+00	9.25E-04	1.94E-03
Am-241	0.00E+00	1.6E-02	3.26E-02	U	0.00E+00	5.92E-04	1.21E-03
Cs-137	8.29E-03	4.0E-02	7.25E-02	U	3.07E-04	1.48E-03	2.68E-03
U-234	3.42E-02	5.0E-02	6.35E-02	U	1.27E-03	1.85E-03	2.35E-03
U-235	1.74E-02	3.5E-02	6.35E-02	U	6.44E-04	1.30E-03	2.35E-03
U-238	3.42E-02	5.0E-02	6.35E-02	U	1.27E-03	1.85E-03	2.35E-03

Noya					***Data Summaries***		
Analyte	Result	2s TPU (±)	Sample MDC	Lab Flag	Result	2s TPU (±)	Sample MDC
	pCi/g				Bq/g		
Sr-90	8.50E-02	1.2E-01	2.59E-01	U	3.15E-03	4.44E-03	9.58E-03
Pu-239/240	8.38E-03	1.9E-02	3.89E-02	U	3.10E-04	7.03E-04	1.44E-03
Pu-238	-9.32E-04	1.9E-02	3.90E-02	U	-3.45E-05	7.03E-04	1.44E-03
Am-241	7.45E-03	1.5E-02	3.12E-02	U	2.76E-04	5.55E-04	1.15E-03
Cs-137	-1.90E-02	4.8E-02	8.17E-02	U	-7.03E-04	1.78E-03	3.02E-03
U-234	0.00E+00	9.3E-02	1.69E-01	U	0.00E+00	3.44E-03	6.25E-03
U-235	-3.72E-03	9.3E-02	1.87E-01	U	-1.38E-04	3.44E-03	6.92E-03
U-238	-3.72E-03	9.3E-02	1.87E-01	U	-1.38E-04	3.44E-03	6.92E-03

Poker					***Data Summaries***		
Analyte	Result	2s TPU (±)	Sample MDC	Lab Flag	Result	2s TPU (±)	Sample MDC
	pCi/g				Bq/g		
Sr-90	9.48E-02	6.5E-02	1.16E-01	U	3.51E-03	2.41E-03	4.29E-03
Pu-239/240	-1.33E-03	2.7E-02	5.54E-02	U	-4.92E-05	9.99E-04	2.05E-03
Pu-238	-1.33E-03	2.7E-02	5.54E-02	U	-4.92E-05	9.99E-04	2.05E-03
Am-241	8.35E-03	1.7E-02	3.49E-02	U	3.09E-04	6.29E-04	1.29E-03
Cs-137	2.68E-02	3.7E-02	7.06E-02	U	9.92E-04	1.37E-03	2.61E-03
U-234	4.31E-02	6.4E-02	9.04E-02	U	1.59E-03	2.37E-03	3.34E-03
U-235	2.25E-02	4.5E-02	8.18E-02	U	8.33E-04	1.67E-03	3.03E-03
U-238	-8.99E-04	4.5E-02	8.18E-02	U	-3.33E-05	1.67E-03	3.03E-03

U indicates the result is less than the sample MDC
+ indicates the result is greater than the sample MDC

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Table 1 – Laboratory Results for Selected Analytes Found in Vegetation near the WIPP, 2012.

WIPP North 1 of 2					***Data Summaries***		
Analyte	Result	2s TPU (±)	Sample MDC	Lab Flag	Result	2s TPU (±)	Sample MDC
	pCi/g				Bq/g		
Sr-90	1.07E-01	1.0E-01	2.04E-01	U	3.96E-03	3.74E-03	7.55E-03
Pu-239/240	0.00E+00	2.1E-02	4.41E-02	U	0.00E+00	7.77E-04	1.63E-03
Pu-238	-1.06E-03	2.1E-02	4.41E-02	U	-3.92E-05	7.77E-04	1.63E-03
Am-241	-7.97E-04	1.6E-02	3.33E-02	U	-2.95E-05	5.92E-04	1.23E-03
Cs-137	1.67E-02	3.8E-02	7.19E-02	U	6.18E-04	1.41E-03	2.66E-03
U-234	7.32E-02	8.9E-02	1.10E-01	U	2.71E-03	3.29E-03	4.07E-03
U-235	2.54E-02	5.1E-02	9.25E-02	U	9.40E-04	1.89E-03	3.42E-03
U-238	-1.02E-03	5.1E-02	9.25E-02	U	-3.77E-05	1.89E-03	3.42E-03

WIPP North 2 of 2					***Data Summaries***		
Analyte	Result	2s TPU (±)	Sample MDC	Lab Flag	Result	2s TPU (±)	Sample MDC
	pCi/g				Bq/g		
Sr-90	1.86E-01	8.4E-02	1.15E-01	+	6.88E-03	3.11E-03	4.26E-03
Pu-239/240	-1.51E-03	3.0E-02	6.29E-02	U	-5.59E-05	1.11E-03	2.33E-03
Pu-238	0.00E+00	3.0E-02	6.29E-02	U	0.00E+00	1.11E-03	2.33E-03
Am-241	0.00E+00	1.6E-02	3.39E-02	U	0.00E+00	5.92E-04	1.25E-03
Cs-137	4.82E-02	3.9E-02	7.72E-02	U	1.78E-03	1.44E-03	2.86E-03
U-234	-1.07E-03	2.7E-02	5.36E-02	U	-3.96E-05	9.99E-04	1.98E-03
U-235	-5.33E-04	2.7E-02	4.84E-02	U	-1.97E-05	9.99E-04	1.79E-03
U-238	1.22E-02	2.7E-02	5.36E-02	U	4.51E-04	9.99E-04	1.98E-03

U indicates the result is less than the sample MDC
+ indicates the result is greater than the sample MDC