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**Ambient Air Monitoring at the Waste Isolation Pilot Plant Conducted by
NMED/DOE OB for CY 2009 Q-4**

The New Mexico Environment Department (NMED) DOE Oversight Bureau (OB) has compiled and assessed ambient air data collected during calendar year 2009 fourth quarter. The accompanying data report includes results from four low-volume air stations (LVAS) around the WIPP and one at the Oversight Bureau Office in Carlsbad. Air filters from these stations are collected bi-weekly, composited quarterly, and sent to an independent analytical laboratory for analysis of americium-241, cesium-137, plutonium-238, plutonium-239/240, and strontium-90. All measured values are below both the requested detection limits and the minimum detectable concentrations.

Questions and or comments may be addressed to Julia Marple by phone at (575) 887-6851, by e-mail at Julia.Marple@state.nm.us or to the address in the above letterhead.

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Fourth Calendar Quarter 2009 Ambient Air Results

Table 1

<i>LVAS 1 WIPP Salt Shaft</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	0	0.027	0.020	0.1	U	0	149
Cs-137	-0.20	2.3	4.0	5	U	-1101	12666
Pu-238	0	0.023	0.017	0.1	U	0	127
Pu-239/240	0.011	0.023	0.033	0.1	U	61	127
Sr-90	0.26	0.32	0.68	1	U	1432	1762
Total Air Volume (m³) 6719							

Table 2

<i>LVAS 2 Far Field</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am 241	0.014	0.031	0.045	0.1	U	64	142
Cs-137	1.5	2.8	4.6	5	U	6861	12808
Pu-238	0	0.020	0.015	0.1	U	0	91
Pu-239/240	0.0023	0.020	0.036	0.1	U	11	91
Sr-90	0.24	0.29	0.60	1	U	1098	1326
Total Air Volume (m³) 8089							

Table 3

<i>LVAS 3 Met Tower</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	0.017	0.023	0.033	0.1	U	81	109
Cs-137	-0.32	2.7	4.7	5	U	-1519	12813
Pu-238	0	0.021	0.015	0.1	U	0	100
Pu-239/240	0.0057	0.021	0.015	0.1	U	27	100
Sr-90	0.36	0.29	0.59	1	U	1708	1376
Total Air Volume (m³) 7797							

Fourth Calendar Quarter 2009 Ambient Air Results

Table 4

<i>LVAS 5 Carlsbad</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	-0.0039	0.023	0.041	0.1	U	-31	186
Cs-137	-0.16	3.0	5.1	5	U,M	-1291	24209
Pu-238	0.0040	0.021	0.030	0.1	U	32	169
Pu-239/240	-0.0012	0.021	0.045	0.1	U	-10	169
Sr-90	0.36	0.25	0.48	1	U	2905	2017
Total Air Volume (m³) 4585							

Table 5

<i>LVAS 7 Met Tower Duplicate</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	0	0.023	0.017	0.1	U	0	116
Cs-137	-1.7	2.8	4.8	5	U	-8582	14136
Pu-238	-0.0018	0.022	0.032	0.1	U	-9	111
Pu-239/240	0.0042	0.022	0.032	0.1	U	21	111
Sr-90	0.58	0.38	0.73	1	U	2928	1918
Total Air Volume (m³) 7329							

Abbreviations

TPU – Total Propagated Uncertainty

MDC – Minimum Detectable Concentration

Qualifiers/Flags

U – Result is less than the sample specific MDC.

M – The requested MDC was not met.

Comparison Study of Reported Values of Radioparticulates in Ambient Air around the WIPP

The following are graphs of the average activity values per analyte as listed in selected NMED, WIPP, Carlsbad Environmental Monitoring and Research Center (CEMRC) and Environmental Evaluation Group (EEG) reports. The results vary by the sampling and analysis procedures and the data reporting differences of the various agencies and their labs. The purpose of these graphs is *only* to show that: 1) The different agencies performing environmental monitoring around the WIPP site show comparable results for radioparticulates in air, and 2) current reported levels of these selected radionuclides have not increased from WIPP preoperational levels. Each of these reported values is essentially a “non-detect,” falling within its uncertainty window.

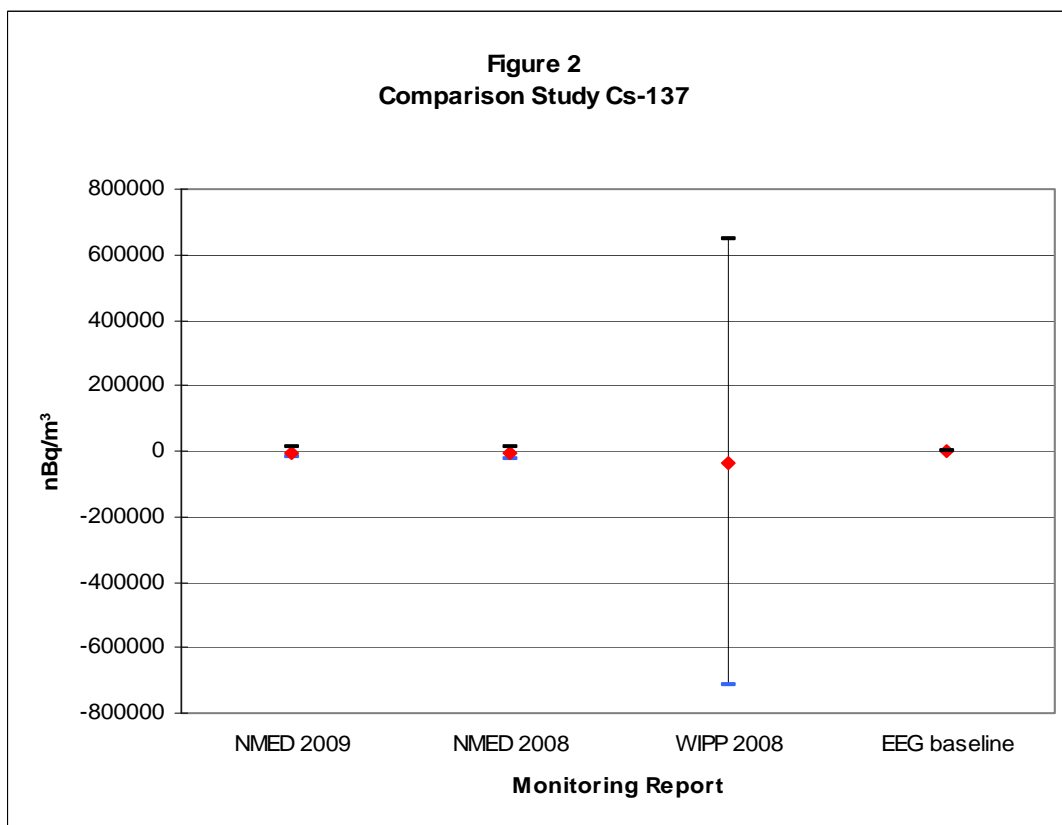
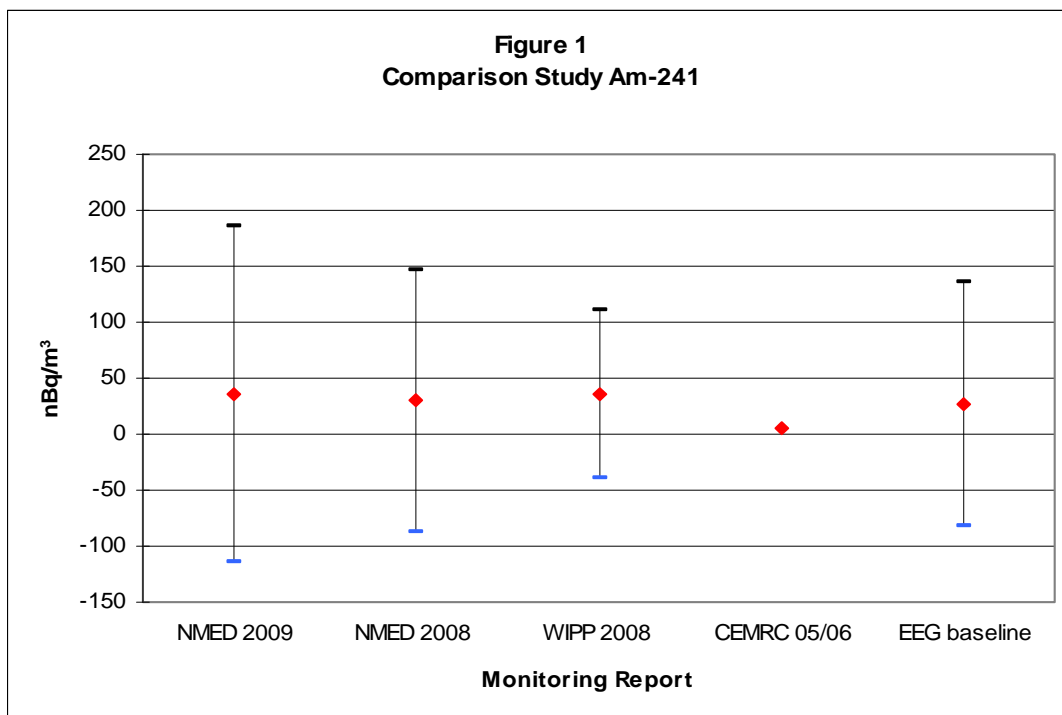
NMED 2008 and 2009 - Average results as reported in “Ambient Air Monitoring at the Waste Isolation Pilot Plant Conducted by NMED/DOE OB” quarterly reports for the four low-volume sampling stations at or directly surrounding the WIPP site.

WIPP 2008 - Average concentrations for airborne particulates as reported in the WIPP Annual Site Environmental Report for 2008.

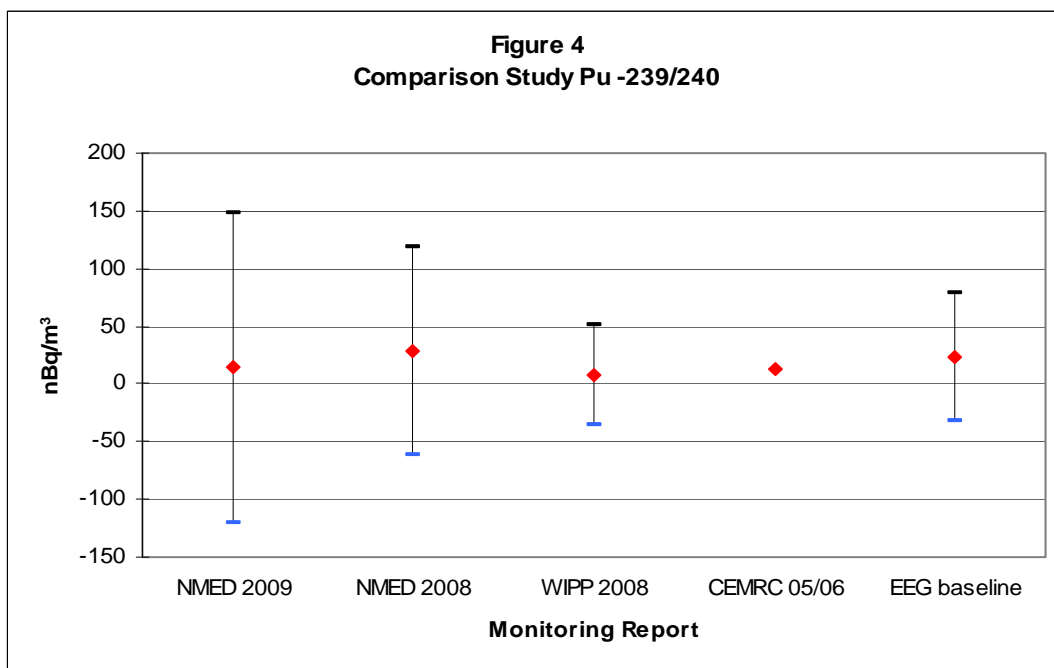
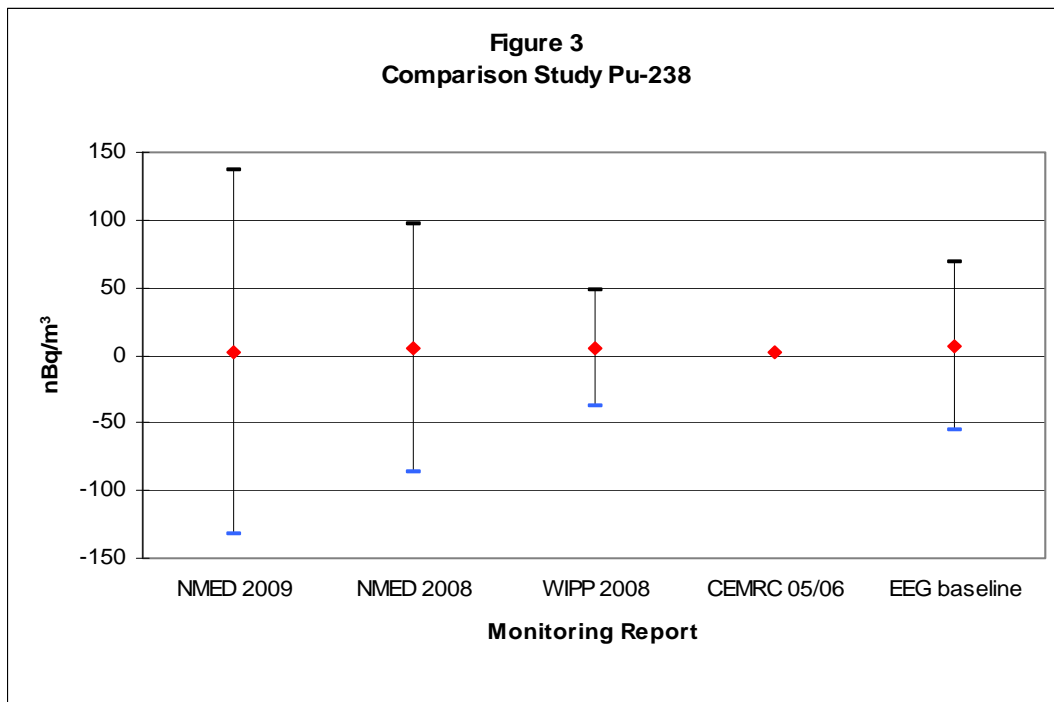
CEMRC 05/06 - Averages of activity concentrations listed in “Table 1-1: Summary Statistics for Aerosol Mass Loading and Actinide Activities in High Volume Aerosol Samples” Carlsbad Environmental Monitoring & Research Center 2005/2006 Report. Note that CEMRC uses high-volume air samplers and did not report values for cs-137, sr-90, or 2s TPU.

EEG baseline – Ambient air results listed in the “Mean EEG Preoperational Baseline” chart in EEG Operational Radiation Surveillance of the WIPP Project During 2002.

Comparison Graphs of Reported Values of Radioparticulates in Ambient Air by Analyte



Comparison Graphs of Reported Values of Radioparticulates in Ambient Air by Analyte



Comparison Graphs of Reported Values of Radioparticulates in Ambient Air by Analyte

