ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

March 18, 2009

Bruce Watson, CHP
U.S. Nuclear Regulatory Commission
Two White Flint North
11545 Rockville Pike
Mail Stop: T-8F37
Rockville, MD 20852-2738

SUBJECT: LETTER REPORT COMPARING ANALYTICAL DATA FOR THE HEMATITE DECOMMISSIONING PROJECT, FESTUS, MISSOURI (DOCKET NO. 070-036, RFTA NO. 08-004) DCN: 1768-LR-02-0

Dear Mr. Watson:

Enclosed are the comparative results for the six field split soil samples collected January 7, 2009 from the Hematite Decommissioning Project in Festus, Missouri. The data presented are the reported results from the Oak Ridge Institute for Science and Education (ORISE) and Test America isotopic uranium and technetium-99 (Tc-99) analyses. The Test America St. Louis results are in units of pCi/g dry weight. The ORISE results for Tc-99 are in pCi/g wet weight and pCi/g dry weight. The isotopic uranium results are reported as pCi/g dry weight. Four of the six sample isotopic uranium results agreed within the statistical uncertainties. ORISE believes the discrepancies for the remaining two samples are most likely due to sample inhomogeneity. For Tc-99, the ORISE wet weight result and the Test America dry weight result are in general agreement. However, when comparing dry weight to dry weight concentrations, only one sample showed statistical agreement.

All ORISE quality control samples met the required limits and are available upon request. If you have any questions, please direct them to me at 865.241.3242 or Wade Ivey at 865.576.9184.

Sincerely,

Dale Condra

Dale Condra
Manager, Laboratory
Independent Environmental
Assessment and Verification

RDC:ar

Enclosure

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TABLE 1 COMPARISON OF DATA FROM ORISE AND TEST AMERICA FOR ISOTOPIC URANIUM IN SOIL BY ALPHA SPECTROSCOPY WESTINGHOUSE DECOMMISSIONING PROJECT FESTUS, MISSOURI					
Sample ID/Location	Sample Grid Coordinates	Railroad Spur Results	Radionuclide Concentration in Soil Samples (pCi/g) Dry Weight		
			U-234[a]	U-235	U-238
S027	864650N, 827314E	ORISE	1,182 ± 61[a]	41.7 ± 8.8	134 ± 15
		Test America	1,160 ± 130	67 ± 25	129 ± 32
S028	864668N, 827356E	ORISE	539 ± 27	24.8 ± 4.4	70.8 ± 7.1
		Test America	465 ± 62	52 ± 19	81 ± 21
S029	864642N, 827333E	ORISE	822 ± 42	34.3 ± 5.8	94.5 ± 9.2
		Test America	763 ± 99	51 ± 23	102 ± 29
S030	864636N, 827335E	ORISE	1,648 ± 72	56.2 ± 7.2	136 ± 11
		Test America	621 ± 71	57 ± 17	197 ± 32
S031	864621N, 827325E	ORISE	1,325 ± 59	58.1 ± 7.3	143 ± 11
		Test America	980 ± 120	70 ± 28	113 ± 33
S032	864624N, 827329E	ORISE	15,700 ± 910	610 ± 110	1,420 ± 160
		Test America	18,000 ± 1,600	950 ± 170	1,540 ± 220

[a]Uncertainties are at the 95% confidence level based on total propagated uncertainties for ORISE and 2 sigma counting uncertainties for Test America.

TABLE 2 COMPARISON OF DATA FROM ORISE AND TEST AMERICA FOR TECHNETIUM-99 IN SOIL BY LIQUID SCINTILLATION WESTINGHOUSE DECOMMISSIONING PROJECT FESTUS, MISSOURI					
Sample ID/Location	Sample Grid Coordinates	Railroad Spur Results	Radionuclide Concentration in Soil Samples (pCi/g)		% Moisture
			Tc-99[a] Wet Weight	Tc-99[b] Dry Weight	
S027	864650N, 827314E	ORISE	27.4 ± 3.2[b]	86.7 ± 6.5	12.1
		Test America	NA	34.4 ± 3.1	18.6
S028	864668N, 827356E	ORISE	76.4 ± 8.8	153 ± 12	16.6
		Test America	NA	70.6 ± 6.1	18.0
S029	864642N, 827333E	ORISE	44.1 ± 5.1	82.5 ± 6.0	18.7
		Test America	NA	40.9 ± 3.6	16.7
S030	864636N, 827335E	ORISE	49.3 ± 5.7	65.0 ± 5.0	19.2
		Test America	NA	46.6 ± 4.1	22.6
S031	864621N, 827325E	ORISE	47.9 ± 5.6	89.7 ± 7.0	19.6
		Test America	NA	41.0 ± 3.7	15.5
S032	864624N, 827329E	ORISE	174 ± 20	217[c] ± 26	17.0
		Test America	NA	245 ± 21	19.6

[a] Test America did not report pCi/g wet weight for Tc-99.

[b]Uncertainties are at the 95% confidence level based on total propagated uncertainties for ORISE and 2 sigma counting uncertainties for Test America.

[c]Data is qualified due to high chemical yield.