

September 2, 2011

Mr. Gene Bonano
 U.S. Nuclear Regulatory Commission
 Region III
 2443 Warrenville Road
 Lisle, IL 60532-4351

**SUBJECT: ORISE CONTRACT NO. DE-AC05-06OR23100
 LETTER REPORT FOR ANALYTICAL RESULTS FOR FOUR SOIL SAMPLES
 FROM THE BRECKENRIDGE SITE, BRECKENRIDGE, MICHIGAN
 [INSPECTION REPORT NO. 040-06264/11-01]
 (RFTA NO. 11-001), DCN: 2050-LR-04-0**


Dear Mr. Bonano:

The Oak Ridge Institute for Science and Education (ORISE) received four soil samples on August 31, 2011 from the Breckenridge site in Breckenridge, Michigan. The samples were analyzed according to the NRC Form 303 supplied with the sample including an "urgent" priority. Sample identifications as described under the "Sample Number" field of Form 303 and collection data are presented in Table 1. Gamma spectroscopy data for Ra-226, Th-228, Th-230, Th-232, total Th, U-235, U-238, and total U are presented in Table 2. The pertinent procedure reference is included with the data table.

ORISE's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

My contact information is listed below. You may also contact Dale Condra at 865.241.3242 with any questions or comments.



Sincerely,


 Wade Ivey, Manager
 Laboratory

WPI:RDC:bj
 Enclosures

c: T. Carter, NRC/FSME/DWMEP T-8F5 File 2050
 S. Nesmith, NRC/FSME/PBPA/TWFN 8A23

electronic: S. Roberts, ORISE T. Vitkus, ORISE

Distribution approval and concurrence:	Initials
Technical Review	
Quality Review	

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TABLE 1

**SAMPLE IDENTIFICATION
AND COLLECTION DATA
BRECKENRIDGE SITE
BRECKENRIDGE, MICHIGAN**

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
2050S0010	BK-11-3-01	8/29/2011	10:20
2050S0011	BK-11-3-02	8/29/2011	10:20
2050S0012	BK-11-3-03	8/29/2011	14:30
2050S0013	BK-11-3-04	8/29/2011	14:30

TABLE 2

CONCENTRATIONS OF SELECTED GAMMA EMMITTING RADIONUCLIDES
 IN SOIL SAMPLES
 BY GAMMA SPECTROSCOPY CP1, REVISION 17
 BRECKENRIDGE SITE
 BRECKENRIDGE, MICHIGAN

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations, TPU ^a , and MDCs ^b (pCi/g)			
		Th-228 by Pb-212	Th-230	Th-232 by Ac-228	Total Th ^c
2050S0010	BK-11-3-01	0.54 ± 0.05 , 0.06	-8.4 ± 5.6 , 9.9	0.60 ± 0.11 , 0.15	1.14 ± 0.12
2050S0011	BK-11-3-02	0.40 ± 0.04 , 0.05	-6.7 ± 4.4 , 7.7	0.44 ± 0.08 , 0.10	0.84 ± 0.09
2050S0012	BK-11-3-03	0.58 ± 0.05 , 0.06	3.7 ± 1.6 , 4.7	0.66 ± 0.10 , 0.09	1.24 ± 0.11
2050S0013	BK-11-3-04	0.49 ± 0.05 , 0.05	4.1 ± 4.4 , 7.4	0.55 ± 0.10 , 0.12	1.04 ± 0.11

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations, TPU ^a , and MDCs ^b (pCi/g)			
		Ra-226 by Pb-214	U-235	U-238 by Th-234	Total U ^d
2050S0010	BK-11-3-01	0.51 ± 0.06 , 0.06	-0.03 ± 0.13 , 0.24	0.78 ± 0.26 , 0.67	1.53 ± 0.54
2050S0011	BK-11-3-02	0.40 ± 0.05 , 0.06	0.02 ± 0.11 , 0.20	0.43 ± 0.22 , 0.58	0.88 ± 0.45
2050S0012	BK-11-3-03	0.42 ± 0.04 , 0.05	0.14 ± 0.01 , 0.15	0.73 ± 0.20 , 0.56	1.60 ± 0.40
2050S0013	BK-11-3-04	0.49 ± 0.05 , 0.06	0.02 ± 0.11 , 0.20	0.67 ± 0.23 , 0.69	1.36 ± 0.47

^aUncertainties represent the 95% confidence level, based on total propagated uncertainties.

^bThe MDCs appear after the commas.

^cTotal Th is the sum of Th-228 + Th-232.

^dTotal U is calculated by (U-238*2) + U-235.