

**ORISE**  
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

August 11, 2006

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

**SUBJECT: REPORT OF ANALYTICAL RESULTS FOR BATCH TWO, SEVEN  
SOIL SAMPLES, FROM DOW CHEMICAL COMPANY, BAY CITY,  
MICHIGAN [INSPECTION REPORT NO. 040-00017/2006-001]  
(RFTA NO. 06-001)**

Dear Mr. Bonano:

The Oak Ridge Institute for Science and Education (ORISE) received Batch Two, which consisted of seven soil samples, on July 27, 2006 collected at the Dow Chemical Company in Bay City, Michigan. The seven samples were analyzed by gamma spectroscopy (GS) for thorium. The sample identifications and collection data are presented in Table 1. The GS data are presented in Table 2. The pertinent procedure references are provided in the specific tables.

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

My contact information is listed below. You may also contact Wade Ivey at 865.576.9184 with any questions or comments.

Sincerely,

*Dale Condra*

Dale Condra, Manager  
Laboratory

RDC:WPI:ar

Enclosures

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**TABLE 1**

**SAMPLE IDENTIFICATIONS  
AND COLLECTION DATA  
THE DOW CHEMICAL COMPANY  
BAY CITY, MICHIGAN**

<b>ORISE Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Collection Date</b>	<b>Collection Time</b>
1708S0004	DOW-06-2-01	7/13/06	16:06
1708S0005	DOW-06-2-02	7/25/06	10:45
1708S0006	DOW-06-2-03	7/25/06	10:13
1708S0007	DOW-06-2-04	7/25/06	7:56
1708S0008	DOW-06-2-05	7/25/06	13:19
1708S0009	DOW-06-2-06	7/25/06	14:35
1708S0010	DOW-06-2-07	7/25/06	14:30

TABLE 2

**CONCENTRATIONS OF SELECTED GAMMA EMITTING  
RADIONUCLIDES IN SOIL SAMPLES  
BY SAMPLE PREPARATION SP3, REVISION 4  
AND GAMMA SPECTROSCOPY CP1, REVISION 15  
THE DOW CHEMICAL COMPANY  
BAY CITY, MICHIGAN**

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations (pCi/g) <sup>a</sup>			
		Th-230	Th-228 by Pb-212	Th-232 by Ac-228	Total Th <sup>b</sup>
1708S0004	DOW-06-2-01	-0.5 ± 3.0 <sup>c</sup>	0.50 ± 0.05	0.54 ± 0.13	1.04 ± 0.14
1708S0005	DOW-06-2-02	-0.2 ± 2.1	0.25 ± 0.04	0.31 ± 0.12	0.56 ± 0.13
1708S0006	DOW-06-2-03	2.7 ± 3.0	0.51 ± 0.05	0.47 ± 0.12	0.98 ± 0.13
1708S0007	DOW-06-2-04	-0.5 ± 2.4	0.26 ± 0.03	0.27 ± 0.10	0.53 ± 0.10
1708S0008	DOW-06-2-05	1.0 ± 3.1	0.62 ± 0.06	0.65 ± 0.14	1.27 ± 0.15
1708S0009	DOW-06-2-06	26.2 ± 6.9	5.28 ± 0.31	5.13 ± 0.47	10.41 ± 0.56
1708S0010	DOW-06-2-07	4.8 ± 4.9	2.15 ± 0.13	2.37 ± 0.23	4.52 ± 0.26

<sup>a</sup>The average MDCs for these radionuclides range from 0.03 pCi/g for Th-228 by Pb-212 to 6.9 pCi/g for Th-230.

<sup>b</sup>Total thorium is the sum of Th-228 and Th-232.

<sup>c</sup>Uncertainties represent the 95% confidence level, based on total propagated uncertainties.