

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

December 19, 2007

Mr. James Webb
Office of Federal and State Materials
and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Two White Flint North, Mail Stop: 7E18
11545 Rockville Pike
Rockville, MD 20852-2738

**SUBJECT: REVISED—RADIOLOGICAL RESULTS FOR PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION SAMPLES
1706S050 TO 1706S058 AND 1706S0079 TO 1706S0098 AT THE CHEVRON
MINING WASHINGTON REMEDIATION PROJECT, WASHINGTON,
PENNSYLVANIA - DCN 1706-LR-01-01
(DOCKET NO. 040-08778; TAC NO. L52062; RFTA NO. 06-007)**

Dear Mr. Webb:

The Oak Ridge Institute for Science and Education (ORISE) performed radiological analyses on 29 soil samples collected by Pennsylvania Department of Environmental Protection (PADEP) personnel at the Chevron Mining Washington Remediation Project (CMWRP) in Washington, Pennsylvania during the period of September and October 2007. These radiological analyses were requested and approved by the U.S. Nuclear Regulatory Commission (NRC). The radiological soil sample results with average background concentrations subtracted are provided in the attached table. These samples were analyzed by ORISE Laboratory gamma spectroscopy procedure CP1-Revision 15. ORISE previously submitted these results on November 20, 2007. In that report, sample 1706S0051 should have been reported in Area B1N and sample 1706S0058 should have been reported in the South Tar Pond. I apologize for the confusion from the previous report.

ORISE's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request. If you have any questions or comments, please direct them to me at 865.576.0065 or Sarah Roberts at 865.241.8893.

Sincerely,



Wade C. Adams
ORISE Health Physicist/Project Leader
Survey Projects

WCA:km

Enclosure

c: T. Carter, NMSS/DWMEP/FSME/DD/SP TWFN 8F5
E. Knox-Davin, NRC/PBPA/FSME/TWFN 8A23
J. Nicholson, NRC/Region I
File/1706

R. Woods, PADEP
E. Abelquist, ORISE
S. Roberts, ORISE

Distribution approval and concurrence:	Initials
Technical Management Team Member	DJR RWC ATP
Laboratory Manager	
Quality Manager	

Voice: 865.576.0065

Fax: 865.241.3497

E-mail: Wade.Adams@orau.org

TABLE 1

**RADIONUCLIDE CONCENTRATIONS IN PADEP-COLLECTED SOIL SAMPLES
FROM AREAS B1 NORTH, B2 AND THE SOUTH TAR POND
CHEVRON MINING WASHINGTON REMEDIATION PROJECT
WASHINGTON, PENNSYLVANIA**

ORISE Sample ID	PADEP Sample ID ^a	Radionuclide Concentrations in Soil Samples (pCi/g)						
		Ra-226	Th-228	Th-232	Total Thorium ^b	U-235	U-238	Total Uranium ^c
Background Samples^d								
<i>BKG Average</i>	<i>N/A^e</i>	<i>0.89 ± 0.26^f</i>	<i>1.26 ± 0.26</i>	<i>1.31 ± 0.57</i>	<i>2.57 ± 0.62</i>	<i>0.10 ± 0.37</i>	<i>1.5 ± 1.8</i>	<i>3.0 ± 3.6</i>
Area B1 North PADEP Samples^g								
1706S0051	---	0.87 ± 0.42	9.74 ± 0.70	9.9 ± 1.2	19.6 ± 1.4	0.28 ± 0.50	2.3 ± 2.4	5.0 ± 4.8
1706S0052	---	0.00 ± 0.28	1.56 ± 0.32	1.80 ± 0.65	3.36 ± 0.72	0.00 ± 0.39	0.1 ± 1.9	0.2 ± 3.8
1706S0053	---	-0.04 ± 0.29	0.29 ± 0.28	0.06 ± 0.61	0.35 ± 0.66	-0.05 ± 0.39	-0.2 ± 1.9	-0.5 ± 3.8
1706S0054	---	0.16 ± 0.31	1.07 ± 0.31	1.24 ± 0.64	2.31 ± 0.70	-0.03 ± 0.39	0.2 ± 2.0	0.4 ± 3.9
1706S0055	---	-0.05 ± 0.30	0.34 ± 0.29	0.62 ± 0.62	0.96 ± 0.68	-0.07 ± 0.39	-0.3 ± 2.0	-0.6 ± 3.9
1706S0056	---	0.91 ± 0.31	0.70 ± 0.29	0.61 ± 0.61	1.31 ± 0.67	-0.10 ± 0.39	-0.3 ± 2.0	-0.6 ± 3.9
1706S0057	---	0.03 ± 0.28	0.08 ± 0.28	0.02 ± 0.61	0.10 ± 0.66	-0.01 ± 0.39	-0.5 ± 1.9	-0.9 ± 3.8
Area B2 PADEP Samples^g								
1706S0079	B3c02D	0.15 ± 0.28	0.23 ± 0.28	0.12 ± 0.61	0.35 ± 0.66	-0.06 ± 0.39	-0.1 ± 1.9	-0.2 ± 3.8
1706S0080	B3b02C	0.14 ± 0.28	0.75 ± 0.30	0.89 ± 0.63	1.64 ± 0.69	-0.04 ± 0.39	0.4 ± 2.0	0.8 ± 3.9
1706S0081	B3a03C	-0.03 ± 0.28	0.42 ± 0.29	0.47 ± 0.62	0.89 ± 0.68	-0.07 ± 0.39	-0.2 ± 2.0	-0.4 ± 3.9
1706S0082	B3a04D	0.25 ± 0.28	1.88 ± 0.32	2.09 ± 0.66	3.97 ± 0.73	-0.04 ± 0.39	0.5 ± 1.9	0.9 ± 3.8
1706S0083	B3a05D	0.58 ± 0.31	3.42 ± 0.40	3.29 ± 0.75	6.71 ± 0.84	0.09 ± 0.42	0.7 ± 2.1	1.6 ± 4.2
1706S0084	B3b04B	-0.14 ± 0.27	-0.20 ± 0.27	-0.24 ± 0.59	-0.44 ± 0.65	0.00 ± 0.38	-0.2 ± 1.9	-0.3 ± 3.8
1706S0085	B3c05C	0.05 ± 0.27	1.84 ± 0.32	1.75 ± 0.64	3.59 ± 0.72	0.01 ± 0.39	0.1 ± 1.9	0.2 ± 3.8
1706S0086	B3c03C	0.52 ± 0.30	4.21 ± 0.42	4.03 ± 0.78	8.24 ± 0.88	-0.13 ± 0.41	1.1 ± 2.0	2.1 ± 3.9
1706S0087	B3e02C	0.37 ± 0.29	1.15 ± 0.31	1.14 ± 0.64	2.29 ± 0.71	0.15 ± 0.42	0.5 ± 2.0	1.1 ± 3.9

TABLE 1 (continued)

**RADIONUCLIDE CONCENTRATIONS IN PADEP-COLLECTED SOIL SAMPLES
FROM AREAS B1 NORTH, B2 AND THE SOUTH TAR POND
CHEVRON MINING WASHINGTON REMEDIATION PROJECT
WASHINGTON, PENNSYLVANIA**

ORISE Sample ID	PADEP Sample ID ^a	Radionuclide Concentrations in Soil Samples (pCi/g)						
		Ra-226	Th-228	Th-232	Total Thorium ^b	U-235	U-238	Total Uranium ^c
Area B2 PADEP Samples^g – continued								
1706S0088	B3d07C	0.44 ± 0.30	1.03 ± 0.31	1.17 ± 0.67	2.20 ± 0.74	-0.08 ± 0.41	0.9 ± 2.1	1.8 ± 4.2
1706S0089	B3e07D	0.11 ± 0.28	0.21 ± 0.28	0.08 ± 0.61	0.29 ± 0.66	0.02 ± 0.39	0.2 ± 2.0	0.4 ± 3.9
1706S0090	B3g07C	0.18 ± 0.29	0.54 ± 0.30	0.96 ± 0.64	1.50 ± 0.70	-0.14 ± 0.40	0.0 ± 2.0	-0.1 ± 4.0
1706S0091	B3g06B	-0.08 ± 0.27	-0.01 ± 0.28	-0.17 ± 0.60	-0.18 ± 0.66	-0.06 ± 0.39	-0.4 ± 1.9	-0.9 ± 3.8
1706S0092	B3f05D	0.16 ± 0.29	1.87 ± 0.33	1.73 ± 0.67	3.60 ± 0.74	0.02 ± 0.40	-0.6 ± 2.0	-1.2 ± 3.9
1706S0093	B3e06C	-0.03 ± 0.28	-0.22 ± 0.27	-0.26 ± 0.60	-0.48 ± 0.66	-0.03 ± 0.39	-0.4 ± 1.9	-0.8 ± 3.8
1706S0094	B3d05A	0.11 ± 0.28	1.93 ± 0.33	2.18 ± 0.66	4.11 ± 0.73	-0.08 ± 0.39	0.3 ± 1.9	0.5 ± 3.8
1706S0095	B3d04B	0.11 ± 0.28	0.51 ± 0.29	0.53 ± 0.63	1.04 ± 0.68	-0.03 ± 0.41	-0.4 ± 1.9	-0.7 ± 3.9
1706S0096	---	-0.07 ± 0.28	0.17 ± 0.28	0.10 ± 0.61	0.27 ± 0.66	0.00 ± 0.39	-0.2 ± 1.9	-0.3 ± 3.8
1706S0097	---	0.04 ± 0.29	2.96 ± 0.37	2.90 ± 0.73	5.86 ± 0.81	-0.08 ± 0.41	-0.4 ± 2.0	-0.9 ± 4.0
1706S0098	---	-0.19 ± 0.28	0.82 ± 0.30	0.62 ± 0.63	1.44 ± 0.69	-0.07 ± 0.39	-0.6 ± 2.0	-1.3 ± 3.9
South Tar Pond PADEP Samples^g								
1706S0050	---	0.24 ± 0.31	1.10 ± 0.31	0.99 ± 0.65	2.09 ± 0.72	0.01 ± 0.40	0.0 ± 2.0	0.0 ± 3.9
1706S0058	---	0.13 ± 0.30	0.24 ± 0.28	0.30 ± 0.63	0.54 ± 0.68	-0.04 ± 0.39	0.2 ± 2.0	0.4 ± 3.9

^aSample identification provided by PADEP personnel.

^bTotal thorium calculated by adding Th-228 to Th-232 concentrations.

^cTotal uranium calculated by doubling the U-238 concentration and adding the U-235 concentration.

^dSix samples were collected by ORISE on a previous survey trip to determine the average background concentration for each radionuclide of concern.

^eNot applicable.

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

^gAverage background concentrations for each radionuclide were subtracted from the PADEP-collected soil samples.

^hPADEP sample identification not provided.

ⁱZero values are due to rounding.