

# Idaho Cleanup Project

CH2M♦WG IDAHO, LLC

## INTEROFFICE MEMORANDUM

**Date:** July 3, 2013

**To:** H. S. Forsythe MS 9140 3-3563

**From:** B. A. McIlwain *BAM* MS 9136 3-3493

**Subject:** TRANSMITTAL OF RESULTS FOR RADIOANALYTICAL PE SAMPLES INCLUDED IN OU 3-14 PERCHED WATER - 2013

Radioanalytical performance evaluation (PE) water samples 35993-01, 35993-02, and 35993-03 were submitted to GEL Laboratories, LLC as double blind performance evaluation samples included with the OU 3-14 Perched Water - 2013 field samples. The PE samples, prepared by the U.S. Department of Energy (DOE) Radiological and Environmental Sciences Laboratory (RESL), provide a real-time monitor that is used to assess the laboratory's proficiency in performing "routine" radioanalytical measurements.

The radioanalytical results were evaluated using the electronic data system at DOE RESL. For a result to be acceptable the statistical difference between the laboratory result and known value must be within 3-sigma and the laboratory result must be within  $\pm 30\%$  of the known value.

The results met the acceptance criteria established by DOE RESL, with the exception of zinc-65 and strontium-90.

The strontium-90 result was a false positive, meaning a positive result was reported when no strontium-90 was present in the sample. The zinc-65 result was not within 30% of the known value.

The result values and evaluations are presented in the attachments. The PE sample results have been forwarded to the analytical laboratory.

Should you have any questions, please contact me at 533-3493, or by e-mail at [Beth.McIlwain@icp.doe.gov](mailto:Beth.McIlwain@icp.doe.gov).

Attachments

cc: J. R. Forbes, MS 9140  
K. A. Otter, MS 9125/r/ARDC Files/r/Field Data Files  
D. E. Shanklin, MS 9140  
D. M. Smith, MS 9140  
B. A. McIlwain Letter File (BAM-065-13)

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# DEPARTMENT OF ENERGY RADIOLOGICAL & ENVIRONMENTAL SCIENCES LABORATORY

Samples Prepared For: OU 3-14

Matrix: Water

LogNo	SampleID	Nuclide	Known Activity	Expt'l Activity	Ratio Exp/Known	Agreement
SMO 410	35993-01	I-129	9.04 +/- 0.13 E0 pCi/L	8.2 +/- 0.9 E0 pCi/L	0.91 +/- 0.10	YES

Samples Prepared By: \_\_\_\_\_

ACTIVITIES ARE AS OF: 4/1/2013      UNCERTAINTIES ARE ONE SIGMA

Acceptance Criteria: 3 sigma      30 %      -30 %

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# DEPARTMENT OF ENERGY

## RADIOLOGICAL & ENVIRONMENTAL SCIENCES LABORATORY

Samples Prepared For: OU 3-14

Matrix: Water

LogNo	SampleID	Nuclide	Known Activity	Expt'l Activity	Ratio Exp/Known	Agreement
SMO 408	35993-02	Co-60	5.06 +/- 0.06 E1 pCi/L	5.0 +/- 0.7 E1 pCi/L	0.99 +/- 0.14	YES
SMO 408	35993-02	Cs-134	4.35 +/- 0.08 E1 pCi/L	3.9 +/- 0.6 E1 pCi/L	0.90 +/- 0.14	YES
SMO 408	35993-02	Cs-137	4.72 +/- 0.09 E1 pCi/L	5.2 +/- 0.7 E1 pCi/L	1.10 +/- 0.15	YES
SMO 408	35993-02	Mn-54	3.41 +/- 0.08 E1 pCi/L	3.6 +/- 0.6 E1 pCi/L	1.06 +/- 0.18	YES
SMO 408	35993-02	Pu-238	BLANK	3 +/- 3 E-2 pCi/L		YES
SMO 408	35993-02	Pu-239	2.61 +/- 0.05 E0 pCi/L	2.0 +/- 0.2 E0 pCi/L	0.77 +/- 0.08	YES
SMO 408	35993-02	Sr-90	BLANK	8.3 +/- 1.0 E0 pCi/L		NO False Pos.
SMO 408	35993-02	Tc-99	4.00 +/- 0.13 E2 pCi/L	4.0 +/- 0.2 E2 pCi/L	1.00 +/- 0.06	YES
SMO 408	35993-02	U-234	1.30 +/- 0.04 E0 pCi/L	1.340 +/- 0.018 E0 pCi/L	1.03 +/- 0.03	YES
SMO 408	35993-02	U-238	3.63 +/- 0.10 E0 pCi/L	3.7 +/- 0.4 E0 pCi/L	1.01 +/- 0.11	YES
SMO 408	35993-02	Zn-65	2.42 +/- 0.05 E1 pCi/L	4.0 +/- 1.0 E1 pCi/L	1.7 +/- 0.4	NO 65%

Samples Prepared By: \_\_\_\_\_

ACTIVITIES ARE AS OF: 4/1/2013      UNCERTAINTIES ARE ONE SIGMA

Acceptance Criteria: 3 sigma      30 %      -30 %

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# DEPARTMENT OF ENERGY RADIOLOGICAL & ENVIRONMENTAL SCIENCES LABORATORY

Samples Prepared For: OU 3-14

Matrix: Water

LogNo	SampleID	Nuclide	Known Activity	Expt'l Activity	Ratio Exp/Known	Agreement
SMO 409	35993-03	H-3	1.11 +/- 0.03 E4 pCi/L	9.8 +/- 1.0 E3 pCi/L	0.89 +/- 0.10	YES

Samples Prepared By: \_\_\_\_\_

ACTIVITIES ARE AS OF: 4/1/2013      UNCERTAINTIES ARE ONE SIGMA

Acceptance Criteria: 3 sigma      30 %      -30 %

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