

**START**

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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May 31, 1995

Mr. Wayne Slater  
Battelle Pacific Northwest Laboratories  
P.O. Box 999, K6-22  
Richland, WA 99352

Dear Mr. Slater:

Re: Evaluation of Data from Simulated High Level Waste Slurry Treatment and Storage Unit Closure (SHLWS)

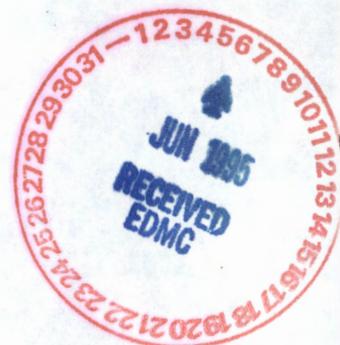
The data from the analyses conducted by the U. S. Department of Energy (USDOE) and the Washington State Department of Ecology's (Ecology) contract laboratory, Analytical Technologies, Inc., (ATI), have been compared and evaluated by Ecology. The evaluation consisted of the following:

- Comparison of USDOE data and the agreed upon Model Toxics Control Act (MTCA) "B" Residential levels
- Evaluation of Ecology data
- Comparison of Ecology and the respective USDOE Data

**Comparison of USDOE Data and MTCA Levels:**

**Metals:** All metal concentrations were within required limits, however, a high variability in the lead concentration existed. Lead values fluctuated, but fell below the Data Quality Objective (DQO) agreed upon level of 250 mg/kg. This value was selected from the MTCA level "A" values. The Quality Assurance/Quality Control (QA/QC) was satisfactory for these analyses.

**Cerium:** Cerium values were used as an indicator of potential spills during the operation of this Treatment Storage and Disposal (TSD) unit. The cerium values are near, or below, the crustal abundance concentration of 60 mg/kg. Only one sample (SA11SG) produced a slightly higher value than the agreed limit (63 mg/kg). This value is approximately 5% over the agreed limit and this variation is well within normal laboratory error. Therefore, no evidence of releases from the TSD unit was obtained from the sampling event.



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Organics: All compounds evaluated were below detection limits and the QA/QC was satisfactory for these analyses.

Radiation Data: All analyses produced very low values, which agree with typical Hanford background data. Therefore, there was no indication of releases from the TSD unit according to the radiation data.

#### **Evaluation of Ecology Data:**

Metals: As observed with the USDOE data, the values for lead varied considerably from 6.9 to 35.6 mg/kg for samples 94029 and 94028, respectively. The QA/QC was satisfactory for these analyses.

Cerium: It was not possible for Ecology's contract laboratory to conduct a cerium analysis, therefore, no values were available for this analyte.

Volatile Organics: The only species detected in one sample (94028) were methylene chloride and acetone, which are usually present at low concentrations due to activities within laboratories. No other species were observed and the detection levels were adequately low for all analyses. The QA/QC was satisfactory for these analyses.

Semi-volatile Organics: The reagent blank observed some very low phthalate species contamination, including three tentatively identified compounds (TICs). The target species for the analysis of sample 94028 were all below detection limit and most of the TICs observed were unknown alkalines. Those few species observed were near the detection limits for the analysis. The QA/QC was satisfactory for these analyses.

#### **Comparison of Data:**

The analyses compared were: 1) H94028 for Ecology and sample 9018SGD for USDOE, and 2) H94029 for Ecology and NE9SG for USDOE. The following description comprises both analyses and individual variation between the two groups is noted.

Metals: There existed some variation between the list of analytes requested by Ecology and those provided by USDOE. However, the most important analytes were covered by both analyses. For those species common to both, the agreement was within 10-20%, which is acceptable under standard laboratory procedures.

Cerium: It was not possible for Ecology's contract laboratory to conduct a cerium analysis, therefore, no comparison for this analyte is possible.

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Volatile Organics: All species detected by both groups were below detection limit and were in complete agreement.

Semi-volatile Organics: The analyses conducted by USDOE were at a higher detection limit (a factor of two times the limit achieved by Ecology.) However, the analyses by both groups failed to produce any level above their respective limits for the target list of analytes. The issue of varying detection limits does not affect the results for this closure.

**Final Recommendation:**

The analytical results indicate no observed contamination remains at this site from the activities of the TSD. Closure of this TSD can proceed. No remediation of the site, due to the activities of the TSD, is necessary.

If you have any questions regarding the above, please contact me at (509) 736-3025.

Sincerely,



Greta P. Davis  
Nuclear Waste Program

GD:skr

- cc: Ellen Mattlin, USDOE
- Brian Day, PNL
- Clark Lindenmeier, PNL
- Joan Bartz, Mac Tac
- Lawrence Gaddis, ICFKH
- Administrative Records: SHLWS ✓