

ER PROGRAM DATA ASSESSMENT  
SUMMARY REPORT FORM

Batch No. 8909S066 - E0700 Site Area 2 - 881 Hillside  
 Laboratory TMA/Eberline No. of Samples/Matrix 5/Water  
 Reviewer Org. TechLaw, Inc.  
 Sample Numbers SW034006, SW033006, SW032006, SW104006, SW08006

Alpha Spectrometric Analyses  
Data Assessment Summary

	Iso-U	Iso-Pu	Am <sup>241</sup>	Comments
1. Holding Times	<u>V</u>	<u>V</u>	<u>V</u>	
2. Initial Calibrations	<u>V</u>	<u>V</u>	<u>V</u>	
3. Blanks	<u>V</u>	<u>V</u>	<u>A</u>	<u>See Action Item 1</u>
4. Lab Replicates	<u>V</u>	<u>V</u>	<u>A</u>	<u>See Action Item 2</u>
5. Lab Control Samples	<u>V</u>	<u>V</u>	<u>V</u>	
6. Resolution	<u>V</u>	<u>V</u>	<u>V</u>	
7. Recovery Factors	<u>V</u>	<u>V</u>	<u>R</u>	<u>See Action Item 3</u>
8. Sample Calculations	<u>V</u>	<u>V</u>	<u>V</u>	<u>See Comments 1 &amp; 2</u>
9. Overall Assessment	<u>V</u>	<u>V</u>	<u>R</u>	

V = Data had no problems.  
 A = Data acceptable but qualified due to problems.  
 R = Data rejected.  
 X = Problems, but do not affect data.

Data Quality: Data for iso-Uranium and iso-Plutonium analyses in this batch were reviewed and found to be valid. Data for Americium analysis in this batch were reviewed and found to be rejected. See Action Items and Comments listed below.

ADMIN RECORD

"REVIEWED FOR CLASSIFICATION"  
 By R. B. Hoffman  
 Date 2/16/90

REVIEWED FOR CLASSIFICATION/UCNI  
 By George H. Setlock  
 Date 6/27/90

**Action Items:** 1) Blanks: One out of two Americium reagent blanks had a value of .08 pCi/L which exceeded the Minimum Detectable Activity (MDA) of .02 pCi/L; thus all results were flagged JA (estimated).

2) Lab Replicates: One out of two sets of Americium replicates contained a value of 0.52 pCi/L which was outside 3  $\sigma$  control limits of the weighted mean of 0.22 pCi/L; thus all results were flagged JA (estimated).

3) Chemical Recoveries: The chemical recovery obtained for Americium analyses were as follows: sample SW034006 was 1%, sample SW033006 was 7%, sample SW032006 was 4.5%, SW104006 was 2.5%, and sample SW080006 was 1%; thus all results were flagged R (rejected).

**Comments:** 1) Sample Calculations: An error was found in the iso-Uranium reported results for sample SW033006. The correct results are as follows: 1.3 +/- 0.8 pCi/L for U<sup>234</sup> and 1.3 +/- 0.7 pCi/L for U<sup>238</sup>.

2) Minimum Detectable Activities: The U<sup>234</sup> result for sample SW034006 had an MDA of 1.2 pCi/L which exceeds the RDL of 0.6 pCi/L.

**Note:** Data Summary Tables are attached.

Richard Thurman  
Reviewer Signature

4/16/90  
Date

**Radiochemical Data Completeness  
Checklist for Alpha Spectrometric Analyses  
of Soil and Water**

- A. Yes Case Narrative  
Yes Abnormalities explained  
Yes Matrix Problems explained  
Yes Instrument problems explained  
Yes Improper collection, storage, preservation, container explained  
Yes Hold times were met, explained if not met
- B. Yes Efficiency, Background, and Calibrations Data Package  
Yes ID of each Detector  
Yes Dates of last efficiency check including: spectra and/or channel by channel printout, certificates and DPMs of check sources; counts obtained; count durations; and channels selected for ROIs  
Yes Proper channel numbers of isotopes of interest, based on calibration data of Pu, Am, and U standards  
Yes Total memory (channels per detector)  
Yes Energy range of the alpha detection system (KeV)  
Yes Gain (KeV/channel) of the alpha detection system  
Yes Dates of last background spectra including: spectra and/or channel by channel printout; count durations; counts obtained; and channels selected for ROIs
- C. Yes Reagent Blanks Data Package  
Yes ID of each detector used  
Yes Analyst initials  
Yes Date reagent blanks were analyzed  
Yes ID of samples analyzed with the reagent blanks  
Yes Type of method blank used, MDA of method  
Yes Volume of aliquot for reagent blanks
- D. Yes Replicate Sample Data Package  
Yes ID of each detector used  
Yes Analyst Initials  
Yes Date sample and replicates were analyzed  
Yes Sample IDs, values obtained for sample and replicates  
Yes Count Durations of sample and replicates  
Yes Volume of aliquot for sample and replicates  
Yes Calculated uncertainties and MDAs
- E. Yes Lab Control Samples (LCSs) Data Package  
Yes ID of each detector used  
Yes Analyst initials  
Yes Date LCSs were analyzed  
Yes ID of LLCs and HLCs  
Yes Values obtained for LCSs with uncertainty and MDA  
Yes True value of LCSs with uncertainty  
Yes ID of samples analyzed with the LCSs

- F. Yes Resolution  
Yes System gain (in KeV/Channel)  
Yes FWHM (in channels)  
Yes Counts in peak channel for HLCS
- G. Yes Internal Recovery Factors  
Yes Efficiency factor provided for each detector used  
Yes ID of each detector used  
Yes Net counts obtained for each isotopic tracer used  
Yes Count duration  
Yes DPM value of each isotopic tracer  
Yes Calculated Chemical Recovery
- H. Yes Sample Data Package  
Yes Printed report of results for samples and reruns  
Yes Computer calculations sheet including: sample IDs, detector IDs, isotopes of interest, counts obtained for samples, background counts obtained, isotopic tracer counts obtained, count durations, DPMs of tracer used, aliquots of sample and tracer, detector efficiency, chemical recovery, activities obtained for samples, uncertainties, and MDAs
- I. Yes Minimum Detectable Activity  
Yes Background Measurements including: counts and count durations of samples and backgrounds taken during the same weekly time period  
Yes Date of analysis  
Yes Background CPM  
Yes MDA calculated for each isotopic analysis for the sample

**RADIOCHEMICAL ANALYSIS  
ANALYTICAL RESULTS (pCi/L)**

**TABLE #: 8909S066 - E0700**

**Page 1 of 1**

**SITE NAME: Area 2 - 881 Hillside**

Sample Location	SW034006	SW033006	SW032006	SW104006	SW080006															
Sample Number	9/19/89	9/19/89	9/19/89	9/19/89	9/19/89															
Sample Date	Water	Water	Water	Water	Water															
Matrix	DL	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ				
Parameter	pCi/L	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ				
Gross Alpha	2																			
Gross Beta	4																			
Total Strontium	1																			
Total Cesium	1																			
Radium 228	1																			
Tritium	400																			
Uranium 234 & 233	0.6	0.2 U	0.8	V	1.3	0.8	V	0.8 U	0.8	V	0.2 U	0.5	V	0.7	0.7	V				
Uranium 235	0.6	-0.2 U	0.4	V	0.1 U	0.3	V	0.3	0.4	V	-0.3 U	0.3	V	0.1	0.2	V				
Uranium 238	0.6	0.4	0.5	V	1.3	0.7	V	0.8	0.6	V	0.1 U	0.6	V	0.4 U	0.6	V				
Plutonium 239 & 240	0.01	.01	.01	V	.01	.01	V	.01	.01	V	.01 U	.01	V	.01	.01	V				
Americium 241 & 242	0.01	.43	.15	R	.04	.02	R	.32	.08	R	.10	.05	R	.37	.24	R				
Radium 226	0.05																			
Gamma scan																				
Other isotopes																				

- U Indicates the parameter was not detected above the Instrument Quantitation Limit
- J Quantitation is approximate due to limitations identified during the quality control review
- \* Value is rejected due to other contractual criteria examined during the quality control review
- \*\* Value is rejected due to blank contamination identified during the quality control review
- DL Detection Limit in Picocuries per Liter (pCi/L)

- DQ Data Qualifier
- V Valid
- A Acceptable with qualifications
- R Rejected

aspc700L/rk49