

ER PROGRAM DATA ASSESSMENT
SUMMARY REPORT FORM

Batch No. E88-3369/4th Quarter 1988 Site Area 2 - 881 Hillside
Laboratory RFP - 881 General Labs No. of Samples/Matrix 26/Water
Reviewer Org. TechLaw, Inc.
Sample Numbers TB(10/18/88), FB(10/18/88), 45-87, 52-87, 52-87D, 70-86, 5-87, TB(10/20/88),
FB(10/20/88), 2-87, 56-86, 69-86, 62-86, 4-87, 3-87, 3-87D, TB(10/25/88), FB(10/25/88), 9-74, 10-74, 8-87,
8-87D, TB(10/27/88), FB(10/27/88), FBD(10/27/88), D56-86

Data Assessment Summary

Gross $\alpha + \beta$ Analysis
by Gas Proportional Counters

Comments

1.	Holding Times	<u>V</u> Holding times exceeded for 2 samples. See Action Item 1.
2.	Initial Calibrations	<u>V</u>
3.	Continuing Calibrations	<u>V</u>
4.	Blanks	<u>A</u> See Action Item 2.
5.	Lab Replicates	<u>V</u>
6.	Lab Control Samples	<u>A</u> See Action Item 3.
7.	QC-LLD	<u>V</u> See Comment Item 1.
8.	Size of Aliquot	<u>V</u>
9.	Self Absorption-Recovery Factors	<u>V</u>
10.	Sample Calculations	<u>V</u>
11.	Overall Assessment	<u>A</u> Data acceptable with qualifications.

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 contained in this batch were reviewed and found to be acceptable with qualifications. Acceptable,
qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged.
(Refer to attached Results Summary Tables).

ADMIN RECORD

"REVIEWED FOR CLASSIFICATION
By R. D. Hoffman
Date 7-11-90

REVIEWED FOR CLASSIFICATION/UCNI
By George H. Setlock
Date 6/25/90

3369/rk16

Action Items: 1) Holding Times: Due to instrument downtime, the holding times for samples 52-87 and 52-87D were exceeded by approximately two months. The results for these samples were flagged (R) rejected.

2) Blanks: One of the two reagent blanks counted 2/11/89 was apparently contaminated during the analysis. All alpha and beta values counted 2/11/89 were flagged JA (estimated, acceptable). The affected samples are: TB(10/20/88), FB(10/20/88), TB(10/25/88), FB(10/25/88), TB(10/27/88), FB(10/27/88), FBD(10/27/88).

3) Lab Control Samples: The precision for alpha counting of the quality control samples run 2/11/89 and 7/27/89 was outside 2 sigma counting error. The affected samples are: 52-87, 52-87D, and samples listed in Action Item 2. The alpha results were flagged JA (estimated, acceptable).

Comments: 1) QC-LLD: The Required Detection Limit (RDL) for gross alpha and beta analysis were not achieved on samples 5-87, 69-86, 2-87, 4-87, 8-87, 8-87D, 9-74, 10-74, 52-87 and 52-87D due to heavy dissolved solids in the sample matrix.

Note: Data Summary Tables are attached.

Marilyn Ayers
Reviewer Signature

January 9, 1990
Date

**Radiochemical Data Completeness
Checklist for Radiometric and Gross α & β Analyses
of Soil and Water by Gas Proportional Counters**

- I. Yes Case Narrative
Yes Abnormalities explained
Yes Matrix Problems explained
Yes Instrument problems explained
Yes Improper collection, storage, preservation, container explained
Yes Hold times met, explained if not met
- II. Yes Initial Calibration Data Package
Yes Detector ID
Yes Analyst initials
Yes Date, Time calibrated
Yes Current Batch Date
Yes Name, Activities, Dates of Certification of all NBS standards
Yes Voltage settings, gain settings, or plot of voltage versus std CPMs
Yes Plots of net std CPMs versus gain settings at voltage giving highest net CPM to gain ratio (crosstalk plot)
Yes Last service or repair date for detector
- III. Yes Continuing Calibration Data Package:
Yes Detector ID
Yes Analyst initials
Yes Date, Time of calibration check
Yes Name, Activities, Dates of Certification of check standards
Yes CPMs observed, count duration, mean counts
Yes Control chart means (copy of control charts)
Yes Background CPMs observed, results of chi square test
Yes Mean of Last 10 background checks and allowable limits
Yes Raw data from counter to verify crosstalk values
- IV. Yes Blanks Data Package
Yes ID number of each detector the blank is counted in
Yes Date, Times of counts
Yes Samples and IDs in the set with the blank
Yes Type of blank used
Yes Detection level reported
- V. Yes Lab Replicates Data Package
Yes Detector ID
Yes Analyst Initials
Yes Date, Time Analyzed
Yes Value obtained for sample, replicates, mean values
Yes Count Durations of samples and backgrounds
Yes Statistical Analysis of Range, Control Limits

- VI. Yes Lab Quality Control Samples Data Package
Yes Sample ID, Detector ID
Yes Analyst initials
Yes Values obtained, true value of sample
Yes Statistical Analysis of results
Yes Name, Activities, Certification date of QC samples
- VII. Yes Self-Absorption, Recovery Factors Data Package
Yes Linear Equation for calibration curve, coefficients
Yes Copy of self-absorption curve
Yes Raw Data from counter to determine coefficients
- VIII. Yes Lower Limit of Detection
Yes Background measurements
Yes Detector ID
Yes Date, Time of count, count duration
Yes Mean background CPM over long period
Yes Calculated LLD for isotope of interest
- IX. Yes Size of Aliquot in Gross α & β Determination Data Package
Yes Sample ID
Yes Date, Time analyzed
Yes Measured specific conductance
Yes Calculated volume of sample to deliver 100mg solids
Yes Efficiency factor used
- X. Yes Sample Data Package
Yes Printed report of results for sample, reruns
Yes Computer calculations
Yes Raw Data from counter, copies of notebook pages

RADIOCHEMICAL ANALYSIS
ANALYTICAL RESULTS (pCi/L)

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SITE NAME: Rocky Flats Plant - Hillside

Sample Location	TB		FB		45-87		52-87		52-87D		70-86		5-87		TB		FB											
	3369-TB	10/18/88	3369-FB	10/18/88	3369-45-87	10/18/88	3369-52-87	10/18/88	3369-52-87D	10/18/88	3369-70-86	10/18/88	3369-5-87	10/18/88	3369-TB	10/20/88	3369-FB	10/20/88										
Matrix	Water		Water		Water		Water		Water		Water		Water		Water		Water											
DL	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ										
Parameter	2	0U	1	V	0U	1	V	2U	1	V	31J	6	R	25J	5	V	3	1	V	20	5	V	1UJ	1	A	0UJ	1	A
Gross Alpha	4	0U	1	V	-1U	1	V	10	2	V	26J	5	R	22J	5	V	5	2	V	20	5	V	0UJ	1	A	0UJ	1	A
Gross Beta																												
Total Strontium																												
Total Cesium																												
Radium 228																												
Tritium																												
Uranium 234 & 233																												
Uranium 235																												
Uranium 238																												
Plutonium 239 & 240																												
Americium 241 & 242																												
Radium 226																												
Gamma scan																												
Other isotopes																												

DQ Data Qualifier
V Valid
A Acceptable with qualifications
R Rejected

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- 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)

Rockwell ER Program
Rocky Flats Plant

RADIOCHEMICAL ANALYSIS
ANALYTICAL RESULTS (pCi/L)

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SITE NAME: Rocky Flats Plant - Hillside

Sample Location	2-87		56-86		D56-86		69-86		62-86		4-87		3-87		3-87D		TB					
	3369-2-87	10/20/88	3369-56-86	10/20/88	3369-D56-86	10/20/88	3369-69-86	10/20/88	3369-62-86	10/20/88	3369-4-87	10/20/88	3369-3-87	10/20/88	3369-3-87D	10/20/88	3369-TB	10/25/88				
Matrix	Water		Water		Water		Water		Water		Water		Water		Water		Water					
Parameter	DL	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ			
Gross Alpha	2	10	2	V	1U	1	V	13	3	V	6	1	V	2U	1	V	1U	1	V	0U	1	A
Gross Beta	4	4U	2	V	2U	1	V	9	2	V	7	2	V	6	1	V	6	1	V	0U	1	A
Total Strontium	1																					
Total Cesium	1																					
Radium 228	1																					
Tritium	400																					
Uranium 234 & 233	0.6																					
Uranium 235	0.6																					
Uranium 238	0.6																					
Plutonium 239 & 240	0.01																					
Americium 241 & 242	0.01																					
Radium 226	0.05																					
Gamma scan																						
Other isotopes																						

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RADIOCHEMICAL ANALYSIS
ANALYTICAL RESULTS (pCi/L)

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SITE NAME: Rocky Flats Plant - Hillside

Sample Location	FB		9-74		10-74		8-87		8-87D		TB		FB		FBD			
	Sample Number	Sample Date																
Matrix	Water	Water																
DL																		
Parameter	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	DQ	Val.	+/-	
Gross Alpha	2	0UJ	1	A	19	4	V	9U	5	V	4U	2	V	4U	2	V	4U	2
Gross Beta	4	-1UJ	1	A	8	3	V	19	6	V	9	3	V	7U	3	V	7U	3
Total Strontium	1																	
Total Cesium	1																	
Radium 228	1																	
Tritium	400																	
Uranium 234 & 233	0.6																	
Uranium 235	0.6																	
Uranium 238	0.6																	
Plutonium 239 & 240	0.01																	
Americium 241 & 242	0.01																	
Radium 226	0.05																	
Gamma scan																		
Other Isotopes																		

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