



Quanterra
2800 George Washington Way
Richland, Washington 99352-1613

0053279

509 375-3131 Telephone
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CERTIFICATE OF ANALYSIS

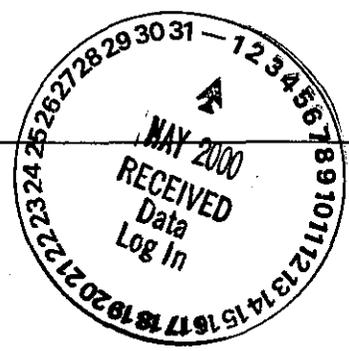
RECEIVED
JUN 26 2000
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Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

April 28, 2000

Attention: Joan Kessner

SAF Number	:	B99-014
Date SDG Closed	:	April 10, 2000
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W03144
Data Deliverable	:	7-Day / Summary



I. Introduction

On April 10, 2000, two water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9DAP4V10	B0NC21	WATER	4/10/00
9DAP4W10	B0XC22	WATER	4/10/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analysis was: **Gas Proportional Counting**
Total Strontium by method RICH-RC-5006

Bechtel Hanford, Inc.
April 28, 2000
Page 2

III. Quality Control

The analytical results for each analysis performed under SDG W03144 includes a minimum of two Laboratory Control Samples (LCS) and one method (reagent) blank. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Gas Proportional Counting

Total Strontium by method RICH-RC-5006:

The achieved MDA for sample B0XC22 does not meet the CRDL due to a reduced volume analyzed. The detected activity exceeds the achieved MDA and the data are accepted for reporting. Except as noted, the laboratory control samples, batch blank and sample results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:


Jackie Waddell
Jackie Waddell
Project Manager

Data Review Checklist
RADIOCHEMISTRY

Priority

Lot Number: JOD110000
 Client ID: BHI
 Due Date: 4/17/00
 QC Batch Number: 0102191 SDG Number: W03144
 Method Test Parameter: TOTAL SR
 Matrix: Water

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	✓			
2. Were all sample holding times met?			✓	
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			
C. QC Samples				
1. Is the blank yield within acceptance criteria?	✓			
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?		✓		
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result < the Contract Detection Limit?	✓			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?	✓			
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?			✓	
10. Do the duplicate sample results and yields meet acceptance criteria?			✓	
D. Other				
1. Are all Nonconformances included and noted? <u>To 1502</u>	✓			
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			✓

Comments on any "No" response: _____

First Level Review: [Signature]
 Second Level Review: [Signature]

Date: 4-17-00
 Date: 4/18/00

Clouseau Nonconformance Memo

SEVERN
TRENT
SERVICES

NCM #: J01502	Classification: Anomaly
NCM Initiated By: Dale OConnell	Status: CLOSED
Date Opened: 04/17/00	Production Area: Environmental - Sep
Date Closed: 04/20/00	Tests: SrTot by GPC
	Lot #'s (Sample #'s): J0D100165 (1,2)
	QC Batch: 0102191
Nonconformance: MDA not met	
Subcategory: Data accepted	

Problem Description / Root Cause

Name	Date	Description
Dale OConnell	04/17/00	Blank MDA - GPC

Corrective Action

Name	Date	Corrective Action
Dale OConnell	04/17/00	Priority Samples. All other Review Parameters within limits. Report Data.

Quality Assurance Verification

Verified By	Due Date	Status	Notes:
Jodie Carnes	N/A	Verified/completed	

Client Notification Summary

Client	Project Manager	Date Notified	Response Date	How Notified
BECHTEL HANFORD, INC.	Jackie Waddell	04/20/00	04/20/00	by narrative
	<u>Response</u>	<u>Response Details</u>		
	No response saved			

Approval History

Name	Date Approved:	Position
Dale OConnell	04/17/00	Group Leader
Jackie Waddell	04/20/00	Project Manager
Jodie Carnes	04/20/00	Quality Assurance

CHAIN OF CUSTODY

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-014-3 Page Blank of Blank

Collector P.S. Wilkerson

Company Contact Julian Laurentz Telephone No. 372-9582

Project Coordinator TRENT, SJ

Price Code ID Data Turnaround 7 Days

Project Destination 100-NR-2 Pump & Treat Operational Sampling

Sampling Location 100-NR-2

SAF No. B99-014

Air Quality

Ice Chest No.

Field Logbook No. EL-1345-1 COA R10NR2C560

Method of Shipment Govt Vehicle

Shipped To Quaterna Incorporated

Offsite Property No.

Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

SO6 WUC3144
STAD100165
Special Handling and/or Storage

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Preservation		Type of Container	No. of Containers (s)	Volume	SPECIAL INSTRUCTIONS									
				PL	2				500 ml									
BOX C 21	Water	4-10-00	0930						DAP 244									
BOX C 22	Water	4-10-00	0930						DAP 244									

CHAIN OF POSSESSION

Sign/Print Names

SPECIAL INSTRUCTIONS

Relinquished By [Signature] Date/Time 4-10-00 1030 Received By [Signature] Date/Time 4/10/00 1030

Relinquished By [Signature] Date/Time 4/10/00 1030 Received By [Signature] Date/Time 4/10/00 1030

Relinquished By [Signature] Date/Time [Blank] Received By [Signature] Date/Time [Blank]

Relinquished By [Signature] Date/Time [Blank] Received By [Signature] Date/Time [Blank]

Relinquished By [Signature] Date/Time [Blank] Received By [Signature] Date/Time [Blank]

Relinquished By [Signature] Date/Time [Blank] Received By [Signature] Date/Time [Blank]

LABORATORY SECTION Received By [Signature] Date/Time [Blank] Title [Blank]

FINAL SAMPLE DISPOSITION Disposal Method [Blank] Date/Time [Blank]

Figure 1. Sample Check-in List

Date/Time Received: 4/10/00 1415 SDG#: _____
 Work Order Number: _____ SAF#: B99-0146
 Shipping Container ID: N/A Chain of Custody #: B99-014-3

1. Outermost shipping container damaged? Yes No
2. Custody Seals on shipping container intact? Yes No
3. Custody Seals dated and signed? Yes No
4. Chain-of-Custody record present? Yes No
5. Chain-of-Custody includes the following information:
 - Client name Yes No
 - Project name or number Yes No
 - Sample date/time for each sample Yes No
 - Container types, sizes and number of containers Yes No
 - Short description of sample, i.e., matrix Yes No
 - Analyses requested Yes No
 - Preservation used or "none" or N/A if not applicable Yes No
 - Date and time of relinquish and receipt Yes No
 - Signatures of those persons relinquishing and receiving Yes No
6. Sample numbers on chain of custody match those on sample containers? Yes No
7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
8. Cooler temperature: _____ N/A
9. Vermiculite/packing materials is: Wet Dry

10. Samples have: tape hazard labels
 custody seals appropriate sample labels

11. Samples are: in good condition leaking
 broken have air bubbles

12. Were any anomalies identified in sample receipt? Yes No
13. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [Signature] Date: 4/10/00 1415
 Telephone/Fax/E-mailed to: _____ On _____ By _____

Client Sample Screening Results

② 4/10/00

10-Apr-00

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B	
BHI	B0XC21DAP4V		4/10/2000 2:40:00 PM	QUAD21C	4/10/2000 3:06:25 PM	B0XC21DAP4V	30	9	0.173333333	57	0.93	
	DAP4V	LIQUID		Bkg:	4/7/2000 1:52:53 AM	BKG	600	76	0.126666667	582	0.97	
Anl Date:	4/10/00	Tot Sa, Alq:	5.00E-01	, 1.00E+00	Alp;	(Dpm/ 4.74E-01	(uCi/ 1.07E-04	(pCV/ 2.13E+02	± 2.1E+02	CAT	1.2E-01	Lab
Ppt mg:	0	Units:	L	, ml	Bet;	Alq): 1.72E+00	Sa): 3.88E-04	L/g): 7.76E+02	± 2.3E+02	I	6.4E-02	Alq
												L/g
BHI	B0XC22DAP4W		4/10/2000 2:40:00 PM	QUAD21D	4/10/2000 3:06:25 PM	B0XC22DAP4W	30	2	-0.055	107	2.66666667	
	DAP4W	LIQUID		Bkg:	4/7/2000 1:52:53 AM	BKG	600	73	0.121666667	540	0.9	
Anl Date:	4/10/00	Tot Sa, Alq:	5.00E-01	, 1.00E+00	Alp;	(Dpm/ -2.45E-01	(uCi/ -5.53E-05	(pCV/ -1.11E+02	± 2.1E+02	CAT	5.0E-01	Lab
Ppt mg:	0	Units:	L	, ml	Bet;	Alq): 5.26E+00	Sa): 1.19E-03	L/g): 2.37E+03	± 3.1E+02	I	2.1E-02	Alq
												L/g

0013

10-Apr-00

RQC053

Parent Batch:
Associated Batches:

:
:
:

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 4/11/00
Time: 9:36:25
Page: 1

PRIORITY
Today

* QC BATCH: 0102191 *
* *****

PRIORITY
Today

W03144

TH: Total Strontium by GPC
CG: Sr-Total Prp/SepRC5006
SI: CLIENT: HANFORD

Analytical Due Date: 4/17/00
Project Manager:

Lot# Work Order	Client	Analyt Due Matrix	Client Aliquot	Name Geometry	Count	Time	Mid/Ave Date/Time	Tracer ID Spike ID	CRDL	Units	Screen Info - (Ci) Alpha Beta	PM Bin
JOD110000-191 B DAPJF-1-01 WATER Comments:		4/17/00					4/10/00 9:30		2.00E+00	pCi/L	**NA **NA	
JOD110000-191 C DAPJF-1-02 WATER Comments:		4/17/00					4/10/00 9:30		2	pCi/L	**NA **NA	
JOD110000-191 C DAPJF-1-03 WATER Comments:		4/17/00					4/10/00 9:30		2	pCi/L	**NA **NA	
JOD100165-001 DAP4V-1-01 WATER Comments:		4/17/00	.0000		.000		4/10/00 9:30			pCi/L	**NYS **NYS 44 04/00	JW2
JOD100165-002 DAP4W-1-01 WATER Comments:		4/17/00	.0000		.000		4/10/00 9:30			pCi/L	**NYS **NYS 44 04/00	JW2

80ml

Total Number of Samples In Batch: 00005

Batch Information: Dry Wt: N Decay Correct: Y Blank Sub: None Call In: ^
 Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected
 BLANK CRDL Tracer Yield Type QC Control Limits
 Strontium 90 2.00E+00 Strontium Trace (020-105)

** NYS = Not Yet Screened
 ** NA = Not Applicable
 ** Other = Other than Gross Alpha or Gross Beta
 ++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0014

COC Signature Page

W03144

Lot or Batch #: 0102191

Initials/Date

Procedure #

Released By	Initials/Date	Procedure #
Released By	SM 4/11-00	RLHRC0009
Received	SM 4-11-00	RICHRC SCOTG
Released By	SM 4-12-00	n/a
Received	CS 4/12/00	RLHRC0003K1
Released By	M 4/13/00	n/a
Received	AT 4/17/00	RadCalc v2.8.1
Released By	AT 4/17/00	n/a
Received	SM 4-17-00	RKRC0002-2
Released By	SM 4-17-00	n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		