

0053030

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CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

RECEIVED
APR 25 2000

March 22, 2000

EDMC

Attention: Joan Kessner



SAF Number	:	B99-031
Date SDG Closed	:	February 25, 2000
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W03094
Data Deliverable	:	21 Day / Summary

I. Introduction

On February 24, 2000, one water sample was received at STL Richland (STLR) for chemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9D92A610	B0XC03	WATER	2/24/00

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: **Chemical Analyses**
Chromium Hex by EPA method 7196

Bechtel Hanford, Inc.
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III. Quality Control

The analytical results for each analysis performed under SDG W03094 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in mg/L.

IV. Comments

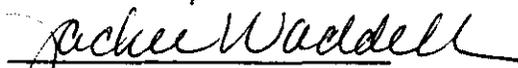
Chemical Analyses

Chromium Hex by EPA method 7196:

The LCS, batch blank, sample, sample duplicate (B0XC03) and sample matrix spike/matrix spike duplicate (B0XC03) 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
Project Manager

SAMPLE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03094 / 10136
LAB SAMPLE ID: 9D92A610 MATRIX: WATER
CLIENT ID: B0XC03 DATE RECEIVED: 2/24/2000 3:15:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	2.00E-03	U	N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results:

DUPLICATE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03094 / 10136
LAB SAMPLE ID: D92A614R MATRIX: WATER
CLIENT ID: B0XC03 DATE RECEIVED: 2/24/2000 3:15:00 P
ORIG LAB SAMPLE ID: 9D92A610

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
HEXCHROME	2.00E-03	U	N/A	N/A	2.00E-03	mg/L	N/A	EPA7196	2.00E-03	0.00%

Number of Results:

BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W03094 / 10136
LAB SAMPLE ID: D93WK11B MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	0.00E+00	U	N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03094 / 10136
LAB SAMPLE ID: D93WK12S MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
HEXCHROME	4.91E-01		N/A	N/A	2.00E-03	mg/L	N/A	5.00E-01	98.20%

Number of Results:

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03094 / 10136
LAB SAMPLE ID: D92A612W MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
HEXCHROME	4.59E-01	N/A	N/A	2.00E-03	mg/L	2.00E-03	5.26E-01	87.26%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc
rptChemRadMatrixSpike; v3.41

0008

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03094 / 10136
LAB SAMPLE ID: D92A613W MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
HEXCHROME	4.65E-01	N/A	N/A	2.00E-03	mg/L	2.00E-03	5.26E-01	88.40%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,

J = No U qualifier and result < RDL.



Richland Laboratory
Data Review Check List
METALS

Work Order Number(s): <u>D92A6</u> <u>BATCH # 0059375</u> <u>LOT JOB 250266</u>				
Lab Sample Numbers or SDG: <u>W03094</u>				
Method/Test/Parameter: <u>CR+6 IN WATER</u> <u>RICHDC5003 R.4</u>				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?			✓	✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
E. Other				
1. Are all nonconformances included and noted?			✓	✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response:

Sample required filtration & had color so color blank was subtracted.

Analyst: Y. N. Jahre

Date: 2/25/00

Second-Level Review: Roxie Ross

Date: 3/3/00

CHAIN OF CUSTODY

0-27023

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				Page 1 of 1	
Collector RT FAHLBERG	Company Contact JASON ADLER	Telephone No. 373-4316	Project Coordinator SJ TREAT	Price Code 7L	Data Turnaround		
Project Designation 105F & 105 DR LWTF SAMPLING	Sampling Location 105 DR	SAF No. B99-031	Air Quality <input type="checkbox"/>	21 day lat per Juddell. JH			
Ice Chest No. ERC-97-079	Field Logbook No. EL1424	COA R10SD02FOC	Method of Shipment HAND DELIVER GOVT. VEH.				
Shipped To QUANTERRA INC	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A				2-25-1	
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage Cool to 4 degrees C.	Preservation	COOL 4°C					
	Type of Container	P					
	No. of Container(s)	1					
	Volume	1L					
SDX W03094		SAMPLE ANALYSIS JOB 2502ldo		Due 3-17-00	7196	HEX CR	
Sample No.	Matrix *	Sample Date	Sample Time				
BOXCO3	W	2-24-00	1130	X	D92 AL6	BOXPO4	
CHAIN OF POSSESSION			SPECIAL INSTRUCTIONS		Matrix *		
Relinquished By R. Kelly	Date/Time 12/15	Received By Brian Krentz	Date/Time 12/15			S-Soil SE-Sediment SO-Solid S-Sludge W-Water O-Oil A-Air DS-Dry Solids DL-Dry Liquids T-Tissue W-Wipe L-Liquid V-Vegetation X-Other	
Relinquished By	Date/Time	Received By	Date/Time				
Relinquished By	Date/Time	Received By	Date/Time				
Relinquished By	Date/Time	Received By	Date/Time				
Relinquished By	Date/Time	Received By	Date/Time				
LABORATORY SECTION	Received By Brian Krentz	Title	Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time				

0013

ERC Radiological Counting Facility
 Sample Activity Report - Gross Alpha/Beta

RCF7282

Sample Run ID: LB55 1.5min Unk 4-in Pu-Sr - 200002241225 Project/Cust. ID: 105DR BOXPO4
 Machine LB5500 Report Date: Thursday, February 24, 2000 SAF # B00-027

Sample ID	Carrier	Sample Type	Sample Volume/Mass	Acquisition Date/Time
20000224122535	1	20mL Vial	18 ml	2/24/00 12:41:03 PM

Net Alpha cpm	Alpha dpm	Alpha dpm 2 sigma	Alpha Bkgd cpm	Net Beta cpm	Beta dpm	Beta dpm 2 sigma	Beta Bkgd cpm
1324.569	3694.853	1244.468	1.014	25112.452	49915.219	623.000	5.825

MDA (dpm)

Alpha	Beta
1340.533	25179.781

Beta Efficiency: 50.28%
 Alpha Efficiency: 34.25%

Total Beta 1250 pCi/ml

Total Alpha 93 pCi/ml

1250 800 pCi - Sr-90

- 330 - Cs-137

- 60 - Co-60

- 60 - K-40

- 800 pCi/ml Sr-90
 330 pCi/ml Cs-137
 60 " Co-60
 200 pCi/ml K-40
 26 pCi/ml K-40
 93 pCi/ml Ra/Am

TOTAL 1509 pCi/g

Samples Analyzed By: CA JZ Date: 2/24/00
 Samples Reviewed By: _____ Date: _____

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 2/24/00 SG#: W03094
 Work Order Number: JOB 250266 SAF #: B99-031
 Shipping Container ID: ERC 97 079 Chain of Custody #: NA

1. Custody Seals on shipping container intact? Yes No
2. Custody Seals dated and signed? Yes No
3. Chain-of-Custody record present? Yes No
4. Cooler temperature 40
5. Vermiculite/packing materials is Wet Dry
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? Yes No

8.	Samples have:	<input checked="" type="checkbox"/> tape	<input checked="" type="checkbox"/> hazard labels	<input checked="" type="checkbox"/> appropriate sample labels
		<input checked="" type="checkbox"/> custody seals		

9.	Samples are:	<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking	<input type="checkbox"/> have air bubbles
		<input type="checkbox"/> broken		

10. Where any anomalies identified in sample receipt? Yes No
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Vaughn L. Marshall Date: 2-24-00

Telephoned To: _____ On _____ By _____

COC Signature Page

Lot or Batch #: 0059375

Initials/Date

Procedure #

Released By

RM 2-25-00

Richc0009

Received

2/25/00 M.J.

RICHWC 5003 R4

Released By

3/2/00 M.J.

n/a

Received

Released By

n/a

Received

RQC050

Quanterra Incorporated
WET CHEM BATCHSHEET
Richland

Run Date: 2/28/00
Time: 16:45:50

PRODUCTION FIGURES - WET CHEM

TOTAL NUMBER	SAMPLE NUMBER	QC	RE-RUN MATRIX	RE-RUN OTHER	MISC NUMBER	TOTAL HOURS	EXPANDED DELIVERABLE
METHOD: EA Hexavalent Chromium 6A)							
QC BATCH #: 0059375 INITIALS:							
PREP DATE: 2/25/00 PREP _____ DATA ENTRY: INITIALS _____							
USER: ROSSR ANAL _____ DATE _____							

Work Order	Lab Number	Structured Analysis	Exp. Del.	Analysis Date	Sample ID:
D92A6-1-01	J-0B250266-001	XX I 88 EA 5I		_____	BOXC03
D92A6-1-03	J-0B250266-001-D	XX I 88 EA 5I		_____	BOXC03
D92A6-1-02	J-0B250266-001-S	XX I 88 EA 5I		_____	BOXC03
D92A6-1-04	J-0B250266-001-X	XX I 88 EA 5I		_____	BOXC03 DUP
D93WK-1-01	J-0B280000-375-B	XX I 88 EA 5I		_____	INTRA-LAB BLANK
D93WK-1-02	J-0B280000-375-C	XX I 88 EA 5I		_____	INTRA-LAB CHECK

Control Limits

(85-115)
(85-115)
(85-115)

0017