W02679-QES

Quanterra

0050836

CERTIFICATE OF ANALYSIS

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

MAR 1999
RECEIVED
Data
Log In

March 8, 1999

Attention: Joan Kessner

SAF Number	:	B99-022
Date First Sample Received	:	February 9, 1999
Number of Samples	:	Three
Sample Type	:	Water
SDG Number	:	W02679
Data Deliverable	:	~~3-Day Priority/15 Day Summary~~ 45 Day Summary

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DAynes
3/9/99

I. Introduction

On February 9, 1999, three water samples were received by the Quanterra Environmental Services Richland Laboratory (QESRL) for chemical analysis. Sample B0TK67 was reanalyzed upon client request and added to this batch. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

QESRL ID#	BHI ID#	MATRIX	DATE OF RECEIPT
9CQM4710	B0TRH3	Water	2/9/99
9CQM4910	B0TRH5	Water	2/9/99
9CQM4A10	B0TRH7	Water	2/9/99

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: **Hexavalent Chromium**
Hexavalent Chromium by EPA7196

III. Quality Control

The analytical results for the analysis performed under SDG W02679nclude a minimum of one Laboratory Control Sample (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and one method (reagent) blank. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in the same units as sample results.

IV. Comments

Hexavalent Chromium
Hexavalent Chromium by EPA7196

The LCS, MS, MSD, batch blank, and sample results are within the requirements of the contract.

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:

Doug Swenson
Project Manager

Quanterra

SAMPLE RESULTS

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	W02679 / 7051
LAB SAMPLE ID:	9CQM4710	**MATRIX:**	WATER
CLIENT ID:	B0TRH3	**DATE RECEIVED:**	2/9/99 11:05:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	1.57E-01		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results: 1

0004

Result = IDL When Not Detected

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

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra

SAMPLE RESULTS

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	W02679 / 7051
LAB SAMPLE ID:	9CQM4910	**MATRIX:**	WATER
CLIENT ID:	B0TRH5	**DATE RECEIVED:**	2/9/99 11:05:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	1.31E-01		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results: 1

0005

Result = IDL When Not Detected

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

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rptChemRadSample; v3.41

Quanterra

SAMPLE RESULTS

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	W02679 / 7051
LAB SAMPLE ID:	9CQM4A10	**MATRIX:**	WATER
CLIENT ID:	B0TRH7	**DATE RECEIVED:**	2/9/99 11:05:00 AM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	3.00E-03		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results: 1

0006

Result = IDL When Not Detected

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

Quanterra Analytical Services, Inc.
rptChemRadSample; v3.41

Quanterra

DUPLICATE RESULTS

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	W02679 / 7051
LAB SAMPLE ID:	JCQM4A1R	**MATRIX:**	WATER
CLIENT ID:	B0TRH7	**DATE RECEIVED:**	2/9/99 11:05:00 AM
ORIG LAB SAMPLE ID:	9CQM4A10		

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
HEXCHROME	3.00E-03		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196	3.00E-03	0.00%

Number of Results: 1

0007

Result = IDL When Not Detecte

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

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

BLANK RESULTS

LAB NAME: QUANTERRA, Richland **SDG /RPT GRP:** W02679 / 7051

LAB SAMPLE ID: JCQMAK1B **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: 1

0008

Result = IDL When Not Detected

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

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

LABORATORY CONTROL SAMPLE

LAB NAME:	**QUANTERRA, Richland**	**SDG: /RPT GRP:**	W02679	/ 7051
LAB SAMPLE ID:	JCQMAK1S	**MATRIX:**	WATER	

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
HEXCHROME	4.94E-01		N/A	N/A	2.00E-03	mg/L	N/A	5.00E-01	98.80%

Number of Results: 1

0005

Result = IDL When Not Detecte

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

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

MATRIX SPIKE RESULTS

LAB NAME:	QUANTERRA, Richland	**SDG: /RPT GRP:**	W02679	/ 7051
LAB SAMPLE ID:	JCQM4A1W	**MATRIX:**	WATER	

ANALYTE	SPIKE RESULT*	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
HEXCHROME	5.30E-01		N/A	N/A	2.00E-03	mg/L	3.00E-03	5.30E-01	100.00%

Number of Results: 1

0010

*Spike Result Corrected For Sample Result

Result = IDL When Not Detecte

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

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rptChemRadMatrixSpike; v3.41

Quanterra

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland **SDG: /RPT GRP:** W02679 / 7051

LAB SAMPLE ID: JCQM4A2W **MATRIX:** WATER

ANALYTE	SPIKE RESULT*	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
HEXCHROME	5.30E-01		N/A	N/A	2.00E-03	mg/L	3.00E-03	5.30E-01	100.00%

Number of Results: 1

0011

*Spike Result Corrected For Sample Result

Result = IDL When Not Detecte

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

Quanterra Analytical Services, Inc

rptChemRadMatrixSpike; v3.41

Quanterra

Richland Laboratory
Data Review Check List
METALS

Work Order Number(s): 9040437				
Lab Sample Numbers or SDG: W02679				
Method/Test/Parameter: CRH6 in Water				
Review Item	**Yes (✓)**	**No (✓)**	**N/A (✓)**	**2nd Level Review (✓)**
A. Initial Calibration				
1. Performed at required frequency wih 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?			✓	

0012

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd 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:

Analyst: Rorie Ross Date: 2/10/99

Second-Level Review: _____ Date: _____

Form No. CG-191, Rev. 2, 1/97

CHAIN OF

CUSTODY FORMS

Q-2-1012

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-022-07	Page 1 of 1

Collector Renee Nielson / Doug Bowers	**Company Contact** Bill McMahon	**Telephone No.** 375-9434	**Project Coordinator** TRENT, SJ	**Price Code**	**Data Turnaround** 45 Days
Project Designation 100-KR-4 Treatment System - Operational Sampling FY 19	**Sampling Location** 100 KR-4		**SAF No.** B99-022		
Ice Chest No. ERC 96-033	**Field Logbook No.** EL-1381-1		**Method of Shipment** hand deliver		
Shipped To Quanterra Incorporated	**Offsite Property No.**		**Bill of Lading/Air Bill No.**		
			COA		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
Cool 4C

Preservation	None	Cool 4C										
Type of Container	P	P										
No. of Container(s)	1	1										
Volume	20mL	500mL										
	Activity Scan	Chromium Hex - 7196										

SDG
W02679

SAMPLE ANALYSIS
J9B090151

Sample No.	Matrix *	Sample Date	Sample Time										
B0TRH3 9CQM4710	Water	2-9-99	0920	X	X								
B0TRH5 9CQM4910	Water	2-9-99	0925	X	X								
B0TRH7 9CQM4A10	Water	2-9-99	0936	X	X								

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers / Doug Bowers	2-9-99/1105	Karen [illegible]	2-9-99 1105

SPECIAL INSTRUCTIONS
** All samples being sent to an off-site laboratory and requesting Hex Cr WILL be sent to Quanterra.
** Cr VI holding times MUST BE MET. Sample Management must be contacted immediately if they are missed.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. [illegible]
[illegible]
CCN: N/A
OD: N/A
TSD: N/A
ERA: N/A
Subject Code: [illegible]

TO:	W. S. Thompson	N1-28	DATE:	February 29, 1996
	G. C. Henckel	H4-80		
COPIES:	K. A. Smith	X0-23	FROM:	S. K. De Mers
	T. L. Lafreniere	X0-23		Radiological Controls
	D. E. Gergely	X0-23		T7-05/373-1913

SUBJECT: **Total Activities for Off-Site Shipments of Groundwater Samples to NRC License Laboratories**

There is no need to perform total activities prior to offsite shipment to NRC licensed labs samples taken from ground water wells located on the Hanford Site.

All wells reviewed to date for radiological content have shown no well with a total activity excess of 2,000,000 pCi/l (2,000 pCi/gm), the Department Of Transportation limit for radioactiv material. The highest activity in any known well is 1.56 X 10^6 pCi/l H^3.

While this does not constitute any release from radiological controls for worker protection, it doe allow samples to be shipped based on historical laboratory data and save the expense of doir radiochemical analysis.

A copy of the most recent analytical data should be provided to the NRC licensed laboratory wi the samples being shipped or if no data is available for new wells, the most recent data from adjace wells.

Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 2-9-99 1105 SG#: W02679

Work Order Number: J9B090151 SAF #: B99-022

Shipping Container ID: ERC96-033 Chain of Custody # B99-022-07

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 4°C
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 6
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

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

Sample Custodian/Laboratory: K. [illegible] Date: 2-9-99

Telephoned To: _____ On _____ By _____

Client Sample Screening Results

10-Feb-99

3 2/10/99

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0TRH3		2/9/99 11:21:00 AM	QUAD21C	2/9/99 3:03:33 PM	B0TRH3	30	60	1.909859155	180	4.77746479
	LIQUID		Bkg:	2/9/99 3:51:32 AM	BKG	710	64	0.090140845	868	1.22253521

Anl Date: 2/10/99 Tot Sa, Alq: 5.00E-01 , 1.00E+01 Alp; (Dpm/ 5.52E+00 (uCi/ 1.24E-04 (pCi/ 2.49E+02 + 3.7E+01 CAT 1 3.0E-01 Lab
Ppt mg: 1.5 Units: L , ml Bet; Alq): 8.30E+00 Sa): 1.87E-04 Lig): 3.74E+02 + 3.8E+01 1.3E-01 Alq Lig

BHI B0TRH5		2/9/99 11:21:00 AM	QUAD21D	2/9/99 3:03:11 PM	B0TRH5	30	32	0.994835681	116	2.71596244
	LIQUID		Bkg:	2/9/99 3:51:32 AM	BKG	710	51	0.071830986	817	1.15070423

Anl Date: 2/10/99 Tot Sa, Alq: 5.00E-01 , 1.00E+01 Alp; (Dpm/ 2.99E+00 (uCi/ 6.73E-05 (pCi/ 1.35E+02 + 3.1E+01 CAT 1 1.9E-01 Lab
Ppt mg: 0.4 Units: L , ml Bet; Alq): 4.75E+00 Sa): 1.07E-04 Lig): 2.14E+02 + 3.1E+01 2.3E-01 Alq Lig

BHI B0TRH7		2/9/99 11:21:00 AM	QUAD22A	2/9/99 3:03:15 PM	B0TRH7	30	42	1.322535211	136	3.33896714
	LIQUID		Bkg:	2/9/99 3:51:37 AM	BKG	710	55	0.077464789	848	1.1943662

Anl Date: 2/10/99 Tot Sa, Alq: 5.00E-01 , 1.00E+01 Alp; (Dpm/ 3.73E+00 (uCi/ 8.39E-05 (pCi/ 1.68E+02 + 3.1E+01 CAT 1 1.5E-01 Lab
Ppt mg: 1.1 Units: L , ml Bet; Alq): 5.42E+00 Sa): 1.22E-04 Lig): 2.44E+02 + 3.1E+01 2.0E-01 Alq Lig

COC Signature Page

Batch #: 9040437	Initials/Date	Procedure #
Released By	KH 2-9-99	RichRC0009
Received	R 2/9/99	RICHWC5003 R.2
Released By	R 2/9/99	n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		

RC-131, Rev.0, 8/98