

0053542

Quanterra
 2800 George Washington Way
 Richland, Washington 99352-1613

509 375-3131 Telephone
 509 375-5590 Fax

CERTIFICATE OF ANALYSIS

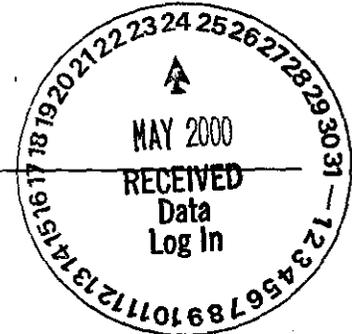
RECEIVED
 AUG 17 2000

EDMC

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

May 22, 2000

Attention: Joan Kessner



SAF Number	:	B99-023
Date SDG Closed	:	May 15, 2000
Number of Samples	:	Three (3)
Sample Type	:	Water
SDG Number	:	W03174
Data Deliverable	:	45 Day / Summary

I. Introduction

On May 15, 2000, three water samples were received at STL Richland (STLR) for chemical 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>
9DD7DN10	B0Y427	WATER	5/15/00
9DD7DP10	B0Y428	WATER	5/15/00
9DD7DQ10	B0Y429	WATER	5/15/00

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

III. Quality Control

The analytical results for each analysis performed under SDG W03174 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

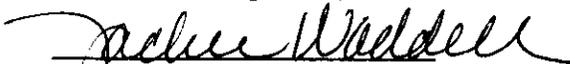
Chemical Analyses

Chromium Hex by EPA method 7196:

The LCS, batch blank, sample, sample duplicate (B0Y427) and sample matrix spike/matrix spike duplicate (B0Y427) 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

DUPLICATE RESULTS

LAB NAME: STL Richland **SDG: /RPT GRP:** W03174 / 10527
LOT,RPT DB ID: - DD7DN14R **MATRIX:** WATER
CLIENT ID: B0Y427 **DATE RECEIVED:** 5/15/2000 3:00:00 P
ORIG LAB ID: 9DD7DN10

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
HEXCHROME	4.20E-02		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196	4.20E-02	0.00%

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland

SDG /RPT GRP: W03174 / 10527

LOT,RPT DB ID: - DD7EC11B

MATRIX: WATER

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

Number of Results:



Richland Laboratory
Data Review Check List
METALS

Work Order Number(s): DD7DN, DD7DP, DD7DQ BATCH# D136402 LOT# JOE150169

Lab Sample Numbers or SDG: WO 3174

Method/Test/Parameter: CR+6 IN WATER RICHWC 5D03 R.4

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 \leq 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 \leq 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?			✓	✓

CHAIN OF CUSTODY

lx-21008

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B99-023-23	Page 1 of 1
Collector Johansen/Bacchler	Company Contact W McMahon	Telephone No. 375-9434	Project Coordinator TRENT, SJ		Price Code 7N	Data Turnaround 45 Days
Project Designation 100-HR-3 Treatment System - Operational Sampling		Sampling Location 100HR-3	SAF No. B99-023		Air Quality <input type="checkbox"/>	
Ice Chest No. ERC 99.033	Field Logbook No. EL 1516	COA R10HR3C560	Method of Shipment Hand Delivered			
Shipped To Severn Trent Incorporated		Offsite Property No.		Bill of Lading/Air Bill No.		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	Cool 4C									
	Type of Container	P	P									
	No. of Container(s)	1	1									
	Special Handling and/or Storage	Volume	20mL	500mL								

SDG
W03174
SAMPLE ANALYSIS
JOE1501689

Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan	Chromium Hex - 7196							
BOY427 DD7DN	Water	5/15/00	1129	X	X							
BOY428 DD7DP	Water	5/15/00	1145	X	X							
BOY429 DD7DQ	Water	5/15/00	1158	X	X							

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By M.G. Dwiner	Date/Time 5/15/00 1415	Received By D. Gale	Date/Time 5/15/00 1415
Relinquished By D. Gale	Date/Time 5/15/00 1500	Received By K. Marshall	Date/Time 5/15
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
 ** Cr VI holding times MUST BE MET. Sample Management must be contacted immediately if they are missed.
 SAMPLES COLLECTED FROM AN AREA < 2000' C/D

Matrix *
 S=Soil
 SE=Settles
 SO=Solid
 S=Sludge
 W=Water
 O=Oil
 A=Air
 DS=Drum Solids
 DL=Drum Liquids
 T=Thane
 WI=Wipe
 L=Liquid
 V=Vegetation
 X=Other

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

Figure 1. Sample Check-in List

Date/Time Received: 5-15-00 1500 SDG#: W03174
Work Order Number: JOE150169 SAF#: B99-023
Shipping Container ID: ERC 99-033 Chain of Custody #: B99-023-23

- 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? (6) Yes No
- 7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
- 8. Cooler temperature: 4°
- 9. Vermiculite/packing materials is: Wet Dry

10. Samples have: <u> </u> tape <u> </u> hazard labels <u> </u> custody seals <u> </u> appropriate sample labels	
11. Samples are: <u> </u> in good condition <u> </u> leaking <u> </u> broken <u> </u> have air bubbles	

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

Sample Custodian/Laboratory: Scott Leibel Date: 5-15-00 1500
Telephone/Fax/E-mailed to: _____ On _____ By _____

Client Sample Screening Results

16-May-00

(P) 5/16/00

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B			
BHI	B0Y427DD7DN		5/16/2000 8:39:00 AM	QUAD22D	5/16/2000 1:38:41 PM	B0Y427DD7DN	30	7	0.165	61	0.655			
	DD7DN	LIQUID		Bkg:	5/16/2000 2:38:12 AM	BKG	600	41	0.068333333	827	1.37833333			
Anl Date:	5/16/00	Tot Sa, Alq:	5.00E-01	, 1.00E+01	Alp; (Dpm/	4.88E-01	(uCI/	1.10E-05	(pCI/	2.20E+01	+ 2.5E+01	CAT	1.1E+00	Lab
Ppt mg:	2.8	Units:	L	, ml	Bet; Alq):	1.14E+00	Sa):	2.57E-05	Ljg):	5.13E+01	+ 2.2E+01	I	9.7E-01	Alq Ljg
BHI	B0Y428DD7DP		5/16/2000 8:39:00 AM	QUAD23A	5/16/2000 1:38:43 PM	B0Y428DD7DP	30	5	0.09	44	0.52			
	DD7DP	LIQUID		Bkg:	5/16/2000 2:38:21 AM	BKG	600	46	0.076666667	568	0.94666667			
Anl Date:	5/16/00	Tot Sa, Alq:	5.00E-01	, 1.00E+01	Alp; (Dpm/	2.57E-01	(uCI/	5.79E-06	(pCI/	1.16E+01	+ 2.0E+01	CAT	2.2E+00	Lab
Ppt mg:	3	Units:	L	, ml	Bet; Alq):	9.35E-01	Sa):	2.11E-05	Ljg):	4.21E+01	+ 1.9E+01	I	1.2E+00	Alq Ljg
BHI	B0Y429DD7DQ		5/16/2000 8:39:00 AM	QUAD23B	5/16/2000 1:38:43 PM	B0Y429DD7DQ	30	3	-0.01	37	0.30666667			
	DD7DQ	LIQUID		Bkg:	5/16/2000 2:38:21 AM	BKG	600	66	0.11	556	0.92666667			
Anl Date:	5/16/00	Tot Sa, Alq:	5.00E-01	, 1.00E+01	Alp; (Dpm/	-3.86E-02	(uCI/	-8.69E-07	(pCI/	-1.74E+00	+ 2.0E+01	CAT	5.0E-01	Lab
Ppt mg:	2.3	Units:	L	, ml	Bet; Alq):	5.92E-01	Sa):	1.33E-05	Ljg):	2.66E+01	+ 1.8E+01	I	1.9E+00	Alq Ljg

0017

16-May-00

RQC050

Severn Trent Laboratories, Inc.
WET CHEM BATCHSHEET

Run Date: 5/15/00
Time: 16:50:01

PRODUCTION FIGURES - WET CHEM

TOTAL NUMBER	SAMPLE NUMBER	QC	RE-RUN MATRIX	RE-RUN OTHER	MISC NUMBER	TOTAL HOURS	EXPANDED DELIVERABLE
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METHOD:	EA Hexavalent Chromium	6A)					
QC BATCH #:	0136402	INITIALS:				DATA ENTRY:	
PREP DATE:	5/15/00	PREP				INITIALS	
USER:	ROSSR	ANAL				DATE	

Work Order	Lab Number	Structured Analysis	Exp. Del.	Analysis Date	Sample ID:
DD7EC-1-01	J-0E150000-402-B	XX I 88 EA 5I			INTRA-LAB BLANK
DD7EC-1-02	J-0E150000-402-C	XX I 88 EA 5I			INTRA-LAB CHECK
DD7DN-1-01	J-0E150169-001	XX I 88 EA 5I			BOY427
DD7DN-1-03	J-0E150169-001-D	XX I 88 EA 5I			BOY427
DD7DN-1-02	J-0E150169-001-S	XX I 88 EA 5I			BOY427
DD7DN-1-04	J-0E150169-001-X	XX I 88 EA 5I			BOY427 DUP
DD7DP-1-01	J-0E150169-002	XX I 88 EA 5I			BOY428
DD7DQ-1-01	J-0E150169-003	XX I 88 EA 5I			BOY429

Control Limits

(85-115)

(85-115)

(85-115)

0018

COC Signature Page

Lot or Batch #:	Initials/Date	Procedure #
0136402		
Released By	<u>AAA 5/15/00</u>	<u>RichRC0009</u>
Received	<u>M.J. 5/15/00</u>	<u>RICHWC 5003 R.4</u>
Released By	<u>M.J. 5/16/00</u>	<u>n/a</u>
Received		
Released By		<u>n/a</u>
Received		
Released By		<u>n/a</u>
Received		
Released By		<u>n/a</u>
Received		
Released By		<u>n/a</u>
Received		
Released By		<u>n/a</u>
Received		