START 9613444.0598

0044204

W0840

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

JUN 1996 RECEIVED EDMC

JAN 1996 RECEIVED Data Log In

Bechtel Hanford Incorporated
P.O. Box 1970
Richland, Washington 99352

January 18, 1996

Attention: Joan Kessner

Project number	:	550.76
Date Received by Lab	:	December 11 & 18, 1995
Number of Samples	:	Four (4)
Sample Type	:	Water
SDG Number	:	W0840
Data Deliverable	:	Summary

I. Introduction

On December 11 & 18, 1995, four (4) water samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the specific client ID's:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
9978-001	B0GRN5	51212201	Water	12/11/95
9978-002	B0GRN6	51212202	Water	12/11/95
10020-001	B0GZ54	51221901	Water	12/18/95
10020-002	B0GZ55	51221902	Water	12/18/95

II. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Quanterra
Environmental Services

Analyses requested: Chromium by EPA method 218.2. Hexavalent Chromium by EPA method 7196 was performed by QTESRL. The data is included in this package.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. Matrix Spike and Matrix Spike Duplicate were performed per the protocol for the Chromium analysis in this SDG.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

V. Comments

The Matrix Spike and Matrix Spike Duplicate recoveries were outside of suggested control limits, but the sample concentration was greater than four times the spike level and therefore the poor recoveries do not necessarily reflect poor method performance.

Quanterra
Environmental Services

I certify that this data package 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:

Wade H. Price
Project Manager
e:\\price$\abbydave\hanw0840.nar

Quanterra December 13, 1995 08:52 am
Account: 10722 Project: 550.76 Quanterra-Richland QAS No. 933 Rev. 0
Master Sample Login: 9978

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: [signature] PM Review: [signature]

Sample Header Template:

Sample No. / # Comments / Container Type	Client ID	Analysis	C-Matrix	Date: Collected / Class	Preservative	Received / Anal. Due Date	Due / Hold Date	Shipper / Site	Rad Category	Rad Sample No. / (Container Numbers:% Filled)
9978-001	BOGRN5		Water	08-DEC-95 10:23		11-DEC-95 10:15	15-JAN-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 51212201										
1 AN - Amber Glass-500ml		CR/218.2/Q4		S	HNO3	08-JAN-96	05-JUN-96	T4B		(201441:100)
9978-001MS	BOGRN5		Water	08-DEC-95 10:23		11-DEC-95 10:15	15-JAN-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 51212201										
1 AN - Amber Glass-500ml		CR/218.2/Q4		S	HNO3	08-JAN-96	05-JUN-96	T4B		(201441:100)
9978-001MSD	BOGRN5		Water	08-DEC-95 10:23		11-DEC-95 10:15	15-JAN-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 51212201										
1 AN - Amber Glass-500ml		CR/218.2/Q4		S	HNO3	08-JAN-96	05-JUN-96	T4B		(201441:100)
9978-002	BOGRN6		Water	08-DEC-95 10:29		11-DEC-95 10:15	15-JAN-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 51212202										
1 AN - Amber Glass-500ml		CR/218.2/Q4		S	HNO3	08-JAN-96	05-JUN-96	T4B		(201442:100)

9613444.0601

00004

3*=Sample has not been rad screened.

Chain of Custody Record

To: St Louis

Quanterra Environmental Services

QUA-4124-1

Client	Project Manager	Date	Chain Of Custody Number
Bechtel Hanford	Van Pettey	12-11-95	43729
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact

Project Name: SAF B96-035

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): SEE COC

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis	Special Instructions/ Conditions of Receipt
51212201 BOGRN5	SEE				COC								
↓ 02 ↓ RN6													

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal: ☑ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other _____

QC Requirements (Specify): SDG W0840

	Date	Time		Date	Time
1. Relinquished By: Heidelberg Quanterra	12-11-95	16:00	1. Received By: Marvin Nelson	12-12-95	8:50
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - [illegible]

00005

2090 "4445196

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround
☐ Priority
■ Normal

Collector K. Trapp	Company Contact B. D. Blumenkranz	Telephone (509) 372-9658
Project Designation 100-HR-3 Pump and Treatment	Sampling Location 100-HR-3 Pump and Treat	SAF No. B96-035
Ice Chest No. EC-210	Field Logbook No. EF-1144-2	Method of Shipment Hand Delivered
Shipped To Quanterra	Offsite Property No. NA PH-1	Bill of Lading/Air Bill No. NA

Possible Sample Hazards/Remarks	Preservation	HNO_3	Cool 4°C	None
	Type of Container	P	P/G	P
	No. of Container(s)	1	1	1
Special Handling and/or Storage Maintain samples between 2°C and 6°C	Volume	500mL	500mL	20mL
SAMPLE ANALYSIS 512122 SDX W0840		Chromium - Total	Chromium VI 512123	Activity Scan

Sample No.	Matrix*	Date Sampled	Time Sampled	Chromium - Total	Chromium VI	Activity Scan
BOGRN5 01	W	12/8/95	1023	X	X	X
BOGRN6 02	W	12/8/95	1029	X	X	X
				100%		
				60%		

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: K. Trapp / K. Trapp, Date/Time 0925 12/11/95	Received By: EAL, Date/Time 0925, Bukstra 12-11-95	
Relinquished By: EAL, Date/Time 10:15, Bukstra 12-11-95	Received By: Karin Ackenburg, Date/Time 10:15, 12-11-95	
Relinquished By, Date/Time	Received By, Date/Time	
Relinquished By, Date/Time	Received By, Date/Time	

SPECIAL INSTRUCTIONS
See Chain 100 CPM
10:15 pH 7

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

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

00006

9612111.0803

M M Fordy
12/11/95

Client Sample Screening Results

11-Dec-95

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
WHC B0GRN5		12/11/95 11:00:00 AM	QUAD21D	12/11/95 2:49:17 PM	B0GRN5	30	15	0.4335	65	1.2681667
	LIQUID		Bkg:	12/10/95 1:00:25 AM	BKG	2000	133	0.0665	1797	0.8985
Anl Date: 12/11/95	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp;	(Dpm/ 1.36E+00	(uCi/ 6.13E-05	(pCi/ 6.13E+01	± 2.5E+01	CAT I	4.1E-01	Lab
Ppt mg: 4	Units: L	, ml	Bet;	Alq): 2.26E+00	Sa): 1.02E-04	L|g): 1.02E+02	± 2.3E+01		4.9E-01	Alq L|g
WHC B0GRN6		12/11/95 11:00:00 AM	QUAD22A	12/11/95 2:49:21 PM	B0GRN6	30	8	0.20616667	62	1.0796667
	LIQUID		Bkg:	12/10/95 1:00:38 AM	BKG	2000	121	0.0605	1974	0.987
Anl Date: 12/11/95	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp;	(Dpm/ 5.93E-01	(uCi/ 2.67E-05	(pCi/ 2.67E+01	± 2.2E+01	CAT I	9.4E-01	Lab
Ppt mg: 4	Units: L	, ml	Bet;	Alq): 1.90E+00	Sa): 8.57E-05	L|g): 8.57E+01	± 2.2E+01		5.8E-01	Alq L|g
WHC TEDF1208951		12/11/95 11:00:00 AM	QUAD22B	12/11/95 2:49:21 PM	TEDF1208951	30	6	0.134	43	0.5078333
	LIQUID		Bkg:	12/10/95 1:00:38 AM	BKG	2000	132	0.066	1851	0.9255
Anl Date: 12/11/95	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp;	(Dpm/ 3.99E-01	(uCi/ 1.80E-05	(pCi/ 1.80E+01	± 2.1E+01	CAT I	1.4E+00	Lab
Ppt mg: 1.7	Units: L	, ml	Bet;	Alq): 8.86E-01	Sa): 3.99E-05	L|g): 3.99E+01	± 1.9E+01		1.3E+00	Alq L|g
WHC TEDF1211951		12/11/95 11:00:00 AM	QUAD22C	12/11/95 2:49:21 PM	TEDF1211951	30	4	0.06933333	27	0.0045
	LIQUID		Bkg:	12/10/95 1:00:38 AM	BKG	2000	128	0.064	1791	0.8955
Anl Date: 12/11/95	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp;	(Dpm/ 2.08E-01	(uCi/ 9.36E-06	(pCi/ 9.36E+00	± 1.9E+01	CAT I	2.7E+00	Lab
Ppt mg: 1.5	Units: L	, ml	Bet;	Alq): -3.52E-02	Sa): -1.58E-06	L|g): -1.58E+00	± 1.5E+01		1.0E+00	Alq L|g

9613444.0604

00007

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required:
CCN: N/A
OCD: [illegible]
TSD: N/A
ERA: N/A
Subject Code: [illegible]

TO: Dave Blumenkranz H4-90 DATE: April 26, 1995

COPIES: Doug Bowers N3-05 FROM: Mike Wesselman
Radiological Controls
N3-06/376-2084

Post-it® Fax Note 7671	Date 5/1	# of pages ▶ 1
To D. Bowers	From D. Blumenkranz	
Co./Dept. ITH/Samp.	Co. CHI/E&S	
Phone # 376-1007	Phone # 372-9658	
Fax # 376-5991	Fax #	

SUBJECT: **EXEMPTION OF SAMPLES FROM 100-HR-3 PUMP AND TREAT FROM TOTAL ACTIVITY ANALYSIS.**

After reviewing sampling data recorded on GeoDat as well as data from the latest resin change at the unit, it has been concluded that there is no need to perform total activity analysis of water sample from 100-HR-3 prior to offsite shipment. Water from all wells in the area is well below levels which would deliver 100 millirem per year CEDE to any one drinking two liters a day, no water exceeds the 2000 picocurie per gram limit for shipment as non radioactive by Department of Transportation. Activity trends in all wells have been downward for the last twenty years. Sample from the pump and treat system itself indicate less than six picocuries per gram of tritium and less than ten picocuries per liter of both alpha and beta contamination. All discharges of radioactive material to the ground in the 100-D Area have ceased, the actions of the pump and treat system do not appear to be mobilizing previously deposited materials. Based on the above information and the results of total activities performed to date, there is sufficient process knowledge to conclude that preshipment screening of water samples is no longer required.

Mike Wesselman

maw

Distribution

9613444.0606

Figure 1

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 12-11-95 10:15 Client Name BHI

Project/Client # B96-035 Batch or Case # _____

Cooler ID (if noted on outside of cooler) ER-210

1. Condition of shipping container? O.K.
2. Custody Seals on cooler intact? Yes [X] No [ ]
3. Custody Seals dated and signed? Yes [X] No [ ]
4. Chain of Custody record is taped on inside of cooler lid? Yes [ ] No [X]
5. Vermiculite/packing material is: Wet [X] Dry [ ] _____
6. Each sample is in a plastic bag? Yes [X] No [ ] _____
7. Number of sample containers in cooler: 6
8. Samples have:
   - X tape
   - X custody seals
   - ___ hazard labels
   - ___ appropriate sample labels
9. Samples are:
   - X in good condition
   - ___ broken
   - ___ other
   - ___ leaking
   - ___ have air bubbles
10. Coolant Present? Yes [X] No [ ] Sample Temperature 4°C
11. The following paperwork should be accounted for (N/A if not applicable):
    - Chain of Custody #(s) N/A
    - Request for Analysis #(s) _____
    - Airbill # _____ Carrier N/A
12. Have any anomalies been identified above? Yes [ ] No [X]
13. Memos have been initiated for all anomalies identified above? Yes [X]

Printed Name/Signature Karen Schtenberg Date/Time 12-11-95 10:15

00009

Quanterra Environmental Services

9613444.0607

FC TO: BW/WP
12-12-95
10:30
MN

Login No.: 9978

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Richland

Date: 12-12-95 Time: 8:50

Project No:

Initiated by: Marvin Nelson

Shipper/No:

RFA/COC Numbers: 43729

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature:
   - ☐ pH
   - ☐ other:
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain:
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing.
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain:
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Other (explain below):

☑ **No variances were noted during sample receipt.** **Cooler Temperature Upon Receipt:** 4°C

Notes:

Corrective Action:

☐ Client's Name: Informed verbally on: By:

☐ Client's Name: Informed in writing on: By:

☐ Sample(s) processed "as is".

☐ Sample(s) on hold until: If released, notify:

Sample Control Supervisor Review: (or designate) [signature] Date: 12-12-95

Project Management Review: Abby Wold Date: 12-13-95

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 11/24/95

5956

00010

Quanterra January 04, 1996 11:24 am
Account: 10722 Project: 550.76 Quanterra-Richland QAS No. 933 Rev. 0
Master Sample Login: 10020

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: Sue Wilson PM Review: Abby Wold

Sample Header Template:

Sample No. / Comments / # Container Type	Client ID	Analysis	C-Matrix	Date: Collected / Class	Preservative	Received / Anal. Due Date	Due / Hold Date	Shipper / Site	Rad Category	Rad Sample No. / (Container Numbers:% Filled)
10020-001	B0GZ54		Water	15-DEC-95 10:04		18-DEC-95 10:10	22-JAN-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 51221901										
1 AN - Amber Glass-500ml		CR/218.2/Q4		S	HNO3	15-JAN-96	12-JUN-96	T5B		(202373:100)
10020-002	B0GZ55	----	Water	15-DEC-95 10:08		18-DEC-95 10:10	22-JAN-96	FED-EX	1	Screening not Required
NOTE: RICHLAND ID 51221902										
1 AN - Amber Glass-500ml		CR/218.2/Q4		S	HNO3	15-JAN-96	12-JUN-96	T5B		(202374:100)

9613444.0608

00011

3*=Sample has not been rad screened.

TEMP 2°C CUR6040

Do: St Louis

Chain of Custody Record

Quanterra Environmental Services

QUA-4124-1

Client	Project Manager	Date	Chain Of Custody Number
Bechtel Hanford	Van Pettey	12 18 95	43733
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact

Project Name: SAF B96-035

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): SEE COC

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis	Special Instructions/ Conditions of Receipt
51221901 - B0GZ54		SEE			COC								
↓ 02 - ↓ Z55													

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal: ☑ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other _____

QC Requirements (Specify): SDG W0840

	Date	Time		Date	Time
1. Relinquished By: Heidelberg Quanterra	12-18-95	16:00	1. Received By: Marvin Nelson	12-20-95	9:45
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

00012

9613444.0609

Bechtel Hanford, Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1

Data Turnaround
☐ Priority
■ Normal

Collector K. Trapp	Company Contact B. D. Blumenkranz	Telephone (509) 372-9658
Project Designation 100-HR-3 Pump and Treatment	Sampling Location 100-HR-3 Pump and Treat	SAF No. B96-035
Ice Chest No. ER-210	Field Logbook No. EF-1144-2	Method of Shipment Hand Delivered
Shipped To Quanterra	Offsite Property No. NA	Bill of Lading/Air Bill No. NA

Possible Sample Hazards/Remarks	Preservation	HNO_3	Cool 4°C	None
	Type of Container	P/G	P/G	P
	No. of Container(s)	1	1	1
Special Handling and/or Storage Maintain samples between 2°C and 6°C	Volume	500mL	500mL	20mL

SAMPLE ANALYSIS 512219 SDL W0840

Sample No.	Matrix*	Date Sampled	Time Sampled	Chromium - Total	Chromium VI	Activity Scan		pH
B0GZ54 01	W	12/15/95	1004	X	X	X		7
B0GZ55 02	W	12/15/95	1008	X	X	X		6
								12/18/95

PH 1 100 %

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By K. Trapp / K. Trapp	Date/Time 1415 12/15/95	Received By Bwhitter	Date/Time 1415 12-15-95
Relinquished By Bwhitter	Date/Time 1010 12-18-95	Received By [illegible]	Date/Time <100 pm 12/18/95 1010
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

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

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

00013

9613444.0610

Client Sample Screening Results

18-Dec-95

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI B0GZ28		12/18/95 11:00:00 AM	QUAD21A	12/18/95 2:13:18 PM	B0GZ28	30	18	0.538	59	1.048381
	LIQUID		Bkg:	12/18/95 1:13:14 AM	BKG	3500	217	0.062	3214	0.9182857
Anl Date: 12/18/95	Tot Sa, Alq: 5.00E+00	, 1.00E+01	Alp;	(Dpm/ 1.57E+00	(uCi/ 3.53E-04	(pCi/ 7.06E+01	± 2.5E+01	CAT I	3.5E-01	Lab Alq Lig
Ppt mg: 1.2	Units: L	, ml	Bet;	Alq): 1.82E+00	Sa): 4.09E-04	Lig): 8.19E+01	± 2.2E+01		6.1E-01	
BHI B0GZ40		12/18/95 11:00:00 AM	QUAD21B	12/18/95 2:13:18 PM	B0GZ40	30	12	0.35685714	75	1.6254286
	LIQUID		Bkg:	12/18/95 1:13:14 AM	BKG	3500	151	0.04314286	3061	0.8745714
Anl Date: 12/18/95	Tot Sa, Alq: 5.00E+00	, 1.00E+01	Alp;	(Dpm/ 1.09E+00	(uCi/ 2.45E-04	(pCi/ 4.90E+01	± 2.3E+01	CAT I	5.1E-01	Lab Alq Lig
Ppt mg: 1.9	Units: L	, ml	Bet;	Alq): 2.94E+00	Sa): 6.62E-04	Lig): 1.32E+02	± 2.5E+01		3.8E-01	
BHI B0GZ42		12/18/95 11:00:00 AM	QUAD21C	12/18/95 2:13:18 PM	B0GZ42	30	18	0.55371429	76	1.6476190
	LIQUID		Bkg:	12/18/95 1:13:14 AM	BKG	3500	162	0.04628571	3100	0.8857143
Anl Date: 12/18/95	Tot Sa, Alq: 5.00E+00	, 1.00E+01	Alp;	(Dpm/ 1.60E+00	(uCi/ 3.60E-04	(pCi/ 7.21E+01	± 2.4E+01	CAT I	3.5E-01	Lab Alq Lig
Ppt mg: 1.8	Units: L	, ml	Bet;	Alq): 2.92E+00	Sa): 6.59E-04	Lig): 1.32E+02	± 2.5E+01		3.8E-01	
BHI B0GZ44		12/18/95 11:00:00 AM	QUAD21D	12/18/95 2:13:18 PM	B0GZ44	30	16	0.47904762	63	1.1425714
	LIQUID		Bkg:	12/18/95 1:13:14 AM	BKG	3500	190	0.05428571	3351	0.9574286
Anl Date: 12/18/95	Tot Sa, Alq: 5.00E+00	, 1.00E+01	Alp;	(Dpm/ 1.48E+00	(uCi/ 3.32E-04	(pCi/ 6.65E+01	± 2.6E+01	CAT I	3.8E-01	Lab Alq Lig
Ppt mg: 2.1	Units: L	, ml	Bet;	Alq): 1.98E+00	Sa): 4.45E-04	Lig): 8.91E+01	± 2.3E+01		5.6E-01	
BHI B0GZ54		12/18/95 11:00:00 AM	QUAD22A	12/18/95 2:13:26 PM	B0GZ54	30	6	0.14085714	73	1.4693333
	LIQUID		Bkg:	12/18/95 1:13:31 AM	BKG	3500	207	0.05914286	3374	0.964
Anl Date: 12/18/95	Tot Sa, Alq: 1.00E+00	, 1.00E+01	Alp;	(Dpm/ 3.83E-01	(uCi/ 1.73E-05	(pCi/ 1.73E+01	± 2.1E+01	CAT I	1.4E+00	Lab Alq Lig
Ppt mg: 4	Units: L	, ml	Bet;	Alq): 2.67E+00	Sa): 1.20E-04	Lig): 1.20E+02	± 2.4E+01		4.2E-01	

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00014

Figure 1

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 12/18/95 1010 Client Name BHI

Project/Client # B96-039 Batch or Case # _____

Cooler ID (if noted on outside of cooler) ER-210

1. Condition of shipping container? ok
2. Custody Seals on cooler intact? Yes [X] No [ ]
3. Custody Seals dated and signed? Yes [X] No [ ]
4. Chain of Custody record is taped on inside of cooler lid? Yes [ ] No [X]
5. Vermiculite/packing material is: Wet [X] Dry [ ] _____
6. Each sample is in a plastic bag? Yes [X] No [ ] _____
7. Number of sample containers in cooler: 38
8. Samples have:
   - X tape
   - X custody seals
   - ____ hazard labels
   - ____ appropriate sample labels
9. Samples are:
   - X in good condition
   - ____ broken
   - ____ other
   - ____ leaking
   - ____ have air bubbles
10. Coolant Present? Yes [✓] No [ ] Sample Temperature 4°C
11. The following paperwork should be accounted for (N/A if not applicable):

    Chain of Custody #(s) N/A

    Request for Analysis #(s) |

    Airbill # _____ Carrier _____
12. Have any anomalies been identified above? Yes [ ] No [X]
13. Memos have been initiated for all anomalies identified above? Yes [ ]

Printed Name/Signature Tom Gilmore [signature] Date/Time 12/18/95 1010

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
CCN: N/A
OU: 100HR-3
TSD: N/A
ERA: N/A
Subject Code: 5400

TO: Dave Blumenkranz H4-90 DATE: April 26, 1995

COPIES: Doug Bowers N3-05 FROM: Mike Wesselman
Radiological Controls
N3-06/376-2084

Post-it® Fax Note 7671	Date 5/1	# of pages ▶ 1
To D. Bowers	From D. Blumenkranz	
Co./Dept. ITH/Samp.	Co. CHI/E&S	
Phone # 376-1007	Phone # 372-9658	
Fax # 376-5991	Fax #	

SUBJECT: **EXEMPTION OF SAMPLES FROM 100-HR-3 PUMP AND TREAT FROM TOTAL ACTIVITY ANALYSIS.**

After reviewing sampling data recorded on GeoDat as well as data from the latest resin change at the unit, it has been concluded that there is no need to perform total activity analysis of water sample from 100-HR-3 prior to offsite shipment. Water from all wells in the area is well below levels which would deliver 100 millirem per year CEDE to any one drinking two liters a day, no water exceeds the 2000 picocurie per gram limit for shipment as non radioactive by Department of Transportation. Activity trends in all wells have been downward for the last twenty years. Sample from the pump and treat system itself indicate less than six picocuries per gram of tritium and less than ten picocuries per liter of both alpha and beta contamination. All discharges of radioactive material to the ground in the 100-D Area have ceased, the actions of the pump and treat system do not appear to be mobilizing previously deposited materials. Based on the above information and the results of total activities performed to date, there is sufficient process knowledge to conclude that preshipment screening of water samples is no longer required.

Mike Wesselman

Mike Wesselman

maw

Distribution

Quanterra Environmental Services 9613444.0614

BW/WP
12-20-95
11:45
MN

Login No.: 10020

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Rechland
Date: 12-20-95 Time: 9:45
Project No: 550.76
Initiated by: Marvin Nelson
Shipper/No: 3826831942
RFA/COC Numbers: 43733

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing.
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Other (explain below): _____

☐ **No variances were noted during sample receipt.** **Cooler Temperature Upon Receipt:** 2°C

Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is". _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designate) [signature] Date: 12-20-95

Project Management Review: Abby Wolden Date: 1-4-96

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 11/24/95

Quanterra-Richland
P.O. Box 1970
Richland, WA 99352

Project: 550.76

Category: Chromium-GFAA
Method: EPA 218.2
Matrix: LIQUID

Sample Date : 12/15/95
Receipt Date : 12/18/95
Report Date : 01/16/96

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dil.
BOGZ54	10020-001	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	790	UG/L		100	100
BOGZ55	10020-002	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	330	UG/L		100	100
BOGRN5	9978-001	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	749	UG/L		100	100
BOGRN5	9978-001MS	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	350	%REC			100
BOGRN5	9978-001MSD	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	600	%REC			100
BOGRN6	9978-002	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	557	UG/L		100	100
NA	QCBLK87897-1	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	1.0	UG/L	U	1.0	1
NA	QCLCS87897-1	Chromium	7440-47-3	QCBLK87897-1	01/09/96	01/09/96	87	%REC			1

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0GRN5

Lab Name: QUANTERRA_MO Contract: 550.76
Lab Code: ITMO Case No.: SAS No.: SDG No.: W0840
Matrix (soil/water): WATER Lab Sample ID: 9978-001
Level (low/med): LOW Date Received: 12/11/95
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	749			F

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

9613444.0617

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0GRN6

Lab Name: QUANTERRA MO Contract: 550.76

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0840

Matrix (soil/water): WATER Lab Sample ID: 9978-002

Level (low/med): LOW Date Received: 12/11/95

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	557			F

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

9613444.0618

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0GZ54

Lab Name: QUANTERRA MO Contract: 550.76
Lab Code: ITMO Case No.: SAS No.: SDG No.: W0840
Matrix (soil/water): WATER Lab Sample ID: 10020-001
Level (low/med): LOW Date Received: 12/18/95
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	790			F

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

9613444.0619

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0GZ55

Lab Name: QUANTERRA_MO Contract: 550.76

Lab Code: ITMO Case No.: SAS No.: SDG No.: W0840

Matrix (soil/water): WATER Lab Sample ID: 10020-002

Level (low/med): LOW Date Received: 12/18/95

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	330			F

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

9613444.0620

HEXAVALENT CHROMIUM DATA SUMMARY

SDG: W0840

ANALYSIS DATE: 12/11/95

MATRIX: WATER

MDL: 0.003 mg/L

SAMPLE LAB. ID	CLIENT ID	SAMPLE RESULT	UNITS	SPIKE ADDED	UNITS	SPIKE RECOVERED	UNITS	PERCENT RECOVERY
Preparation Blank		-0.001	mg/L					
LCS		0.503	mg/L	0.500	mg/L	0.503	mg/L	100.6
51212301	B0GRN5	0.777	mg/L					
51212302	B0GRN6	0.579	mg/L					
51212302 DUP	B0GRN6	0.573	mg/L					
51212302 MS	B0GRN6	0.827	mg/L	0.263	mg/L	0.248	mg/L	94.3
51212302 MSD	B0GRN6	0.826	mg/L	0.263	mg/L	0.247	mg/L	93.9

COMMENTS:

R3 12/12/95
PK 12/18/95

Form No.:CG-196, 8/95, Rev. 0

9613444.0621

HEXAVALENT CHROMIUM DATA SUMMARY

SDG: W0840

ANALYSIS DATE: 12/19/95

MATRIX: WATER

MDL: 0.003 mg/L

SAMPLE LAB. ID	CLIENT ID	SAMPLE RESULT	UNITS	SPIKE ADDED	UNITS	SPIKE RECOVERED	UNITS	PERCENT RECOVERY
Preparation Blank		-0.00	mg/L					
LCS		0.500	mg/L	0.500	mg/L	0.500	mg/L	100.0
51222001	B0GZ54	0.779	mg/L					
51222002	B0GZ55	0.373	mg/L					
51222002 duplicate	B0GZ55	0.370	mg/L					
51222002 MS	B0GZ55	0.636	mg/L	0.263	mg/L	0.263	mg/L	100.0
51222002 MSD	B0GZ55	0.637	mg/L	0.263	mg/L	0.264	mg/L	100.4

COMMENTS:

(R3) 12/21/95

Form No.:CG-196, 8/95, Rev. 0

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