



CASE NARRATIVE

STL St. Louis

Bechtel Hanford Incorporated
3190 George Washington Way
Richland, Washington 99352

June 7, 2001
Attention: Joan Kessner

Project Number : 42262
SDG : W03521
Number of Samples : one
SAF : C01-032
Sample Matrix : water
Data Deliverable : Summary
Date SDG Closed : June 7, 2001



II. Introduction

On May 25, 2001, one water sample was received by STL-St. Louis for chemical analysis. The sample was received at a temperature of 5 degrees C. Review the COC and CUR forms for any variations in sample temperature or condition when received at the lab. See the attached Sample Summary sheet for the client and lab Ids for these samples.

III. 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. This report is incomplete without the Case Narrative. Samples are reported "as received"; i.e. wet weight, unless otherwise noted on the data sheets.

Analyses requested: see attached Methods Summary Sheet

Deviation from Request: There were no deviations.

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
MS- Matrix Spike
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate



EDMC



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V. Comments

General:

The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Sulfate:

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

There were no comments or non-conformances associated with the data.

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:

A handwritten signature in black ink that reads "Marti Ward".

Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

FILE250219

| <u>WO #</u> | <u>SAMPLE#</u> | <u>CLIENT</u> | <u>SAMPLE ID</u> | <u>SAMPLED</u> | <u>SAMP</u> |
|-------------|----------------|---------------|------------------|----------------|-------------|
| | | | | <u>DATE</u> | <u>TIME</u> |
| ED06R | 001 | B11V80 | | 05/23/01 | 09:49 |

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limits.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F1E250219

| <u>PARAMETER</u> | <u>ANALYTICAL METHOD</u> | <u>PREPARATION METHOD</u> |
|------------------|--------------------------|---------------------------|
| Sulfate | MCAWW 300.0A | MCAWW 300.0A |

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: ISRM GW MONIT
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: C01-032
AMOUNT REC'D: 500P
STORAGE LOC: R186
LOT COMMENTS: Anions: ICV/CCV criteria +/- 10%
MATRIX: WATER
SAMPLE ID: B11V80
QC PACKAGE: Report
SAMPLE COMMENTS:
ANIONS REQUIRE DUPLICATE!!!!!!
Beginning Depth: .00 Ending Depth: .00

QUOTE/SAR #: 42262
LAB ID: F-1E250219-001
WORK ORDER: ED06R
RECEIVING DATE: 5/25/01
SAMPLING DATE: 5/23/01
ANALYTICAL DUE DATE: 6/25/01N
REPORT DUE DATE: 7/09/01
PRIORITY: 30
SAMPLING TIME: 9:49
RECEIVING TIME: 8:30
SDG# : W03521

***** ANALYSIS *****

| | WRK | REQUEST | EXTRACTION | ANALYSIS |
|---|-----|---------|------------|----------|
| | LOC | DATE | EXP DATE | EXP DATE |
| Sulfate (300.0, Ion Chromatography) | 06 | 5/25/01 | 0/00/00 | 6/20/01 |
| NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION | | | | |
| (I-88-CY-5I) ED06R-1-AA Protocol: A QC Program: CLIENT: HANFORD | | | | |

PSL20300
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SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 5/25/01
Time: 12:52:10
User Id.: CLARKEJ

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: ISRM GW MONIT
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: C01-032
AMOUNT REC'D: 500P
STORAGE LOC: R186
LOT COMMENTS: Anions: ICV/CCV criteria +/- 10%
MATRIX: WATER
SAMPLE ID: B11V80
QC PACKAGE: Report
SAMPLE COMMENTS:
ANIONS REQUIRE DUPLICATE!!!!!!
Beginning Depth: .00 Ending Depth: .00

QUOTE/SAR #: 42262
LAB ID: F-1E250219-001-S
WORK ORDER: ED06R MS
RECEIVING DATE: 5/25/01
SAMPLING DATE: 5/23/01
ANALYTICAL DUE DATE: 6/25/01N
REPORT DUE DATE: 7/09/01
PRIORITY: 30
SAMPLING TIME: 9:49
RECEIVING TIME: 8:30
SDG# : W03521

***** ANALYSIS *****

| WRK LOC | REQUEST DATE | EXTRACTION EXP DATE | ANALYSIS EXP DATE |
|------------|-----------------|------------------------|----------------------|
|------------|-----------------|------------------------|----------------------|

| | | | | |
|---|----|---------|---------|---------|
| Sulfate (300.0, Ion Chromatography) | 06 | 5/25/01 | 0/00/00 | 6/20/01 |
| NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION | | | | |
| (I-88-CY-5I) ED06R-1-AC Protocol: A QC Program: CLIENT: HANFORD | | | | |

WSCF ANALYTICAL LABORATORY REPORT

Attention: DL STEWART/SCOTT CONLEY K6-75
Project Number GW SAMPLING :GROUND WATER SAMPLING

Group #: 20010740

| Sample # | Client ID | Test Performed | Matrix | Method | RQ | Result | Units | MDL | Analyzed | Sampled | Received |
|------------|-----------|-------------------------------|--------|------------|----|--------|--------|------|----------|----------|----------|
| W010000768 | B11WN1 GW | Alpha by liquid scintillation | WATER | LA-508-421 | U | 0.1 | pCi/mL | 0.20 | 06/23/01 | 06/23/01 | 06/23/01 |
| W010000768 | B11WN1 GW | Alpha error by LC | WATER | LA-508-421 | | 390 | % | 0.00 | 06/23/01 | 06/23/01 | 06/23/01 |
| W010000768 | B11WN1 GW | Beta by liquid scintillation | WATER | LA-508-421 | | 3.2 | pCi/mL | 0.30 | 06/23/01 | 06/23/01 | 06/23/01 |
| W010000768 | B11WN1 GW | Beta error by LC | WATER | LA-508-421 | | 31 | % | 0.00 | 06/23/01 | 06/23/01 | 06/23/01 |

MDL=Minimum Detection Limit

RQ=Result Qualifier

B - The analyte was detected in the associated method blank.
 E - Compound concentration exceeded calibration range.
 N - Identification is based on a mass spectral library search.

D - Compound concentration resulted from a dilution.
 J - Estimated value. Z - See Comments.
 U - The analyte was analyzed for but not detected.

* - Indicates results that have NOT been validated.

Report W004/ver. 3.1

PACIFIC NORTHWEST NATIONAL LABORATORY

Figure 1. Sample Check-in List

Date/Time Received: 5/24/01 10:05
SDG#: W03521
Work Order Number: JLE240189 SAF# C01-032
Shipping Container ID: SML-264 Chain of Custody # C01-032-16

- 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 5°
- 5. Vermiculite/packing materials is Wet Dry
- 6. Number of samples in shipping container: 3
- 7. Sample holding times exceeded? Yes No

| | |
|---|---|
| 8. Samples have: <input checked="" type="checkbox"/> tape <input checked="" type="checkbox"/> custody seals | <input type="checkbox"/> hazard labels <input checked="" type="checkbox"/> appropriate sample labels |
| 9. Samples are: <input checked="" type="checkbox"/> in good condition <input type="checkbox"/> broken | <input type="checkbox"/> leaking <input type="checkbox"/> have air bubbles |

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

Sample Custodian/Laboratory: Michelle Arens Date: 5/24/01 10:05

Telephoned to: _____ On _____ By _____



Lot No.: F1E250219
W03521

Condition Upon Receipt Form
St. Louis Laboratory

Client: PNNL

Date: 05.25.01 Time: 0830

Quote No: 42262

Initiated by: SL

Shipper/No: Carbone 10377765355

COC/RFA Numbers: C01-032-14

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see notes for explanation):

- | | | | |
|---|--|---|---|
| 1. <input checked="" type="radio"/> Y <input type="radio"/> N | Sample received in undamaged condition. | 5. <input checked="" type="radio"/> Y <input type="radio"/> N | Sample volume sufficient for analysis. |
| 2. <input checked="" type="radio"/> Y <input type="radio"/> N | Sample received within 4°C ± 2°C* Record temperature: <u>50</u> | 6. <input checked="" type="radio"/> Y <input type="radio"/> N | Sample received with Chain of Custody. |
| 3. <input checked="" type="radio"/> Y <input type="radio"/> N | Sample received with proper pH**. | 7. <input checked="" type="radio"/> Y <input type="radio"/> N | Chain of Custody matches sample IDs on containers. |
| 4. <input checked="" type="radio"/> Y <input type="radio"/> N | Sample received in proper containers. | 8. <input checked="" type="radio"/> Y <input type="radio"/> N | Custody seal received intact and tamper evident on cooler. |
| | | 9. <input checked="" type="radio"/> Y <input type="radio"/> N | Custody seal received intact and tamper evident on bottles. |

* Temperature Variance Does Not Affect the Following Analyses: _____

** For DOE-AL (Pantex, LANL, Sandia, Timet) sites, remember to pH all containers received, except for VOA, TOX, and soils.

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 (or designate) Review: [Signature] Date: 05.25.01

Project Management Review: [Signature] Date: 5.25.01

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIALS AND THE DATE NEXT TO THAT ITEM

BECHTEL HANFORD, INC.

Client Sample ID: B11V80

General Chemistry

Lot-Sample #...: F1E250219-001
Date Sampled...: 05/23/01

Work Order #...: ED06R
Date Received...: 05/25/01

Matrix.....: WATER

| <u>PARAMETER</u> | <u>RESULT</u> | <u>RL</u> | <u>UNITS</u> | <u>METHOD</u> | <u>PREPARATION- ANALYSIS DATE</u> | <u>PREP BATCH #</u> |
|------------------|---------------|---------------------|--------------|----------------|---------------------------------------|-------------------------|
| Sulfate | 194 | 10.0 | mg/L | NCANN 300.0A | 05/25/01 | 1149421 |
| | | Dilution Factor: 20 | | MDL.....: 0.58 | | |

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1E250219 Work Order #...: ED06R-SMP Matrix.....: WATER

ED06R-DUP

Date Sampled...: 05/23/01 Date Received...: 05/25/01

% Moisture.....: Dilution Factor:

Initial Wgt/Vol:

| <u>PARAM</u> | <u>RESULT</u> | <u>DUPLICATE</u> | <u>UNITS</u> | <u>RPD</u> | <u>RPD</u> | <u>METHOD</u> | <u>PREPARATION-</u> | <u>PREP</u> |
|--------------|---------------|------------------|--------------|---------------------|--------------|--------------------------------|----------------------|----------------|
| | | <u>RESULT</u> | | | <u>LIMIT</u> | | <u>ANALYSIS DATE</u> | <u>BATCH #</u> |
| Sulfate | 194 | 195 | mg/L | 0.62 | (0-20) | SD Lot-Sample #: F1E250219-001 | 05/25/01 | 1149421 |
| | | | | Dilution Factor: 20 | | | | |

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F1E250219

Matrix.....: WATER

Date Sampled...: 05/23/01

Date Received...: 05/25/01

| PARAMETER | SAMPLE SPIKE | | MEASURED | | PERCENT | | PREPARATION- | PREP |
|-----------|--------------|------|---------------------------|-------|----------|--------------|--------------------------------|---------|
| | AMOUNT | AMT | AMOUNT | UNITS | RECOVERY | METHOD | ANALYSIS DATE | BATCH # |
| Sulfate | 194 | 80.0 | 274 | mg/L | 100 | MCAWW 300.0A | 05/28/01 | 1149421 |
| | | | Work Order #...: ED06R1AC | | | | MS Lot-Sample #: F1E250219-001 | |
| | | | Dilution Factor: 20 | | | | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #....: F1E250219

Matrix.....: WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION- ANALYSIS DATE | PREP BATCH # |
|-----------|--------|--------------------------------|-------|----------------------------------|-------------------------------|-----------------|
| Sulfate | ND | Work Order #: ED4CL1AA 0.50 | mg/L | MB Lot-Sample #: MCAWW 300.0A | F1E290000-421 05/25/01 | 1149421 |
| | | Dilution factor: 1 | | | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Ayres, Doris E

From: Trent, Stephen J
Sent: Tuesday, May 29, 2001 2:21 PM
To: 'jwaddell@stl-inc.com'
Cc: Kessner, Joan H; Borghese, Jane V; Ayres, Doris E
Subject: RE: Cr6+

Jackie:

Because of the holding time exceedance (due to delay in delivery to the laboratory), please cancel the analysis for Cr-VI.

Thanks for the heads up.

Steve Trent
ERC Sample Management

-----Original Message-----

From: jwaddell@stl-inc.com [mailto:jwaddell@stl-inc.com]
Sent: Tuesday, May 29, 2001 1:51 PM
To: SJTrent@mail.bhi-erc.com
Cc: JHKessne@mail.bhi-erc.com
Subject: Cr6+

Sample B11V79 was received on 5/24/01 at 10:05 am; sampled 5/23/01 at 9:49 am. Should we analyzed outside of holding time?