

Quanterra
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Richland, Washington 99352-1613

0053286

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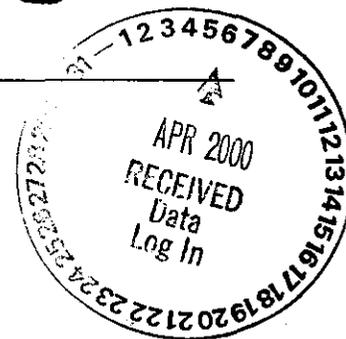
CERTIFICATE OF ANALYSIS

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

April 6, 2000

Attention: Joan Kessner

RECEIVED
JUN 26 2000
EDMC



SAF Number : B99-005
Date SDG Closed : March 22, 2000
Number of Samples : One (1)
Sample Type : Soil
SDG Number : W03121
Data Deliverable : 15-Day / Summary

I. Introduction

On March 22, 2000, one soil sample was received at STL Richland (STLR) for radiochemical 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> |
|-----------------|----------------|---------------|------------------------|
| 9DXNW10 | BOXPT8 | SOIL | 3/22/00 |

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 analyses were:

Alpha Spectroscopy
Plutonium-238, -239/40 by method RICH-RC-5010
Americium-241 by method RICH-RC-5080
Uranium-234, -235, -238 by method RICH-RC-5079
Gamma Spectroscopy
Gamma Scan by method RICH-RC-5017
Gas Proportional Counting
Total Strontium by method RICH-RC-5006

Bechtel Hanford, Inc.
April 6, 2000
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III. Quality Control

The analytical results for each analysis performed under SDG W03121 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.

QC and sample results are reported in the same units.

IV. Comments

Alpha Spectroscopy

Plutonium-238, -239/40 by method RICH-RC-5010:

The LCS, batch blank, sample duplicate (B0XPT8) and sample results are within contractual requirements.

Americium-241 by method RICH-RC-5080:

The LCS, batch blank, sample duplicate (B0XPT8) and sample results are within contractual requirements.

Uranium-234, -235, -238 by method RICH-RC-5079:

The LCS, batch blank, sample duplicate (B0XPT8) and sample results are within contractual requirements.

Gamma Spectroscopy

Gamma Scan by method RICH-RC-5017:

The LCS, batch blank, sample duplicate (B0XPT8) and sample results are within contractual requirements.

Gas Proportional Counting

Total Strontium by method RICH-RC-5006:

The LCS, batch blank, sample duplicate (B0XPT8) and sample results are within contractual requirements.

Bechtel Hanford, Inc.

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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:

A handwritten signature in cursive script that reads "Jackie Waddell". The signature is written in black ink and has a long, sweeping underline that extends to the right.

Jackie Waddell
Project Manager

DUPLICATE RESULTS

| | | | |
|----------------|----------------------|----------------|---------------------|
| LAB NAME: | STL Richland | SDG: /RPT GRP: | W03121 / 10222 |
| LOT,RPT DB ID: | J0C220213-1 D9XNW1CR | MATRIX: | SOIL |
| CLIENT ID: | BOXPT8 | DATE RECEIVED: | 3/22/2000 1:10:00 P |
| ORIG LAB ID: | 9D9XNW10 | | |

| ANALYTE | DUP RESULT | COUNTING Q ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---------|---------------|----------------------------|-----------------------|-------------|----------------|-------|------------------|----------------|----------|
| CO-60 | 9.82E-03 | U 1.2E-02 | 1.2E-02 | 2.12E-02 | pCi/g | | RICHRC5017 | -4.03E-03 | 478.46% |
| CS-137 | 1.13E-02 | U 1.2E-02 | 1.2E-02 | 2.05E-02 | pCi/g | | RICHRC5017 | 1.01E-02 | 11.22% |
| EU-152 | 8.46E-02 | U 5.7E-02 | 5.7E-02 | 5.78E-02 | pCi/g | | RICHRC5017 | 9.38E-02 | 10.34% |
| EU-154 | 1.43E-02 | U 3.8E-02 | 3.8E-02 | 6.66E-02 | pCi/g | | RICHRC5017 | -3.13E-03 | 312.70% |
| EU-155 | -7.04E-03 | U 3.3E-02 | 3.3E-02 | 5.44E-02 | pCi/g | | RICHRC5017 | 5.89E-03 | 2240.49% |

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland

SDG /RPT GRP: W03121 / 10222

LOT,RPT DB ID: J0C230000-157 DA0AJ11B

MATRIX: SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | RPT UNIT | YIELD | METHOD NUMBER | WORK ORDE | BAT- CH |
|----------|-----------|---|------------------------|---------------------|----------|-------------|--------|------------------|--------------|------------|
| PU-238 | -1.68E-03 | U | 2.4E-03 | 2.4E-03 | 4.78E-02 | pCi/g | 39.87% | RICHRC5010 | DA0AJ1 | 0083157 |
| PU239/40 | -1.68E-03 | U | 2.4E-03 | 2.4E-03 | 4.78E-02 | pCi/g | 39.87% | RICHRC5010 | DA0AJ1 | 0083157 |

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland

SDG /RPT GRP: W03121 / 10222

LOT,RPT DB ID: J0C230000-160 DA0AM11B

MATRIX: SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | RPT UNIT | YIELD | METHOD NUMBER | WORK ORDE | BAT- CH |
|---------|-----------|---|------------------------|---------------------|----------|-------------|--------|------------------|--------------|------------|
| U-234 | 7.12E-03 | U | 1.3E-02 | 1.3E-02 | 2.78E-02 | pCi/g | 93.48% | RICHRC5079 | DA0AM | 0083160 |
| U-235 | -7.49E-04 | U | 1.1E-03 | 1.1E-03 | 2.14E-02 | pCi/g | 93.48% | RICHRC5079 | DA0AM | 0083160 |
| U-238 | 3.18E-03 | U | 9.5E-03 | 9.5E-03 | 2.50E-02 | pCi/g | 93.48% | RICHRC5079 | DA0AM | 0083160 |

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland

SDG /RPT GRP: W03121 / 10222

LOT,RPT DB ID: J0C230000-161 DA0AQ11B

MATRIX: SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | RPT UNIT | YIELD | METHOD NUMBER | WORK ORDE | BAT- CH |
|---------|-----------|---|------------------------|---------------------|----------|-------------|-------|------------------|--------------|------------|
| CO-60 | 6.66E-03 | U | 5.9E-03 | 5.9E-03 | 1.18E-02 | pCi/g | | RICHRC5017 | DA0AQ | 0083161 |
| CS-137 | 3.59E-03 | U | 6.4E-03 | 6.4E-03 | 1.14E-02 | pCi/g | | RICHRC5017 | DA0AQ | 0083161 |
| EU-152 | 4.07E-03 | U | 1.8E-02 | 1.8E-02 | 3.09E-02 | pCi/g | | RICHRC5017 | DA0AQ | 0083161 |
| EU-154 | -6.59E-03 | U | 1.6E-02 | 1.6E-02 | 2.87E-02 | pCi/g | | RICHRC5017 | DA0AQ | 0083161 |
| EU-155 | -4.17E-03 | U | 1.4E-02 | 1.4E-02 | 2.26E-02 | pCi/g | | RICHRC5017 | DA0AQ | 0083161 |

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland **SDG: /RPT GRP:** W03121 / 10222
LAB SAMPLE ID: DA0AQ12S **MATRIX:** SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|----------------|---------------|----------|---------------------------------|------------------------------|---------------------|------------------------|--------------|-----------------|-----------------|
| CS-137 | 3.20E-01 | | 5.1E-02 | 5.1E-02 | 3.48E-02 | pCi/g | | 3.07E-01 | 104.04% |

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland SDG: /RPT GRP: W03121 / 10222
LAB SAMPLE ID: DA0AV12S MATRIX: SOIL

| ANALYTE | RESULT | COUNTING Q ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|-----------|----------|---------------------------|----------------------|-------------|----------------|--------|----------|----------|
| STRONTIUM | 1.02E+00 | 1.3E-01 | 3.1E-01 | 1.17E-01 | pCi/g | 93.80% | 1.14E+00 | 89.29% |

Number of Results:

Data Review Checklist
RADIOCHEMISTRY

Priority

Lot Number: JOC 220213
 Client ID: BHI
 Due Date: 4-6-00
 QC Batch Number: 0083158 SDG Number: 3121
 Method Test Parameter: Am241
 Matrix: Soil

| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2 nd Level Review (✓) |
|---|---------|--------|---------|----------------------------------|
| A. Calibration | | | | |
| 1. Is the calibration documentation included where applicable? | | | / | ✓ |
| B. Sample Analysis | | | | |
| 1. Are the sample yields within acceptance criteria? | ✓ | | | |
| 2. Were all sample holding times met? | ✓ | | | |
| 3. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | | |
| C. QC Samples | | | | |
| 1. Is the blank yield within acceptance criteria? | ✓ | | | |
| 2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | | |
| 3. Does the blank result meet the Contract criteria? | ✓ | | | |
| 4. Is the blank result < the Contract Detection Limit? | ✓ | | | |
| 5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | ✓ | | / | |
| 6. Is the LCS result within acceptance criteria? | ✓ | | | |
| 7. Is the LCS yield within acceptance criteria? | ✓ | | | |
| 8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | | |
| 9. Do the MS/MSD results and yields meet acceptance criteria? | | | / | |
| 10. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | | |
| D. Other | | | | |
| 1. Are all Nonconformances included and noted? | | | / | |
| 2. Are all required forms filled out? | ✓ | | | |
| 3. Was the correct methodology used? | ✓ | | | |
| 4. Was transcription checked? | ✓ | | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | | |
| 6. Were units checked? | ✓ | | | ✓ |

Comments on any "No" response: _____

First Level Review: Pamela K...
 Second Level Review: Julie W...

Date: 4-6-00
 Date: 4/6/00 0021

Data Review Checklist
RADIOCHEMISTRY

Priority

| Lot Number: JOC 220 213 | | | | |
|---|---------|--------|--------------------|----------------------------------|
| Client ID: BHI | | | | |
| Due Date: 4-6-00 | | | | |
| QC Batch Number: 0083157 | | | SDG Number: WQ3121 | |
| Method Test Parameter: Plutonium | | | | |
| Matrix: Soil | | | | |
| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2 nd Level Review (✓) |
| A. Calibration | | | | |
| 1. Is the calibration documentation included where applicable? | | | ✓ | ✓ |
| B. Sample Analysis | | | | |
| 1. Are the sample yields within acceptance criteria? | ✓ | | | |
| 2. Were all sample holding times met? | ✓ | | | |
| 3. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | | |
| C. QC Samples | | | | |
| 1. Is the blank yield within acceptance criteria? | ✓ | | | |
| 2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | | |
| 3. Does the blank result meet the Contract criteria? | ✓ | | | |
| 4. Is the blank result < the Contract Detection Limit? | ✓ | | | |
| 5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ | |
| 6. Is the LCS result within acceptance criteria? | ✓ | | | |
| 7. Is the LCS yield within acceptance criteria? | ✓ | | | |
| 8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | | |
| 9. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ | |
| 10. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | | |
| D. Other | | | | |
| 1. Are all Nonconformances included and noted? | | | ✓ | |
| 2. Are all required forms filled out? | ✓ | | | |
| 3. Was the correct methodology used? | ✓ | | | |
| 4. Was transcription checked? | ✓ | | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | | |
| 6. Were units checked? | ✓ | | | ✓ |

Comments on any "No" response: _____

First Level Review: Pam Krenitzky

Date: 4-4-00

Second Level Review: John Widdell

Date: 4/5/00

0022

**Data Review Checklist
RADIOCHEMISTRY**

| Lot Number: <u>30C220213</u> | | | | |
|---|---------|--------|-------------------------|----------------------------------|
| Client ID: <u>BHZ</u> | | | | |
| Due Date: <u>4/6/00</u> | | | | |
| QC Batch Number: <u>0083/60</u> | | | SDG Number: <u>3/21</u> | |
| Method Test Parameter: <u>SR-MSD</u> | | | | |
| Matrix: <u>SOIL</u> | | | | |
| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2 nd Level Review (✓) |
| A. Calibration | | | | |
| 1. Is the calibration documentation included where applicable? | | | / | ✓ |
| B. Sample Analysis | | | | |
| 1. Are the sample yields within acceptance criteria? | ✓ | | | |
| 2. Were all sample holding times met? | ✓ | | | |
| 3. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | | |
| C. QC Samples | | | | |
| 1. Is the blank yield within acceptance criteria? | ✓ | | | |
| 2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | | |
| 3. Does the blank result meet the Contract criteria? | ✓ | | | |
| 4. Is the blank result < the Contract Detection Limit? | ✓ | | | |
| 5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | / | |
| 6. Is the LCS result within acceptance criteria? | ✓ | | | |
| 7. Is the LCS yield within acceptance criteria? | ✓ | | | |
| 8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | | |
| 9. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ | |
| 10. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | | |
| D. Other | | | | |
| 1. Are all Nonconformances included and noted? | | | / | |
| 2. Are all required forms filled out? | ✓ | | | |
| 3. Was the correct methodology used? | ✓ | | | |
| 4. Was transcription checked? | ✓ | | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | | |
| 6. Were units checked? | ✓ | | | |

Comments on any "No" response: _____

First Level Review: Pam Kovitz Date: 3-31-00
 Second Level Review: Jackie Waddell Date: 4/3/00

Data Review Checklist
RADIOCHEMISTRY

| Lot Number: <u>JOC 220213</u> | | | | | |
|---|---------|--------|-------------------------|----------------------------------|--|
| Client ID: <u>BHI</u> | | | | | |
| Due Date: <u>4-6-00</u> | | | | | |
| QC Batch Number: <u>0083161</u> | | | SDG Number: <u>3121</u> | | |
| Method Test Parameter: <u>gamma</u> | | | | | |
| Matrix: <u>soil</u> | | | | | |
| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2 nd Level Review (✓) | |
| A. Calibration | | | | | |
| 1. Is the calibration documentation included where applicable? | | | ✓ | ✓ | |
| B. Sample Analysis | | | | | |
| 1. Are the sample yields within acceptance criteria? | | | ✓ | ↓ | |
| 2. Were all sample holding times met? | ✓ | | | | |
| 3. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | | | |
| C. QC Samples | | | | | |
| 1. Is the blank yield within acceptance criteria? | | | ✓ | | |
| 2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | | | |
| 3. Does the blank result meet the Contract criteria? | ✓ | | | | |
| 4. Is the blank result < the Contract Detection Limit? | ✓ | | | | |
| 5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ | | |
| 6. Is the LCS result within acceptance criteria? | ✓ | | | | |
| 7. Is the LCS yield within acceptance criteria? | | | ✓ | | |
| 8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | | | |
| 9. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ | | |
| 10. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | | | |
| D. Other | | | | | |
| 1. Are all Nonconformances included and noted? | | | ✓ | | |
| 2. Are all required forms filled out? | ✓ | | | | |
| 3. Was the correct methodology used? | ✓ | | | | |
| 4. Was transcription checked? | ✓ | | | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | | | |
| 6. Were units checked? | | | | ✓ | |

Comments on any "No" response: _____

First Level Review: Pam Kunitzer Date: 4-5-00
 Second Level Review: Robert Waddell Date: 4/5/00

Data Review Checklist
RADIOCHEMISTRY

Priority

| Lot Number: JOC220213 | | | | |
|---|---------|--------|------------------|----------------------------------|
| Client ID: BHZ | | | | |
| Due Date: 4-6-00 | | | | |
| QC Batch Number: 0083162 | | | SDG Number: 3121 | |
| Method Test Parameter: TOTAL Sr | | | | |
| Matrix: SOIL | | | | |
| Review Item | Yes (✓) | No (✓) | N/A (✓) | 2 nd Level Review (✓) |
| A. Calibration | | | | |
| 1. Is the calibration documentation included where applicable? | | | ✓ | ✓ |
| B. Sample Analysis | | | | |
| 1. Are the sample yields within acceptance criteria? | ✓ | | | |
| 2. Were all sample holding times met? | ✓ | | | |
| 3. Is the sample Minimum Detectable Activity < the Contract Detection Limit? | ✓ | | | |
| C. QC Samples | | | | |
| 1. Is the blank yield within acceptance criteria? | ✓ | | | |
| 2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit? | ✓ | | | |
| 3. Does the blank result meet the Contract criteria? | ✓ | | | |
| 4. Is the blank result < the Contract Detection Limit? | ✓ | | | |
| 5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit? | | | ✓ | |
| 6. Is the LCS result within acceptance criteria? | ✓ | | | |
| 7. Is the LCS yield within acceptance criteria? | ✓ | | | |
| 8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit? | ✓ | | | |
| 9. Do the MS/MSD results and yields meet acceptance criteria? | | | ✓ | |
| 10. Do the duplicate sample results and yields meet acceptance criteria? | ✓ | | | |
| D. Other | | | | |
| 1. Are all Nonconformances included and noted? | | | ✓ | |
| 2. Are all required forms filled out? | ✓ | | | |
| 3. Was the correct methodology used? | ✓ | | | |
| 4. Was transcription checked? | ✓ | | | |
| 5. Were all calculations checked at a minimum frequency? | ✓ | | | |
| 6. Were units checked? | ✓ | | | ✓ |

Comments on any "No" response: _____

First Level Review: Pam Kewthon Date: 4-3-00
 Second Level Review: Judice Waddell Date: 4/4/00 0025

CHAIN OF CUSTODY

TMA / RICHMOND
 SAMPLE DELIVERY GROUP H0767

R003036-06

BOX1B5

DATA SHEET

A1-16

| | | |
|-----------------------------------|-----------------------------------|------------------|
| SDG <u>7771</u> | Client/Case no <u>Hanford</u> | SDG <u>H0767</u> |
| Contact <u>Melissa C. Mannion</u> | Contract <u>TRB-SBB-207925</u> | |
| Lab sample id <u>R003036-06</u> | Client sample id <u>BOX1B5</u> | |
| Dept sample id <u>7771-006</u> | Location/Matrix <u>100-D-52</u> | <u>SOLID</u> |
| Received <u>03/08/00</u> | Collected <u>03/06/00 12:23</u> | |
| % solids <u>100.0</u> | Custody/SAF No <u>B99-004-235</u> | <u>B99-004</u> |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALIFIERS | TEST |
|---------------|------------|-----------------|-------------------|--------------|--------------|------------|------|
| Cobalt 60 | 10198-40-0 | 0.224 | 0.051 | 0.035 | 0.050 | | GAM |
| Cesium 137 | 10045-97-3 | 0.194 | 0.055 | 0.058 | 0.10 | | GAM |
| Europium 152 | 14683-23-9 | 1.66 | 0.13 | 0.10 | 0.10 | | GAM |
| Europium 154 | 15585-10-1 | 0.169 | 0.17 | <u>0.20</u> | 0.10 | U | GAM |
| Europium 155 | 14391-16-3 | U | | <u>0.16</u> | 0.10 | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.19 | | U | GAM |

100 D Areas - Quick Turn

TIE TO:
 BOXPT8

| |
|-----------------------------|
| Lab id <u>TMANC</u> |
| Protocol <u>Hanford</u> |
| Version <u>Ver 1.0</u> |
| Form <u>DVD-DS</u> |
| Version <u>3.06</u> |
| Report date <u>03/13/00</u> |

Figure 1. Sample Check-in List

Date/Time Received: 3-22-00 1310 SDG#: W03121
 Work Order Number: JOC220213 SAF#: B99-005
 Shipping Container ID: ERC99-050 Chain of Custody #: B99005-098

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? Yes No
7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
8. Cooler temperature: 4°C (3 bottles) Yes No
9. Vermiculite/packing materials is: Wet Dry

10. Samples have: tape hazard labels
 custody seals appropriate sample labels

11. Samples are: in good condition leaking
 broken have air bubbles

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

Sample Custodian/Laboratory: K. Hutterling Date: 3-22-00
 Telephone/Fax/E-mailed to: _____ On _____ By _____

Client Sample Screening Results

22-Mar-00

(B3) 3/22/00

| CLIENT CODE | ID | MATRIX | RECEIVED | DETECTOR | ACQ DATE | SAMPLE | MINUTES | CNTS A | NET CPM A | CNTS B | NET CPM B | | |
|-------------------|-------------|-----------------------|----------------------|----------|----------------------|---------------------|---------|----------------|-------------|--------------------------|------------|-------------|---------|
| BHI | BOXPT8D9XNW | | 3/22/2000 2:22:00 PM | QUAD21A | 3/22/2000 3:15:02 PM | BOXPT8D9XNW | 30 | 15 | 0.383333333 | 95 | 2.26333333 | | |
| | D9XNW | SOIL | | Bkg: | 3/22/2000 2:46:24 AM | BKG | 600 | 70 | 0.116666667 | 542 | 0.90333333 | | |
| Anl Date: 3/22/00 | | Tot Sa, Alq: 1.62E+03 | | 1.04E+02 | | Alp; (Dpm/ 2.58E+00 | | (uCi/ 1.81E-02 | | (pCi/ 1.11E+01 + 5.6E+00 | | CAT 4.5E+00 | Lab |
| Ppt mg: 104.4 | | Units: g | | mg | | Ret; Alq: 5.03E+00 | | Sa): 3.52E-02 | | L(g): 2.17E+01 + 3.3E+00 | | II 4.6E+00 | Alq L/g |

0030

22-Mar-00

RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 3/24/00
Time: 12:17:50

Parent Batch:
Associated Batches:

* QC BATCH: 0083158 *

PRIORITY
15 day

Page: 1

SX: Americium-241 by Alpha Spec
6I: PuAm PrpRC5013/RC5019, SepRC5080(5003)/R
5I: CLIENT: HANFORD

Analytical Due Date: 4/06/00
Project Manager:

| Lot# Work Order | Client | Analyt Due Matrix | Client Name Aliquot | Name Geometry | Count | Time | Mid/Ave Date/Time | Tracer ID Spike ID | CRDL | Units | Screen Alpha | Info - (Ci) Beta | PM Bin |
|-------------------------------------|--------|----------------------|------------------------|------------------|-------|------|----------------------|-----------------------|------|-------|-------------------|---------------------|-----------|
| JOC230000-158 B DAOAK-1-01 SOLID | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| JOC230000-158 C DAOAK-1-02 SOLID | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| JOC230000-158 B DAOAK-1-03 SOLID | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| JOC230000-158 C DAOAK-1-04 SOLID | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| JOC220213-001 D9XNW-1-04 SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| Comments: SOIL | | | | | | | | | | | | | |
| JOC220213-001 X D9XNW-1-09 SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| Comments: SOIL | | | | | | | | | | | | | |

Total Number of Samples In Batch: 00006

Batch Information:

Dry Wt: Y
Uncert: Both

Decay Correct: Y
Sigma: 1.960

Blank Sub: None

Call In:

ODR: Target List + Other Detected

BLANK CRDL
Americium 241 1

Tracer Yield
Americium 243 (020-105)

Type

QC Control Limits

** NYS = Not Yet Screened
** NA = Not Applicable
** Other = Other than Gross Alpha or Gross Beta
** Indicates that Batch Information has changed for this sample. Print worksheet for details.

Soil Analysis Pu
QC Batch # 0083157

0031

COC Signature Page

| Lot or Batch #: | 0083158 | Initials/Date | Procedure # |
|-----------------|---------------|---------------------------|---------------|
| Released By | SK | 3-23-00 | Radial 10009 |
| Received | N | 3-23-00 | Rich RC 5013 |
| Released By | N | 3-24-00 | n/a |
| Received | SK | 3/24/00 | RC 5019 |
| Released By | SK | 3/29/00 | n/a |
| Received | NH | ³⁻²⁹ 4-3-00 | Rich RC 5080 |
| Released By | NH | 4-4-00 | n/a |
| Received | SD | 4/5/00 | RC 5003-2 |
| Released By | SD | 4/5/00 | n/a |
| Received | CS | 4/5/00 | RC 170088K1 |
| Released By | CS | 4/8/00 | n/a |
| Received | SM | 4-6-00 | Radial 10.7.1 |
| Released By | JM | 4-6-00 | n/a |
| Received | | | |

RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 3/24/00
Time: 12:18:21
Page: 1

Parent Batch:
Associated Batches:
:
:
:

PRIORITY
15day

* QC BATCH: 0083157 *

PRIORITY
15day

SO: Plutonium-238,239/40 by Alpha Spec
6I: PuAm PrpRC5013/RC5019, SepRC5080(5003)/R
5I: CLIENT: HANFORD

Analytical Due Date: 4/06/00
Project Manager:

| Lot# Work Order | Client | Analyt Due Matrix | Client Name Aliquot | Geometry | Count | Time | Mid/Ave Date/Time | Tracer ID Spike ID | CRDL | Units | Screen Alpha | Info - (Ci) Beta | PM Bin |
|-------------------------------|--------|----------------------|------------------------|----------|-------|------|----------------------|-----------------------|------|-------|-------------------|---------------------|-----------|
| J0C230000-157 B DA0AJ-1-01 | SOLID | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| J0C230000-157 C DA0AJ-1-02 | SOLID | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| J0C230000-157 B DA0AJ-1-03 | SOLID | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| J0C230000-157 C DA0AJ-1-04 | SOLID | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| Comments: | | | | | | | | | | | | | |
| J0C220213-001 D9XNW-1-03 | SOIL | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| Comments: SOIL | | | | | | | | | | | | | |
| J0C220213-001 X D9XNW-1-07 | SOIL | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| Comments: SOIL | | | | | | | | | | | | | |

Total Number of Samples In Batch: 00006

Batch Information: Dry Wt: Y Decay Correct: Y Blank Sub: None Call In:
 Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected
 BLANK CRDL Tracer Yield Type QC Control Limits
 Plutonium 238 1 Plutonium 242 (020-105)
 Plutonium 239/4 1

** NYS = Not Yet Screened
** NA = Not Applicable
** Other = Other than Gross Alpha or Gross Beta
** Indicates that Batch Information has changed for this sample. Print worksheet for details.

Seq. Analysis Am
QC Batch # 0083158

0033

COC Signature Page

| Lot or Batch #: 0083157 | Initials/Date | Procedure # |
|-------------------------|--------------------------------------|---------------------------|
| Released By | <u>AHA 3-23-00</u> | <u>Richard Cooch</u> |
| Received | <u>W 3-23-00</u> | <u>Richard 5013</u> |
| Released By | <u>W 3-24-00</u> | <u>n/a</u> |
| Received | <u>SK 3/24/00</u> | <u>RC5019</u> |
| Released By | <u>SK 3/29/00</u> | <u>n/a</u> |
| Received | <u>AH 3-29-00</u> | <u>RC 5010</u> |
| Released By | <u>AH 4-03-00</u> | <u>n/a</u> |
| Received | <u>SD 4/3/00</u> | <u>RC 5039-2</u> |
| Released By | <u>SD 4/4/00</u> | <u>n/a</u> |
| Received | <u>CD 4/4/00</u> | <u>Richard Cooch 8RC1</u> |
| Released By | <u>CD 4/4/00</u> | <u>n/a</u> |
| Received | <u>JM 4-4-00</u> | <u>Radcalc v2.7.1</u> |
| Released By | <u>JM 4-4-00</u> | <u>n/a</u> |
| Received | <u>PK 4-4-00</u> <u>PK 4-4-00</u> | <u>Richard Cooch</u> |

RQC053

Parent Batch:
Associated Batches:
:
:
:
:

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 3/23/00
Time: 9:01:31
Page: 1

PRIORITY
Isday

* QC BATCH: 0083160 *

SR: Uranium-234,235,238 by Alpha Spec
7S: Uiso PrpRC5013/RC5019, SepRC5079(5039)
SI: CLIENT: HANFORD

Analytical Due Date: 4/06/00
Project Manager:

| Lot# Work Order | Client | Analyt Due Matrix | Client Name Aliquot | Geometry | Count | Time | Mid/Ave Date/Time | Tracer ID Spike ID | CRDL | Units | Screen Alpha | Info - (Ci) Beta | PM Bin |
|---|--------|----------------------|------------------------|----------|-------|------|----------------------|-----------------------|------|-------|-------------------|---------------------|-----------|
| J0C230000-160 B DA0AM-1-01 SOLID Comments: | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| J0C230000-160 C DA0AM-1-02 SOLID Comments: | | 4/06/00 | | | | | 3/21/00 14:30 | | | pCi/g | **NA | **NA | |
| J0C220213-001 X D9XNW-1-0A SOIL Comments: SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| ++ J0C220213-001 D9XNW-1-01 SOIL Comments: SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |

Total Number of Samples In Batch: 00004

Batch Information:

Dry Wt:

Decay Correct: Y

Blank Sub: None

Call In:

Uncert: Both

Sigma: 1.960

ODR: Target List + Other Detected

| | |
|-------------|---|
| BLANK CRDL | |
| Uranium 234 | 1 |
| Uranium 235 | 1 |
| Uranium 238 | 1 |

| | |
|--------------|-----------|
| Tracer Yield | |
| Uranium-232 | (020-105) |

Type QC Control Limits

** NYS = Not Yet Screened

** NA = Not Applicable

** Other = Other than Gross Alpha or Gross Beta

++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

1035

COC Signature Page

| Lot or Batch #: 0083100 | Initials/Date | Procedure # |
|-------------------------|------------------------|---------------|
| Released By | APB 3-22-00 | Richard 000 |
| Received | hw 3-23-00 | Richard 5013 |
| Released By | hw 3-24-00 | n/a |
| Received | SK 3/24/00 | RC5019 |
| Released By | SK 3/28/00 | n/a |
| Received | fw 03-28-00 | RC 5079 |
| Released By | fw 03-29-00 | n/a |
| Received | SD 3/29/00 | RC5039-2 |
| Released By | SD 3/30/00 | n/a |
| Received | CD 3/30/00 | KSCATK 2008K1 |
| Released By | CD 3/31/00 | n/a |
| Received | PK 3-31-00 | RICHARD 0002 |
| Released By | PK 3-31-00 | n/a |
| Received | | |

RQC053

Parent Batch:
Associated Batches:

:
:
:
:

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

*
* QC BATCH: 0083161 *
*

PRIORITY
15 day

Run Date: 3/23/00
Time: 9:02:03
Page: 1

T8: Gamma by HPGE 7 day ingrowth 3/31
AW: Gamma PrpRCS017
SI: CLIENT: HANFORD

Analytical Due Date: 4/06/00
Project Manager:

| Lot# Work Order | Client | Analyt Due Matrix | Client Name Aliquot | Name Geometry | Count | Time | Mid/Ave Date/Time | Tracer ID Spike ID | CRDL | Units | Screen Alpha | Info - (Ci) Beta | PM Bin |
|--|--------|----------------------|------------------------|------------------|-------|------|----------------------|-----------------------|----------|-------|-------------------|---------------------|-----------|
| J0C230000-161 B DA0AQ-1-01 SOLID Comments: | | 4/06/00 | | | | | 3/21/00 14:30 | | 5.00E-02 | pCi/g | **NA | **NA | |
| J0C230000-161 C DA0AQ-1-02 SOLID Comments: | | 4/06/00 | | | | | 3/21/00 14:30 | | 0.1 | pCi/g | **NA | **NA | |
| J0C220213-001 X D9XNW-1-0C SOIL Comments: SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 5.00E-02 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| J0C220213-001 D9XNW-1-05 SOIL Comments: SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 5.00E-02 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |

Total Number of Samples In Batch: 00004

Batch Information:

Dry Wt:

Decay Correct: Y

Blank Sub: None

Call In:

Uncert: Both

Sigma: 1.960

ODR: Target List + Other Detected

BLANK CRDL

| | |
|--------------|----------|
| Cobalt 60 | 5.00E-02 |
| Cesium 137 | 1.00E-01 |
| Europium 152 | 1.00E-01 |
| Europium 154 | 1.00E-01 |
| Europium 155 | 1.00E-01 |

Tracer Yield

Type

QC Control Limits

** NYS = Not Yet Screened

** NA = Not Applicable

** Other = Other than Gross Alpha or Gross Beta

++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0037

COC Signature Page

| Lot or Batch #: 0083161 | Initials/Date | Procedure # |
|-------------------------|--------------------------------------|--------------------|
| Released By | <u>AM 3-23-00</u> | <u>RichRC0009</u> |
| Received | <u>N 3-23-00</u> | <u>RichRC 5017</u> |
| Released By | <u>N 3-24-00</u> | n/a |
| Received | <u>ML 3/24/00</u> | <u>RICHRC0007</u> |
| Released By | <u>L 4/5 3/29/00 11/5/00</u> | n/a |
| Received | <u>PK 4-5-00</u> | <u>RICHRC0002</u> |
| Released By | <u>PK 4-5-00</u> | n/a |
| Received | | |
| Released By | | n/a |
| Received | | |
| Released By | | n/a |
| Received | | |
| Released By | | n/a |
| Received | | |

RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 3/24/00
Time: 12:18:59

Parent Batch:
Associated Batches:

* QC BATCH: 0083162 *

Page: 1

PRIORITY
15 day

TH: Total Strontium by GPC
CH: Sr-Total PrpRC5013, SepRC5006
SI: CLIENT: HANFORD

Analytical Due Date: 4/06/00

Project Manager:

| Lot# Work Order | Client | Analyt Due Matrix | Client Name Aliquot | Name Geometry | Count | Ave Time | Mid/Ave Date/Time | Tracer ID Spike ID | CRDL | Units | Screen Alpha | Info - (Ci) Beta | PM Bin |
|---|--------|----------------------|------------------------|------------------|-------|-------------|----------------------|-----------------------|------|-------|-------------------|---------------------|-----------|
| JOC230000-162 B DA0AV-1-01 SOLID Comments: | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| JOC230000-162 C DA0AV-1-02 SOLID Comments: | | 4/06/00 | | | | | 3/21/00 14:30 | | 1 | pCi/g | **NA | **NA | |
| JOC220213-001 X D9XNW-1-0D SOIL Comments: SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |
| ++ JOC220213-001 D9XNW-1-02 SOIL Comments: SOIL | | 4/06/00 | .0000 | | .000 | | 3/21/00 14:30 | | 1 | pCi/g | **NYS 35-03/00 | **NYS | JW2 |

Total Number of Samples In Batch: 00004

Batch Information:

Dry Wt:

Decay Correct: Y

Blank Sub: None

Call In:

Uncert: Both

Sigma: 1.960

ODR: Target List + Other Detected

BLANK CRDL
STRONTIUM 90

1

Tracer Yield
Strontium Trace (020-105)

Type

QC Control Limits

** NYS = Not Yet Screened

** NA = Not Applicable

** Other = Other than Gross Alpha or Gross Beta

++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0039

COC Signature Page

| Lot or Batch #: 0083142 | Initials/Date | Procedure # |
|-------------------------|--------------------|---------------------------------|
| Released By | <u>AAA 3-23-00</u> | <u>RichRC0009</u> |
| Received | <u>AW 3-23-00</u> | <u>RichRC 5013 5016 3-24-00</u> |
| Released By | <u>W 3-24-00</u> | <u>n/a</u> |
| Received | <u>RTM 3/27/00</u> | <u>RichRC5006</u> |
| Released By | <u>RTM 3/31/00</u> | <u>n/a</u> |
| Received | <u>M 3/31/00</u> | <u>RichRC0003</u> |
| Released By | <u>CO 4/3/00</u> | <u>n/a</u> |
| Received | <u>JM 4-3-00</u> | <u>RichRC 7.1</u> |
| Released By | <u>JM 4-3-00</u> | <u>n/a</u> |
| Received | <u>PK 4-3-00</u> | <u>RichRC0000</u> |
| Released By | <u>PK 4-3-00</u> | <u>n/a</u> |
| Received | <u>_____</u> | <u>_____</u> |
| Released By | <u>_____</u> | <u>n/a</u> |
| Received | <u>_____</u> | <u>_____</u> |



Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

ANALYTICAL REPORT

PROJECT NO. 100D AREA FULL

B99-005

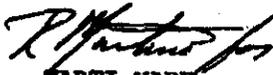
Lot #: POC230191

SDG #: W03121

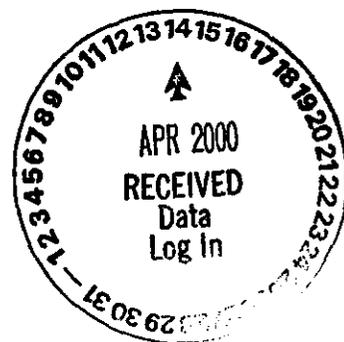
Joan Kessner

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

SEVERN TRENT LABORATORIES, INC.


MARTI WARD
Project Manager

April 12, 2000



RECEIVED
APR 14 REC'D
SAMPLING & ANALYSIS

10



CASE NARRATIVE
SDG: W03121

I. Introduction

On March 22, 2000, a sample was received by STL, Richland and transferred to STL, St. Louis for chemical analysis. The samples were received within temperature criteria. 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.

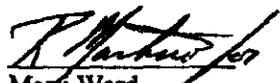
IV. Comments

Metals

The samples were prepared and analyzed with a LCS and a client specific MS and MSD.

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:


Mari Ward
St. Louis Project Manager

METHODS SUMMARY

W03121

| <u>PARAMETER</u> | <u>ANALYTICAL METHOD</u> | <u>PREPARATION METHOD</u> |
|---|------------------------------|-------------------------------|
| Mercury in Solid Waste (Manual Cold-Vapor) | SW846 7471A | SW846 7471A |
| Percent Moisture | MCAWW 160.3 MOD | MCAWW 160.3 MOD |
| RICHRD0003 | NONE SrTot by G | |
| RICHRD0007 | NONE Gamma by G | |
| RICHRD0008 | NONE AmIso by A | |
| RICHRD0008 | NONE PuIso by A | |
| RICHRD0008 | NONE UIso by AL | |
| Trace Inductively Coupled Plasma (ICP) Metals | SW846 6010B | SW846 3050B |

References:

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

NONE

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

W03121 : F0C230191

| <u>WO #</u> | <u>SAMPLE#</u> | <u>CLIENT</u> | <u>SAMPLE ID</u> | <u>DATE</u> | <u>TIME</u> |
|-------------|----------------|---------------|------------------|-------------|-------------|
| DAORE | 001 | BOXPT8 | | 03/21/00 | 14:30 |

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 limit.
- 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.

(Continued on next page)

PSL20300
Page 1

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

Run Date: 3/23/00
Time: 11:46:58
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 100D AREA FULL
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B99-005
AMOUNT REC'D: 120G
STORAGE LOC: R4B
LOT COMMENTS:
MATRIX: SOLID
SAMPLE ID: B0XPT8
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33619
LAB ID: F-0C230191-001
WORK ORDER: DAORE
RECEIVING DATE: 3/22/00
SAMPLING DATE: 3/21/00
ANALYTICAL DUE DATE: 4/05/00N
REPORT DUE DATE: 5/05/00
PRIORITY: 14
SAMPLING TIME: 14:30
RECEIVING TIME: 13:10
SDG# : W03121

Beginning Depth: .00 Ending Depth: .00

| | WRK LOC | REQUEST DATE | EXTRACTION EXP DATE | ANALYSIS EXP DATE |
|---|------------|-----------------|------------------------|----------------------|
| <u>***** ANALYSIS *****</u> | | | | |
| Moisture, Percent (160.3) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-WM-01) DAORE-1-01 Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 6/28/00 |
| Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S AG,AS,BA,CD,CR,PB (A-46-QM-01) DAORE Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 9/17/00 |
| Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-O9-01) DAORE Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 4/18/00 |

PSL20300
Page 1

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

Run Date: 3/23/00
Time: 11:46:58
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 100D AREA FULL
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B99-005
AMOUNT REC'D: 120G
STORAGE LOC: R4B
LOT COMMENTS:
MATRIX: SOLID
SAMPLE ID: BOXPT8
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33619
LAB ID: F-0C230191-001-D
WORK ORDER: DAORE MSD
RECEIVING DATE: 3/22/00
SAMPLING DATE: 3/21/00
ANALYTICAL DUE DATE: 4/05/00N
REPORT DUE DATE: 5/05/00
PRIORITY: 14
SAMPLING TIME: 14:30
RECEIVING TIME: 13:10
SDG# : W03121

Beginning Depth: .00 Ending Depth: .00

| | WRK LOC | REQUEST DATE | EXTRACTION EXP DATE | ANALYSIS EXP DATE |
|---|------------|-----------------|------------------------|----------------------|
| ***** ANALYSIS ***** | | | | |
| Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S AG,AS,BA,CD,CR,PB (A-46-QM-01) DAORE Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 9/17/00 |
| Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-O9-01) DAORE Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 4/18/00 |

PSL20300
Page 1

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

Run Date: 3/23/00
Time: 11:46:58
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 100D AREA FULL
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B99-005
AMOUNT REC'D: 120G
STORAGE LOC: R4B
LOT COMMENTS:
MATRIX: SOLID
SAMPLE ID: BOXPT8
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:

QUOTE/SAR #: 33619
LAB ID: F-0C230191-001-S
WORK ORDER: DAORE MS
RECEIVING DATE: 3/22/00
SAMPLING DATE: 3/21/00
ANALYTICAL DUE DATE: 4/05/00N
REPORT DUE DATE: 5/05/00
PRIORITY: 14
SAMPLING TIME: 14:30
RECEIVING TIME: 13:10
SDG# : W03121

Beginning Depth: .00 Ending Depth: .00

| ***** ANALYSIS ***** | | | | |
|---|------------|-----------------|------------------------|----------------------|
| | WRK LOC | REQUEST DATE | EXTRACTION EXP DATE | ANALYSIS EXP DATE |
| Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Soils MT6010_S AG,AS,BA,CD,CR,PB (A-46-QM-01) DAORE Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 9/17/00 |
| Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-O9-01) DAORE Protocol: A QC Program: STANDARD TEST SET | 06 | 3/23/00 | 0/00/00 | 4/18/00 |

W-21028

cut 205

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| | | | | | | |
|---|--|---|------------------------------------|--------------------------------------|---------------|----------------------------|
| Bechtel Hanford Inc. | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | B99-005-098 | Page 1 of 1 |
| Collector Kerkow/Congiff | Company Contact RB Kerkow | Telephone No. 531-0635 | Project Coordinator TRENT, SJ | | Price Code 8K | Data Turnaround 15 Days |
| Project Designation 100 D Area - Fuel Protocol | Sampling Location 100-D Area (100-D-52) | | SAF No. B99-005 | Air Quality <input type="checkbox"/> | | |
| Ice Chest No. ERC 99-050 | Field Logbook No. EL-1339-6 | COA R00D522600 | Method of Shipment Gov. Vehicle | | | |
| Shipped To Quanterra Incorporated | Offsite Property No. NA | BIN of Lading/Air Bill No. NA | | | | |

| | | | | | | | | | |
|--|---------------------------------|------|------|------|--|--|--|--|--|
| POSSIBLE SAMPLE HAZARDS/REMARKS Potentially Radioactive | Preservation | None | None | None | | | | | |
| | Type of Container | P | P | aG | | | | | |
| | No. of Container(s) | 1 | 1 | 1 | | | | | |
| | Special Handling and/or Storage | 1L | 20mL | 60mL | | | | | |

SDA The 46
W03121 SAMPLE ANALYSIS JOC220213

See item (1) in Special Instructions. Activity Scale. See item (2) in Special Instructions. rec'd. 3-24-00 100% fuel

TIE To ↓

| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | |
|--------------|----------|-------------|-------------|---|---|---|--|--|--------|
| BOXPT8 D9XNW | Soil | 3-21-00 | 14 30 | X | X | X | | | BOXIBS |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | | | | |
|-------------------------------------|---------------------------|----------------------------|---------------------------|--|--|--|--|------------------------------|
| CHAIN OF POSSESSION | | | | SPECIAL INSTRUCTIONS | | | | Matrix Complete without Case |
| Relinquished By JA Gossil/Gossil | Date/Time 3-21-00/1630 | Received By Fridge IA | Date/Time 3-21-00/1630 | (1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 - Total Sr (2) ICP Metals - 6010A (Supertrace) [Arsenic, Barium, Cadmium, Chromium, Lead, Silver]; Mercury - 7471 - (CV) | | | | |
| Relinquished By Ref IA | Date/Time 3-22-00/0900 | Received By R. Thoren | Date/Time 3-22-00/0900 | | | | | |
| Relinquished By R. Thoren | Date/Time 3-22-00/1300 | Received By K. Schenker | Date/Time 3-22-00/1300 | | | | | |
| Relinquished By K. Schenker | Date/Time 3-22-00/1600 | Received By K. Schenker | Date/Time 3-22-00/1600 | | | | | |
| Relinquished By | Date/Time | Received By | Date/Time | | | | | |
| Relinquished By | Date/Time | Received By | Date/Time | | | | | |

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

Severn Trent - St. Louis

Data is Incomplete without Case Narrative

Figure 1. Sample Check-in List

Date/Time Received: 3-22-00 1310 SDG#: W03121

Work Order Number: JOC220213 SAF#: B99-005

Shipping Container ID: ERC99-050 Chain of Custody #: B99005-098

- 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? Yes No
- 7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes No
- 8. Cooler temperature: 4°C (3 Bottles) Yes No
- 9. Vermiculite/packing materials is: Wet Dry

| | |
|---|--|
| 10. Samples have: <input checked="" type="checkbox"/> tape <input checked="" type="checkbox"/> custody seals | <input type="checkbox"/> hazard labels <input type="checkbox"/> appropriate sample labels |
| 11. Samples are: <input checked="" type="checkbox"/> in good condition <input type="checkbox"/> broken | <input type="checkbox"/> leaking <input type="checkbox"/> have air bubbles |

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

Sample Custodian/Laboratory: K. Heltman Date: 3-22-00

Telephone/Fax/E-mailed to: _____ By _____

Rad screen info. for

TMA/RICHMOND
SAMPLE DELIVERY GROUP H0767

FOC23091-001

R003036-06

BOX1B5

DATA SHEET

Copied to Christina Sutton 3.23.00 ^{AI-16} ^{SN}

| | | |
|-----------------------------------|-----------------------------------|------------------|
| SDG <u>7771</u> | Client/Case no <u>Hanford</u> | SDG <u>H0767</u> |
| Contact <u>Melissa C. Mannion</u> | Contract <u>TRB-SRR-207925</u> | |
| Lab sample id <u>R003036-06</u> | Client sample id <u>BOX1B5</u> | |
| Dept sample id <u>7771-006</u> | Location/Matrix <u>100-D-52</u> | <u>SOLID</u> |
| Received <u>03/08/00</u> | Collected <u>03/06/00 12:23</u> | |
| ↳ solids <u>100.0</u> | Custody/SAF No <u>B99-004-235</u> | <u>B99-004</u> |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI- FIERS | TEST |
|---------------|------------|-----------------|-------------------|--------------|--------------|-----------------|------|
| Cobalt 60 | 10198-40-0 | 0.224 | 0.051 | 0.035 | 0.050 | | GAM |
| Cesium 137 | 10045-97-3 | 0.194 | 0.055 | 0.058 | 0.10 | | GAM |
| Europium 152 | 14683-23-9 | 1.66 | 0.13 | 0.10 | 0.10 | | GAM |
| Europium 154 | 15585-10-1 | 0.169 | 0.17 | <u>0.20</u> | 0.10 | U | GAM |
| Europium 155 | 14391-16-3 | U | | <u>0.16</u> | 0.10 | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.19 | | U | GAM |

100 D Areas - Quick Turn

*TIE TO:
BOXPT8*

DATA SHEETS
Page 6
SUMMARY DATA SECTION
Page 15

| |
|-----------------------------|
| Lab id <u>TMAC</u> |
| Protocol <u>Hanford</u> |
| Version <u>Ver 1.0</u> |
| Form <u>PVD-DS</u> |
| Version <u>1.06</u> |
| Report date <u>03/13/00</u> |



000205

Lot No.: FOC230191

Condition Upon Receipt Variance Report
St. Louis Laboratory

W03121

Client: Bechtel

Date: 3.24.00 Time: 9:00

Quote No: 33619

Initiated by: SWA/10/02

Shipper/No: Carboine 004012652 416

RFA/COC Numbers: 1399-005-098

Condition/Variance (Check all that apply):

| | |
|---|--|
| 1. <input type="checkbox"/> Sample received broken/leaking. | 8. <input type="checkbox"/> Sample ID on container does not match sample ID on paperwork. Explain: _____ |
| 2. <input type="checkbox"/> Sample received without proper preservative. <input checked="" type="checkbox"/> Cooler temperature not within 4°C ± 2°C Record temperature: <u>10°</u> | |
| <input type="checkbox"/> pH _____ | 9. <input type="checkbox"/> All coolers on airbill not received with shipment. |
| <input type="checkbox"/> other: _____ | 10. <input type="checkbox"/> Sample volume insufficient for analysis |
| 3. <input type="checkbox"/> Sample received in improper container. | 11. <input type="checkbox"/> Other (explain below) |
| 4. <input type="checkbox"/> Sample received without proper paperwork. Explain: _____ | |
| 5. <input type="checkbox"/> Paperwork received without sample. | |
| 6. <input type="checkbox"/> No sample ID on sample container. | |
| 7. <input type="checkbox"/> Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply). | |

- No variances were noted during sample receipt.
- Cooler Temperature Upon Receipt in °C: 10°

Temperature Variance Does Not Affect the Following Analyses:

Notes: Blue ice still mostly frozen, just looks like they should have used more.

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) SWA/10/02 Date: 3.24.00

Project Management Review: MWard Date: 3.23.00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

BECHTEL HANFORD, INC.

Client Sample ID: BOXPT8

General Chemistry

Lot-Sample #...: F0C230191-001 Work Order #...: DA0RE Matrix.....: SOLID
Date Sampled...: 03/21/00 Date Received...: 03/22/00
‡ Moisture.....: 2.2

| <u>PARAMETER</u> | <u>RESULT</u> | <u>RL</u> | <u>UNITS</u> | <u>METHOD</u> | <u>PREPARATION- ANALYSIS DATE</u> | <u>PREP BATCH #</u> |
|------------------|---------------|--------------------|--------------|-----------------|---------------------------------------|-------------------------|
| Percent Moisture | 2.2 | 0.10 | ‡ | MCAWW 160.3 MOD | 03/28-03/29/00 | 0089168 |
| | | Dilution Factor: 1 | | MDL.....: | | |

BECHTEL HANFORD, INC.

Client Sample ID: BOXPT8

TOTAL Metals

Lot-Sample #....: FOC230191-001

Matrix.....: SOLID

Date Sampled...: 03/21/00

Date Received...: 03/22/00

% Moisture.....: 2.2

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
|---------------------------|--------|--------------------|-------|------------------|-------------------------------|-----------------|
| Prep Batch #....: 0088173 | | | | | | |
| Silver | ND | 0.51 | mg/kg | SW846 6010B | 03/28-04/01/00 | DAORE105 |
| | | Dilution Factor: 1 | | MDL.....: 0.10 | | |
| Arsenic | 1.2 | 1.0 | mg/kg | SW846 6010B | 03/28-04/01/00 | DAORE108 |
| | | Dilution Factor: 1 | | MDL.....: 0.20 | | |
| Barium | 71.1 | 20.4 | mg/kg | SW846 6010B | 03/28-04/01/00 | DAORE10C |
| | | Dilution Factor: 1 | | MDL.....: 0.092 | | |
| Cadmium | ND | 0.20 | mg/kg | SW846 6010B | 03/28-04/01/00 | DAORE10F |
| | | Dilution Factor: 1 | | MDL.....: 0.020 | | |
| Chromium | 6.1 | 0.51 | mg/kg | SW846 6010B | 03/28-04/01/00 | DAORE10J |
| | | Dilution Factor: 1 | | MDL.....: 0.092 | | |
| Lead | 1.3 | 0.31 | mg/kg | SW846 6010B | 03/28-04/01/00 | DAORE10M |
| | | Dilution Factor: 1 | | MDL.....: 0.15 | | |
| Prep Batch #....: 0094364 | | | | | | |
| Mercury | ND | 0.034 | mg/kg | SW846 7471A | 04/03-04/06/00 | DAORE102 |
| | | Dilution Factor: 1 | | MDL.....: 0.0072 | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #....: W03121

Matrix.....: SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
|--|--------|--------------------|-------|-------------|-------------------------------|-----------------|
| MB Lot-Sample #: F0D030000-364 Prep Batch #....: 0094364 | | | | | | |
| Mercury | ND | 0.033 | mg/kg | SW846 7471A | 04/03-04/06/00 | DAE20101 |
| | | Dilution Factor: 1 | | | | |
| MB Lot-Sample #: F0C280000-173 Prep Batch #....: 0088173 | | | | | | |
| Arsenic | ND | 1.0 | mg/kg | SW846 6010B | 03/28-04/01/00 | DA4XA10R |
| | | Dilution Factor: 1 | | | | |
| Barium | ND | 20.0 | mg/kg | SW846 6010B | 03/28-04/01/00 | DA4XA11N |
| | | Dilution Factor: 1 | | | | |
| Cadmium | ND | 0.20 | mg/kg | SW846 6010B | 03/28-04/01/00 | DA4XA11P |
| | | Dilution Factor: 1 | | | | |
| Chromium | ND | 0.50 | mg/kg | SW846 6010B | 03/28-04/01/00 | DA4XA11Q |
| | | Dilution Factor: 1 | | | | |
| Lead | ND | 0.30 | mg/kg | SW846 6010B | 03/28-04/01/00 | DA4XA10T |
| | | Dilution Factor: 1 | | | | |
| Silver | ND | 0.50 | mg/kg | SW846 6010B | 03/28-04/01/00 | DA4XA11R |
| | | Dilution Factor: 1 | | | | |

NOTE (S) :

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: W03121

Matrix.....: SOLID

| PARAMETER | SPIKE | MEASURED | UNITS | PERCNT | RPD | METHOD | PREPARATION- | PREP |
|-----------|--------|----------|-------|--------|-----|-------------|----------------|---------|
| | AMOUNT | AMOUNT | | RECVRY | | | ANALYSIS DATE | BATCH # |
| Mercury | 3.1 | 3.3 | mg/kg | 106 | | SW846 7471A | 04/03-04/06/00 | 0094364 |
| | 3.13 | 3.21 | mg/kg | 102 | 3.8 | SW846 7471A | 04/03-04/06/00 | 0094364 |

Dilution Factor: 5

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Results and reporting limits have been adjusted for dry weight.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: W03121

Matrix.....: SOLID

| <u>PARAMETER</u> | <u>SPIKE AMOUNT</u> | <u>MEASURED AMOUNT</u> | <u>UNITS</u> | <u>PERCENT RECVRY</u> | <u>METHOD</u> | <u>PREPARATION- ANALYSIS DATE</u> | <u>WORK ORDER #</u> |
|---|---------------------|------------------------|--------------------|-----------------------|---------------|-----------------------------------|---------------------|
| LCS Lot-Sample#: F0C280000-173 Prep Batch #...: 0088173 | | | | | | | |
| Lead | 97.8 | 103.2 | mg/kg | 106 | SW846 6010B | 03/28-04/01/00 | DA4XA11H |
| | | | Dilution Factor: 1 | | | | |
| Arsenic | 53.2 | 59.7 | mg/kg | 112 | SW846 6010B | 03/28-04/01/00 | DA4XA11M |
| | | | Dilution Factor: 1 | | | | |
| Barium | 112 | 122.0 | mg/kg | 109 | SW846 6010B | 03/28-04/01/00 | DA4XA11V |
| | | | Dilution Factor: 1 | | | | |
| Cadmium | 151 | 158.1 | mg/kg | 105 | SW846 6010B | 03/28-04/01/00 | DA4XA11W |
| | | | Dilution Factor: 1 | | | | |
| Chromium | 99.4 | 98.4 | mg/kg | 99 | SW846 6010B | 03/28-04/01/00 | DA4XA11X |
| | | | Dilution Factor: 1 | | | | |
| Silver | 107 | 118.3 | mg/kg | 111 | SW846 6010B | 03/28-04/01/00 | DA4XA120 |
| | | | Dilution Factor: 1 | | | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: W03121

Matrix.....: SOLID

Date Sampled...: 03/21/00

Date Received...: 03/22/00

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
|---|--------------------|-----------|-----------------|-------|---------------|------|-------------|----------------------------|--------------|
| MS Lot-Sample #: F0C230191-001 Prep Batch #...: 0088173 | | | | | | | | | |
| Arsenic | | | | | | | | | |
| | 1.2 | 409 | 395 | mg/kg | 96 | | SW846 6010B | 03/28-04/01/00 | DAORE109 |
| | 1.2 | 409 | 399 | mg/kg | 97 | 1.1 | SW846 6010B | 03/28-04/01/00 | DAORE10A |
| | Dilution Factor: 1 | | | | | | | | |
| Barium | | | | | | | | | |
| | 71.1 | 409 | 496 | mg/kg | 104 | | SW846 6010B | 03/28-04/01/00 | DAORE10D |
| | 71.1 | 409 | 499 | mg/kg | 105 | 0.52 | SW846 6010B | 03/28-04/01/00 | DAORE10E |
| | Dilution Factor: 1 | | | | | | | | |
| Cadmium | | | | | | | | | |
| | ND | 10.2 | 8.14 | mg/kg | 80 | | SW846 6010B | 03/28-04/01/00 | DAORE10G |
| | ND | 10.2 | 8.14 | mg/kg | 80 | 0.01 | SW846 6010B | 03/28-04/01/00 | DAORE10H |
| | Dilution Factor: 1 | | | | | | | | |
| Chromium | | | | | | | | | |
| | 6.1 | 40.9 | 44.4 | mg/kg | 94 | | SW846 6010B | 03/28-04/01/00 | DAORE10K |
| | 6.1 | 40.9 | 45.7 | mg/kg | 97 | 3.0 | SW846 6010B | 03/28-04/01/00 | DAORE10L |
| | Dilution Factor: 1 | | | | | | | | |
| Lead | | | | | | | | | |
| | 1.3 | 102 | 94.9 | mg/kg | 92 | | SW846 6010B | 03/28-04/01/00 | DAORE10N |
| | 1.3 | 102 | 95.5 | mg/kg | 92 | 0.62 | SW846 6010B | 03/28-04/01/00 | DAORE10P |
| | Dilution Factor: 1 | | | | | | | | |
| Silver | | | | | | | | | |
| | ND | 10.2 | 9.70 | mg/kg | 95 | | SW846 6010B | 03/28-04/01/00 | DAORE106 |
| | ND | 10.2 | 9.72 | mg/kg | 95 | 0.15 | SW846 6010B | 03/28-04/01/00 | DAORE107 |
| | Dilution Factor: 1 | | | | | | | | |

MS Lot-Sample #: F0C230191-001 Prep Batch #...: 0094364

Mercury

| | | | | | | | | | |
|--|--------------------|-------|-------|-------|-----|-----|-------------|----------------|----------|
| | ND | 0.170 | 0.179 | mg/kg | 105 | | SW846 7471A | 04/03-04/06/00 | DAORE103 |
| | ND | 0.170 | 0.184 | mg/kg | 108 | 2.8 | SW846 7471A | 04/03-04/06/00 | DAORE104 |
| | Dilution Factor: 1 | | | | | | | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
Results and reporting limits have been adjusted for dry weight.