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# FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010, FOR SAF S10-003

## Document No.: 20100281
## SDG: 222S20100281

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20100281

# 222-S LABORATORY

# FINAL REPORT FOR SAMPLES RECEIVED IN MARCH, 2010, FOR SAF S10-003

## 1.0 INTRODUCTION

This final report presents the results for ground water samples taken on March 11, 2010. The samples were analyzed in accordance with Sampling Authorization Form S10-003; and ATL-MP-1011; *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP). The following attachments are included in this report.

| | |
|---|---|
| Attachment 1 | Data Summary Report |
| Attachment 2 | Holding Time Report |
| Attachment 3 | Receipt Paperwork |
| Attachment 4 | Issue Resolution Form |

## 2.0 SAMPLE RECEIPT AND HANDLING

The samples were received on March 11, 2010, with adequate paperwork and appropriately preserved.

## 3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results. The "Det Limit" column in Attachment 1 contains the method detection limit (MDL).

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For analysis without a preparation step, this column is left blank.

The "Qual Flags" column in Attachment 1 contains data qualifier flags that are defined as follows:

- 'B" indicates that the reported result is greater than the MDL and less then the estimated quantitation limit( EQL).

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

### 3.1 ANALYSES

#### 3.1.1 Hexavalent Chromium by Spectrophotometric Determination

The hexavalent chromium analysis was performed on direct aliquots of the samples and included two analytical batches. For analytical batch 18330, the low level standard ( LLS ) recovery is 128% . For batch 18312, the LLS recovery is 141%. These recoveries are above the upper acceptance limit of 125%. The results for samples B24DV3 and B24DV4 might be biased slightly high. The remaining samples are unlikely to be affected.

Due to the absence of some of the quality control samples in the first run and high ending blank in the second run, six samples required reanalysis. The final analysis was performed outside the holding time, as indicated in Attachment 2. However, a comparison of the results obtained within the holding time period and those reported showed no significant difference. Therefore, it is the laboratory's opinion that the analysis outside the holding time for samples B24DR8, B24DR9, B24DW7, B24DW8, B24DX0, and B24DX1 did not affect the results. The missed holding time was reported to the customer on Issue Resolution Form # 10-066 (see Attachment 4).

## 4.0 PROCEDURES

Table 1 lists the analytical procedure used for analysis of this sample.

**Table 1. Analytical Procedures.**

| Analysis | Preparation Method | Analysis Procedure |
|---|---|---|
| Hexavalent Chromium Analysis by Spectrophotometric Determination | NA | SW846-7196A |

## 5.0 REFERENCES

ATL-MP-1011, 2009, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 9, Applied Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form S10-003; 2009, CH2M Hill, Plateau Remediation Company, Richland, Washington

Attachment 1

DATA SUMMARY REPORT

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**
**Customer Group or SDG Number: 222S20100281**
**Customer Sample ID: B24DR8**
**Customer Sample ID: B24DR8**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000229 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 105 | <9.00E-03 | 0.393 | 0.381 | 0.387 | 3.06 | 121 | 0.0108 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**
**Customer Group or SDG Number: 222S20100281**
**Customer Sample ID: B24DR9**
**Customer Sample ID: B24DR9**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000230 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 105 | <9.00E-03 | 0.376 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DT1**

**Customer Sample ID: B24DT1**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000221 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 103 | <9.00E-03 | 0.160 | 0.172 | 0.166 | 7.35 | 105 | 0.0108 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DT2**

**Customer Sample ID: B24DT2**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000222 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 103 | <9.00E-03 | 0.161 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DT4**

**Customer Sample ID: B24DT4**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000223 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 104 | <9.00E-03 | 5.75 | n/a | n/a | n/a | n/a | 0.0900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DT5**

**Customer Sample ID: B24DT5**

| Sample# R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000224 | | 18540-29-9 | Hexavalent Chromium | ug/mL | 104 | <9.00E-03 | 5.85 | n/a | n/a | n/a | n/a | 0.0900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**
**Customer Group or SDG Number: 222S20100281**
**Customer Sample ID: B24DT7**
**Customer Sample ID: B24DT7**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000225 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 104 | <9.00E-03 | 3.48 | n/a | n/a | n/a | n/a | 0.0900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**
**Customer Group or SDG Number: 222S20100281**
**Customer Sample ID: B24DT8**
**Customer Sample ID: B24DT8**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000226 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 104 | <9.00E-03 | 3.40 | n/a | n/a | n/a | n/a | 0.0900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DV0**

**Customer Sample ID: B24DV0**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000237 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 0.949 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DV1**

**Customer Sample ID: B24DV1**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000238 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 101 | <9.00E-03 | 0.940 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DV3**

**Customer Sample ID: B24DV3**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000239 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 101 | <9.00E-03 | 0.0419 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | B |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**
**Customer Group or SDG Number: 222S20100281**
**Customer Sample ID: B24DV4**
**Customer Sample ID: B24DV4**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000240 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 101 | <9.00E-03 | 0.0487 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DV9**

**Customer Sample ID: B24DV9**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000241 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 54.1 | n/a | n/a | n/a | n/a | 0.900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DW0**

**Customer Sample ID: B24DW0**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000242 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 53.8 | n/a | n/a | n/a | n/a | 0.900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DW1**

**Customer Sample ID: B24DW1**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000231 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 56.0 | n/a | n/a | n/a | n/a | 0.900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DW2**

**Customer Sample ID: B24DW2**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000232 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 55.3 | n/a | n/a | n/a | n/a | 0.900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DW4**

**Customer Sample ID: B24DW4**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000235 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 0.432 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DW5**

**Customer Sample ID: B24DW5**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000236 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 106 | <9.00E-03 | 0.398 | n/a | n/a | n/a | n/a | 9.68E-03 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

**WSCF - Anions & HexCr**
**Data Summary of All Results**

**Sample Group: 20100281**
**Customer Group or SDG Number: 222S20100281**
**Customer Sample ID: B24DW7**
**Customer Sample ID: B24DW7**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000233 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 105 | <9.00E-03 | 2.16 | n/a | n/a | n/a | n/a | 0.0360 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DW8**

**Customer Sample ID: B24DW8**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000234 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 105 | <9.00E-03 | 2.17 | n/a | n/a | n/a | n/a | 0.0360 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DX0**

**Customer Sample ID: B24DX0**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000243 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 105 | <9.00E-03 | 1.71 | n/a | n/a | n/a | n/a | 0.0360 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DX1**

**Customer Sample ID: B24DX1**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000244 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 105 | <9.00E-03 | 1.73 | n/a | n/a | n/a | n/a | 0.0360 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DX3**

**Customer Sample ID: B24DX3**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000227 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 104 | <9.00E-03 | 7.19 | n/a | n/a | n/a | n/a | 0.0900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

## WSCF - Anions & HexCr
## Data Summary of All Results

**Sample Group: 20100281**

**Customer Group or SDG Number: 222S20100281**

**Customer Sample ID: B24DX4**

**Customer Sample ID: B24DX4**

| Sample# | R | A# | CAS # | Analyte | Unit | STD % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Cnt Err % | Qual Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S10M000228 | | | 18540-29-9 | Hexavalent Chromium | ug/mL | 104 | <9.00E-03 | 7.10 | n/a | n/a | n/a | n/a | 0.0900 | n/a | |

NA = Not Analyzed, ND = Not Detectec

B - Estimated

Attachment 2

HOLDING TIME REPORT

Hold Time Report SDG No 222S20100281

| Sample Group | Sample | Matrix | Method | Sample Date | Received Date | Analysis Date | Missed Holding Time |
|---|---|---|---|---|---|---|---|
| 20100281 | S10M000231 | LIQUID | SW846-7196 | 03/11/10 08:25 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000232 | LIQUID | SW846-7196 | 03/11/10 08:25 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000241 | LIQUID | SW846-7196 | 03/11/10 08:25 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000242 | LIQUID | SW846-7196 | 03/11/10 08:25 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000223 | LIQUID | SW846-7196 | 03/11/10 08:45 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000224 | LIQUID | SW846-7196 | 03/11/10 08:45 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000237 | LIQUID | SW846-7196 | 03/11/10 09:05 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000238 | LIQUID | SW846-7196 | 03/11/10 09:05 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000239 | LIQUID | SW846-7196 | 03/11/10 09:43 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000240 | LIQUID | SW846-7196 | 03/11/10 09:43 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000225 | LIQUID | SW846-7196 | 03/11/10 10:02 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000226 | LIQUID | SW846-7196 | 03/11/10 10:02 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000235 | LIQUID | SW846-7196 | 03/11/10 10:34 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000236 | LIQUID | SW846-7196 | 03/11/10 10:34 | 03/11/10 13:30 | 03/11/10 22:00 | N |
| 20100281 | S10M000227 | LIQUID | SW846-7196 | 03/11/10 11:03 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000228 | LIQUID | SW846-7196 | 03/11/10 11:03 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000243 | LIQUID | SW846-7196 | 03/11/10 11:15 | 03/11/10 13:30 | 03/12/10 16:39 | **Y** |
| 20100281 | S10M000244 | LIQUID | SW846-7196 | 03/11/10 11:15 | 03/11/10 13:30 | 03/12/10 16:39 | **Y** |
| 20100281 | S10M000229 | LIQUID | SW846-7196 | 03/11/10 11:59 | 03/11/10 14:00 | 03/12/10 16:39 | **Y** |
| 20100281 | S10M000230 | LIQUID | SW846-7196 | 03/11/10 11:59 | 03/11/10 14:00 | 03/12/10 16:39 | **Y** |
| 20100281 | S10M000233 | LIQUID | SW846-7196 | 03/11/10 12:30 | 03/11/10 13:30 | 03/12/10 16:39 | **Y** |
| 20100281 | S10M000234 | LIQUID | SW846-7196 | 03/11/10 12:30 | 03/11/10 13:30 | 03/12/10 16:39 | **Y** |
| 20100281 | S10M000221 | LIQUID | SW846-7196 | 03/11/10 12:50 | 03/11/10 14:00 | 03/11/10 22:00 | N |
| 20100281 | S10M000222 | LIQUID | SW846-7196 | 03/11/10 12:50 | 03/11/10 14:00 | 03/11/10 22:00 | N |

Attachment 3

RECEIPT PAPERWORK

| ATL | SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST | LO-090-101 Rev D.D.1 |
|---|---|---|

Date Samples Received: 3.11.10 Group #: 20100281

Number of Samples: 10

Sample Custodian: [illegible]

**Sample Custodian to Complete:**

| Action | OK? (Y/N) | N/A | Comments |
|---|---|---|---|
| RSA/COC provided? | ✓ | | |
| RSR provided? | | ✓ | |
| Verify GKI is complete | | ✓ | on file |
| Check that outer custody seal is intact, if present | | ✓ | |
| Record cooler temperature in centigrade, as appropriate | ✓ | | ☐ Check if no cooler and/or no ice 2°C |
| Samples are intact and in good condition | ✓ | | If No, provide comments on back |
| Verify that COC or RSA is accurate and complete, containing the following information: | | | |
| • Client name and client sample number | ✓ | | |
| • Date and time of sampling | ✓ | | |
| • Sampling location or origin | ✓ | | |
| • Container type, size, and number | ✓ | | |
| • Analysis request is clear | ✓ | | |
| • Signature of persons relinquishing and receiving samples | ✓ | | |
| • Date and/or time of sample custody exchange | ✓ | | |
| Verify that sample numbers on containers match the COC and/or RSA | ✓ | | |
| Samples stored properly (e.g., refrigeration) | ✓ | | ZB Ref 118 |

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

**PM to Complete:**

Samples acceptable for release? yes PM Initials [illegible] Date 3.11.10

If No, comment on communication and resolution:

for JR Ritenour

Other Comments:

A-6005-342 (REV 0)

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-25

Page 1 of 1

| | | |
|---|---|---|
| Collector: ~~KE Hamilton~~ CHPRC | Contact/Requester: Karen Waters-Husted | Telephone No.: 376-4650 |
| SAF No.: S10-003 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071ES20 |
| Project Title: SURV, MARCH 2010 | Logbook No.: HNF-N-506 26 / 80 + 81 | Ice Chest No.: N/A |
| Shipped To (Lab): ~~Waste Sampling & Characterization~~ BB 3/11/10 BB 222-S | Method of Shipment: Government Vehicle | Bill of Lading/Air Bill No.: N/A |
| Protocol: SURV | Priority: 24 Hours **PRIORITY** | Offsite Property No.: N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 20100281 Sample # S10M000221 222

**SPECIAL INSTRUCTIONS** Hold Time

Site-Wide Generator Knowledge Information Form applies.

The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DT1 ✓ | Y | W | 3.11.10 | 1250 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DT2 ✓ | N | W | 3.11.10 | 1250 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

BC 3/11/10

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| KE Hamilton CHPRC | MAR 11 2010 1400 | | MAR 11 2010 1400 |
| | | | |
| | | | |
| | | | |

Matrix *

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

**FINAL SAMPLE DISPOSITION** Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-27

Page 1 of 1

| | | |
|---|---|---|
| Collector: KE Hamilton CHPRC | Contact/Requester: Karen Waters-Husted | Telephone No.: 376-4650 |
| SAF No.: S10-003 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071ES20 |
| Project Title: SURV, MARCH 2010 | Logbook No: HNF-N-506 26/80 | Ice Chest No.: N/A |
| Shipped To (Lab): Waste Sampling & Characterization BB 3/11/10 2225 | Method of Shipment: Government Vehicle | Bill of Lading/Air Bill No.: N/A |
| Protocol: SURV | Priority: 24 Hours PRIORITY | Offsite Property No.: N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 20100281 Sample # S10M000223 224

**SPECIAL INSTRUCTIONS** Hold Time

Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DT4 ✓ | Y | W | 3/11/10 | 0845 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DT5 ✓ | N | W | 3/11/10 | 0845 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

BB 3/11/10

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| KE Hamilton CHPRC | [signature] | [signature] | MAR 11 2010 14cc | [signature] | [signature] | 14cc | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S10-003-29**

Page 1 of 1

| | | |
|---|---|---|
| Collector: KE Hamilton CHPRC | Contact/Requester: Karen Waters-Husted | Telephone No.: 376-4650 |
| SAF No.: S10-003 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071ES20 |
| Project Title: SURV, MARCH 2010 | Logbook No: HNF-N-506 26/80 | Ice Chest No.: N/A |
| Shipped To (Lab): ~~Waste Sampling & Characterization~~ BB 3/11/10 2225 | Method of Shipment: Government Vehicle | Bill of Lading/Air Bill No.: N/A |
| Protocol: SURV | Priority: 24 Hours **PRIORITY** | Offsite Property No.: N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 20100281 Sample # S10M000225 226

**SPECIAL INSTRUCTIONS** Hold Time

Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DT7 | Y | W | 3-11-10 | 1002 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DT8 | N | W | 3-11-10 | 1002 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

bb 3/11/10

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| KE Hamilton CHPRC | Karen E Hamilton | | MAR 11 2010 1400 | R Steele | R Steele | 1400 | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S10-003-51**

Page 1 of 1

| | | |
|---|---|---|
| **Collector** KE Hamilton CHPRC | **Contact/Requester** Karen Waters-Husted | **Telephone No.** 376-4650 |
| **SAF No.** S10-003 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** 300071ES20 |
| **Project Title** SURV, MARCH 2010 | **Logbook No:** HNF-N-506 26 / 80 | **Ice Chest No.** N/A |
| **Shipped To (Lab)** ~~Waste Sampling & Characterization~~ BB 3.11.10 222 S | **Method of Shipment** Government Vehicle | **Bill of Lading/Air Bill No.** N/A |
| **Protocol** SURV | Priority: 24 Hours **PRIORITY** | **Offsite Property No.** N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 20100281 Sample # 227 228

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DX3 ✓ | Y | W | 3.11.10 | 1103 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DX4 ✓ | N | W | 3.11.10 | 1103 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

bb 3/11/10

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| KE Hamilton CHPRC | [signature] | | MAR 11 2010 1400 | [signature] | [signature] | 1400 | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

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

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-23

Page 1 of 1

| | | |
|---|---|---|
| Collector: ~~KE Hamilton~~ CHPRC | Contact/Requester: Karen Waters-Husted | Telephone No.: 376-4650 |
| SAF No.: S10-003 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071ES20 |
| Project Title: SURV, MARCH 2010 | Logbook No: HNF-N-506 26 / 80 | Ice Chest No.: N/A |
| Shipped To (Lab): ~~Waste Sampling & Characterization~~ BB 3/11/10 BB 3223 | Method of Shipment: Government Vehicle | Bill of Lading/Air Bill No.: N/A |
| Protocol: SURV | Priority: 24 Hours **PRIORITY** | Offsite Property No.: N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 20100281 Sample # 229 230

**SPECIAL INSTRUCTIONS** **Hold Time**

Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DR8 | Y | W | 3/11/10 | 1159 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DR9 | N | W | 3/11/10 | 1159 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

BB 3/11/10

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| ~~KE Hamilton~~ CHPRC | [illegible] | [illegible] | MAR 11 2010 1400 | [illegible] | [illegible] | [illegible] | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

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

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

| ATL | SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST | LO-090-101 Rev D.D.1 |
|---|---|---|

Date Samples Received: 3.11.10 Group #: ~~D.D.1~~ 20100281

Number of Samples: 14

Sample Custodian: [illegible]

**Sample Custodian to Complete:**

| Action | OK? (Y/N) | N/A | Comments |
|---|---|---|---|
| RSA/COC provided? | ✓ | | |
| RSR provided? | | ✓ | |
| Verify GKI is complete | | | |
| Check that outer custody seal is intact, if present | | | |
| Record cooler temperature in centigrade, as appropriate | ✓ | ✓ | ☐ Check if no cooler and/or no ice -1°C |
| Samples are intact and in good condition | ✓ | | If No, provide comments on back |
| Verify that COC or RSA is accurate and complete, containing the following information: | | | |
| • Client name and client sample number | ✓ | | |
| • Date and time of sampling | | | |
| • Sampling location or origin | | | |
| • Container type, size, and number | | | |
| • Analysis request is clear | | | |
| • Signature of persons relinquishing and receiving samples | | | |
| • Date and/or time of sample custody exchange | | | |
| Verify that sample numbers on containers match the COC and/or RSA | | | |
| Samples stored properly (e.g., refrigeration) | ✓ | | 2B Ref #4 |

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

**PM to Complete:**

Samples acceptable for release? Y PM Initials RK Date 3.11.10

If No, comment on communication and resolution: For JR Ritenour

Other Comments:

A-6005-342 (REV 0)

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-36

Page 1 of 1

| | | |
|---|---|---|
| Collector: S.J. Southerland CHPRC | Contact/Requester: Karen Waters-Husted | Telephone No.: 376-4650 |
| SAF No.: S10-003 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071ES20 |
| Project Title: SURV, MARCH 2010 3/11/10 AK | Logbook No: HNF-N-506 27163 | Ice Chest No.: N/A |
| Shipped To (Lab): Waste Sampling & Characterization | Method of Shipment: Government Vehicle | Bill of Lading/Air Bill No.: N/A |
| Protocol: SURV 2225 | Priority: 24 Hours **PRIORITY** | Offsite Property No.: N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 2225-20100281

Samples #
S10M000231
S10M000232

**SPECIAL INSTRUCTIONS** **Hold Time**
Site-Wide Generator Knowledge Information Form applies
The CACN for all analytical work at WSCT is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DW1 | Y | W | 3/11/10 | 0825 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DW2 | N | W | 3/11/10 | 0825 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10 AK

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| S.J. Southerland CHPRC | | | MAR 11 2010 1330 | RtSteele | RtSteele | | 1330 MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-43

Page 1 of 1

| | | |
|---|---|---|
| **Collector** S.J. Southerland CHPRC | **Contact/Requester** Karen Waters-Husted | **Telephone No.** 376-4650 |
| **SAF No.** S10-003 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** 300071ES20 |
| **Project Title** SURV, MARCH 2010 3/11/10 AB | **Logbook No:** HNF-N-506 27163 | **Ice Chest No.** N/A |
| **Shipped To (Lab)** Waste Sampling & Characterization | **Method of Shipment** Government Vehicle | **Bill of Lading/Air Bill No.** N/A |
| **Protocol** SURV 2225 | **Priority:** 24 Hours **PRIORITY** | **Offsite Property No.** N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group# 2225-20100281

Samples# S10M000233 S10M000234

**SPECIAL INSTRUCTIONS** Hold Time

Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DW7 ✓ | Y | W | 3/11/10 | 1230 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DW8 ✓ | N | W | 3/11/10 | 1230 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10 AB

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| S.J. Southerland CHPRC | | | 1330 MAR 11 2010 | | RtSteele | | 1330 MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-39

Page 1 of 1

| | | |
|---|---|---|
| **Collector** S.J. Southerland CHPRC | **Contact/Requester** Karen Waters-Husted | **Telephone No.** 376-4650 |
| **SAF No.** S10-003 | **Sampling Origin** Hanford Site | **Purchase Order/Charge Code** 300071ES20 |
| **Project Title** SURV, MARCH 2010 3/11/10 AM | **Logbook No:** HNF-N-506 27 / 63 | **Ice Chest No.** N/A |
| **Shipped To (Lab)** ~~Waste Sampling & Characterization~~ | **Method of Shipment** Government Vehicle | **Bill of Lading/Air Bill No.** N/A |
| **Protocol** SURV 222S | **Priority:** 24 Hours **PRIORITY** | **Offsite Property No.** N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 222S-20100281

Samples# S10M000235 S10M000236

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DW4 ✓ | Y | W | 3/11/10 | 1034 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DW5 ✓ | N | W | 3/11/10 | 1034 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10 AM

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| S.J. Southerland CHPRC | | | MAR 11 2010 1530 | | RASteele | 1330 | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liquid |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-31

Page 1 of 1

| | | |
|---|---|---|
| Collector S.J. Southerland CHPRC | Contact/Requester Karen Waters-Husted | Telephone No. 376-4650 |
| SAF No. S10-003 | Sampling Origin Hanford Site | Purchase Order/Charge Code 300071ES20 |
| Project Title SURV MARCH 2010 | Logbook No: HNF-N-506 27163 | Ice Chest No. N/A |
| Shipped To (Lab) 3/11/10 [redacted] | Method of Shipment Government Vehicle | Bill of Lading/Air Bill No. N/A |
| Protocol SURV 2225 | Priority: 24 Hours **PRIORITY** | Offsite Property No. N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 2225 - 20100281

Sample # S10M000237 S10M000238

**SPECIAL INSTRUCTIONS** **Hold Time**
Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DV0 ✓ | Y | W | 3/11/10 | 0905 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DV1 ✓ | N | W | 3/11/10 | 0905 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| S.J. Southerland CHPRC | | | MAR 11 2010 1350 | | | | MAR 11 2010 1330 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

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

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

| CHPRC | 20100281<br>**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | C.O.C. # **S10-003-33**<br>Page 1 of 1 |
|---|---|---|

| | | |
|---|---|---|
| Collector S.J. Southerland CHPRC | Contact/Requester Karen Waters-Husted | Telephone No. 376-4650 |
| SAF No. S10-003 | Sampling Origin Hanford Site | Purchase Order/Charge Code 300071ES20 |
| Project Title SURV, MARCH 2010 | Logbook No: HNF-N-506 27163 | Ice Chest No. N/A |
| Shipped To (Lab) 3/11/10 [illegible] ~~Waste Sampling & Characterization~~ | Method of Shipment Government Vehicle | Bill of Lading/Air Bill No. N/A |
| Protocol SURV 2225 | Priority: 24 Hours **PRIORITY** | Offsite Property No. N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)
Group # 2225-20100281
Sample # S10M000239 S10M000240

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DV3 | Y | W | 3/11/10 | 0943 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DV4 | N | W | 3/11/10 | 0943 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10 [illegible]

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| 3/11/10 N ~~SE Hamaker~~ CHPRC | S.J. Southerland CHPRC | S.J. Southerland CHPRC [signature] | MAR 11 2010 1330 | [signature] | [signature] | 1330 | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-35

Page 1 of 1

| | | |
|---|---|---|
| Collector S.J. Southerland CHPRC | Contact/Requester Karen Waters-Husted | Telephone No. 376-4650 |
| SAF No. S10-003 | Sampling Origin Hanford Site | Purchase Order/Charge Code 300071ES20 |
| Project Title SURV, MARCH 2010 3/11/10 AP | Logbook No: HNF-N-506 27/63 | Ice Chest No. N/A |
| Shipped To (Lab) ~~Waste Sampling & Characterization~~ | Method of Shipment Government Vehicle | Bill of Lading/Air Bill No. N/A |
| Protocol SURV 222S | Priority: 24 Hours **PRIORITY** | Offsite Property No. N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 222S - 20100281

Sample # S10M000241 S10M000242

**SPECIAL INSTRUCTIONS** Hold Time

Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes ☑ No ☐

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DV9 ✓ | Y | W | 3/11/10 | 0825 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DW0 ✓ | N | W | 3/11/10 | 0825 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10 AP

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| S.J. Southerland CHPRC | [signature] | | MAR 11 2010 1330 | RJSteele | RJSteele | 1330 | MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S | = Soil | DS | = Drum Solid |
| SE | = Sediment | DL | = Drum Liqui |
| SO | = Solid | T | = Tissue |
| SL | = Sludge | WI | = Wine |
| W | = Water | L | = Liquid |
| O | = Oil | V | = Vegetation |
| A | = Air | X | = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

CHPRC

20100281

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S10-003-47

Page 1 of 1

| | | |
|---|---|---|
| Collector: S.J. Southerland ~~CHPRC~~ | Contact/Requester: Karen Waters-Husted | Telephone No.: 376-4650 |
| SAF No.: S10-003 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071ES20 |
| Project Title: SURV MARCH 2010 3/11/10 | Logbook No: HNF-N-506 27163 | Ice Chest No.: N/A |
| Shipped To (Lab): ~~Waste Sampling & Characterization~~ | Method of Shipment: Government Vehicle | Bill of Lading/Air Bill No.: N/A |
| Protocol: SURV 2225 | Priority: 24 Hours **PRIORITY** | Offsite Property No.: N/A |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

Group # 2225-20100281

Sample # S10M000243 S10M000244

**SPECIAL INSTRUCTIONS** **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Site-Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B24DX0 ✓ | Y | W | 3/11/10 | 1115 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |
| B24DX1 ✓ | N | W | 3/11/10 | 1115 | 1x500-mL aG | 7196_CR6: Hexavalent Chromium (1) | 24 Hours | Cool~4C |

N/A 3/11/10 DH

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| S.J. Southerland ~~CHPRC~~ | | | 1330 MAR 11 2010 | RSHeck | | | 1330 MAR 11 2010 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SO = Solid | | T = Tissue | |
| SL = Sludge | | WI = Wine | |
| W = Water | | L = Liquid | |
| O = Oil | | V = Vegetation | |
| A = Air | | X = Other | |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time |
|---|---|---|---|

**20100281**

**222-S**
WRPS, P. O. Box 850
Richland, WA
Phone: (509) 376-5029 / FAX: (509) 372-1878

## ACKNOWLEDGMENT OF SAMPLES RECEIVED

Sample Group: 20100281

Specification Entity: WSCF - Anions & HexCr - CACN/COA 75A/401647

The following samples were received from you on 03/11/2010. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using 222-S.

| Sample<br>Tests Scheduled | Customer Sample ID | Matrix | Sample Date |
|---|---|---|---|
| S10M000221<br>CHROMIUM VI | B24DT1 | LIQUID | 03/11/2010 |
| S10M000222<br>CHROMIUM VI | B24DT2 | LIQUID | 03/11/2010 |
| S10M000223<br>CHROMIUM VI | B24DT4 | LIQUID | 03/11/2010 |
| S10M000224<br>CHROMIUM VI | B24DT5 | LIQUID | 03/11/2010 |
| S10M000225<br>CHROMIUM VI | B24DT7 | LIQUID | 03/11/2010 |
| S10M000226<br>CHROMIUM VI | B24DT8 | LIQUID | 03/11/2010 |
| S10M000227<br>CHROMIUM VI | B24DX3 | LIQUID | 03/11/2010 |
| S10M000228<br>CHROMIUM VI | B24DX4 | LIQUID | 03/11/2010 |
| S10M000229<br>CHROMIUM VI | B24DR8 | LIQUID | 03/11/2010 |
| S10M000230<br>CHROMIUM VI | B24DR9 | LIQUID | 03/11/2010 |
| S10M000231<br>CHROMIUM VI | B24DW1 | LIQUID | 03/11/2010 |
| S10M000232<br>CHROMIUM VI | B24DW2 | LIQUID | 03/11/2010 |
| S10M000233<br>CHROMIUM VI | B24DW7 | LIQUID | 03/11/2010 |
| S10M000234<br>CHROMIUM VI | B24DW8 | LIQUID | 03/11/2010 |
| S10M000235<br>CHROMIUM VI | B24DW4 | LIQUID | 03/11/2010 |
| S10M000236<br>CHROMIUM VI | B24DW5 | LIQUID | 03/11/2010 |
| S10M000237<br>CHROMIUM VI | B24DV0 | LIQUID | 03/11/2010 |
| S10M000238<br>CHROMIUM VI | B24DV1 | LIQUID | 03/11/2010 |
| S10M000239<br>CHROMIUM VI | B24DV3 | LIQUID | 03/11/2010 |
| S10M000240<br>CHROMIUM VI | B24DV4 | LIQUID | 03/11/2010 |
| S10M000241<br>CHROMIUM VI | B24DV9 | LIQUID | 03/11/2010 |

# ACKNOWLEDGMENT OF SAMPLES RECEIVED

Sample Group: 20100281

Specification Entity: WSCF - Anions & HexCr - CACN/COA 75A/401647

| Sample<br>Tests Scheduled | Customer Sample ID | Matrix | Sample Date |
|---|---|---|---|
| S10M000242<br>CHROMIUM VI | B24DW0 | LIQUID | 03/11/2010 |
| S10M000243<br>CHROMIUM VI | B24DX0 | LIQUID | 03/11/2010 |
| S10M000244<br>CHROMIUM VI | B24DX1 | LIQUID | 03/11/2010 |

## Test Acronym Description

| Test Acronym | Description |
|---|---|
| CHROMIUM VI | Chromium (VI) by Spec. |

# GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number NA CACN/COA NA Customer Identification Number NA

2. List generator knowledge or description of process that produced sample. Or list description of sample source:
Sitewide S&GRP Characterization and Monitoring Sampling and Analysis

MSDS Available? (●) No ( ) Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?
***By checking "unknown" the customer understands that no knowledge is available following a careful search.***

| | List Federal Waste Code(s): | List Constituent(s): | | | |
|---|---|---|---|---|---|
| P Codes: | | | ( ) Yes | (●) No | ( ) Unknown |
| U Codes: | | | ( ) Yes | (●) No | ( ) Unknown |
| K Codes: | | | ( ) Yes | (●) No | ( ) Unknown |
| F Codes: | F001 - F005; F039 | | (●) Yes | ( ) No | ( ) Unknown |

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

| | | | | | | |
|---|---|---|---|---|---|---|
| D001: | ☐ FP <100°F | ☐ FP ≥100 <140°F | ☐ DOT Oxidizer | ( ) Yes | (●) No | ( ) Unknown |
| D002: | ☐ pH ≤2 | ☐ pH ≥12.5 | ☐ Solid Corrosive (WSC2) | ( ) Yes | (●) No | ( ) Unknown |
| D003: | ☐ Cyanide | ☐ Sulfide | ☐ Water Reactive ☐ Other _____ (i.e., peroxide former, explosive, air reactive) | ( ) Yes | (●) No | ( ) Unknown |
| D004-D043 (Identify applicable waste codes and concentrations): | | | | ( ) Yes | (●) No | ( ) Unknown |

N/A

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):
N/A

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):
N/A

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

| | | | |
|---|---|---|---|
| WT01: | ( ) Yes | (●) No | ( ) Unknown |
| WT02: | ( ) Yes | (●) No | ( ) Unknown |
| W001: | ( ) Yes | (●) No | ( ) Unknown |

(*State mixture rule for ignitability)

| | | | |
|---|---|---|---|
| WP01: | ( ) Yes | (●) No | ( ) Unknown |
| WP02: | ( ) Yes | (●) No | ( ) Unknown |
| WP03: | ( ) Yes | (●) No | ( ) Unknown |
| F003:* | ( ) Yes | (●) No | ( ) Unknown |

List constituents and concentrations:
N/A

4. Is this material TSCA regulated for PCBs? ( ) Yes (●) No ( ) Unknown ( ) Analysis Requested

List concentration if applicable: _____

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste ☐ PCB Bulk Product Waste ☐ PCB Transformer ≥500 ppm ☐ Unknown
☐ PCB Remediation Waste ☐ PCB R&D Waste ☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm
☐ PCB Spill Material ☐ PCB Item ☐ Other PCB Waste (list) _____

5. Is this material TRU? ( ) Yes (●) No ( ) Unknown

6. ACCURACY OF INFORMATION
Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign [signature] / S J TRENT Date 4/9/07



A-6002-990 (08/03)

Attachment 4

ISSUE RESOLUTION FORM

**20100281**
**ISSUE RESOLUTION FORM**

**CHPRC TRACKING NUMBER:** 10-066

Date : **3/16/10** SAF No.: **See table**

SDG: **See table**
LOGIN No.: **See attached table**
TEST: **Hexavalent Chromium**
Sample No.(s) **See table**

Submitted By: G. P. Ritenour
Phone No: 372-2742
Fax No.: 373-4884

Submitted To: Hedi Hampt
Phone No. 376-4319
Fax No. 373-1788

**ISSUE**

Samples in the table below were originally analyzed with 26 samples in the batch (Run 1) without sufficient QC (missing DUP and Spike, instrument QC OK). The last 6 samples from the 1st run were reanalyzed with sufficient QC. In the 2nd run the closing CCB contained HexCr at >5% of sample results and was above the quantitation limit. The 1st and 2nd runs were within holding time. In the 3rd run all QC passes, but was outside of holding time.

**PROPOSED RESOLUTION**

Since all 3 results are within expected statistically error no impact on data quality. Report 3rd run and note in narrative.

**CHPRC/BHI/WMH/PNNL COMMENTS**

Accept proposed resolution.

Heidi Hampt 3/23/10
Signature and Date

| SAF # | Sample Group | Heis # | Sample | Method | Sample Date | Received Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| S10-003 | 20100281 | B24DR8 | S10M000229 | CHROMIUM VI | 03/11/10 11:59 | 03/11/10 14:00 | 3/12/2010 19:39 |
| S10-003 | 20100281 | B24DR9 | S10M000230 | CHROMIUM VI | 03/11/10 11:59 | 03/11/10 14:00 | 3/12/2010 19:39 |
| S10-003 | 20100281 | B24DW7 | S10M000233 | CHROMIUM VI | 03/11/10 12:30 | 03/11/10 13:30 | 3/12/2010 19:39 |
| S10-003 | 20100281 | B24DW8 | S10M000234 | CHROMIUM VI | 03/11/10 12:30 | 03/11/10 13:30 | 3/12/2010 19:39 |
| S10-003 | 20100281 | B24DX0 | S10M000243 | CHROMIUM VI | 03/11/10 11:15 | 03/11/10 13:30 | 3/12/2010 19:39 |
| S10-003 | 20100281 | B24DX1 | S10M000244 | CHROMIUM VI | 03/11/10 11:15 | 03/11/10 13:30 | 3/12/2010 19:39 |

| Sample | Run 1 | Run 2 | Run 3 |
|---|---|---|---|
| S10M000229 | 0.391 | 0.400 | 0.393 |
| S10M000230 | 0.394 | 0.384 | 0.381 |
| S10M000233 | 1.99 | 2.25 | 2.16 |
| S10M000234 | 2.01 | 2.31 | 2.17 |
| S10M000243 | 1.76 | 1.90 | 1.71 |
| S10M000244 | 1.77 | 1.94 | 1.73 |