**Eberline Services**
**W.O. No. R1-01-006-7602**
**R1-01-018-7604**

**Bechtel Hanford Inc.**
**SDG H1200**

**Case Narrative**



## 1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H11200 was composed of thirteen water samples designated under SAF No. C01-008 with a Project Designation of: 100HR3 IAM (1 & 2) GW Monitoring, November 2000.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

## 2.0 ANALYSIS NOTES

### 2.1 Gross Alpha and Gross Beta Analyses

There was contamination in the gross beta method blank (2.49 pCi/L) associated with samples B10LK7, B10LL1, B10LL3, B10LN5, B10LN7, and B10LP1. The activity was below the RDL (4 pCi/L) for gross beta analysis. No other problems were encountered during the course of the analyses.

### 2.2 Tritium Analyses

No problems were encountered during the course of the analyses.

**Case Narrative Certification Statement**

**"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."**

Melissa Mannion — 2/15/01

**Melissa C. Mannion**
**Program Manager**

**Date**

RECEIVED
JUN 11 2001
EDMC

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## SAMPLE SUMMARY

SDG 7602
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| CLIENT SAMPLE ID | LOCATION | MATRIX | LEVEL | LAB SAMPLE ID | SAF NO | CHAIN OF CUSTODY | COLLECTED |
|---|---|---|---|---|---|---|---|
| B10LK7 | HANFORD SITE | WATER | | R101006-06 | C01-008 | C01-008-26 | 01/02/01 12:08 |
| B10LL1 | HANFORD SITE | WATER | | R101006-04 | C01-008 | C01-008-22 | 01/02/01 11:06 |
| B10LL3 | HANFORD SITE | WATER | | R101006-05 | C01-008 | C01-008-23 | 01/02/01 11:06 |
| B10LN5 | HANFORD SITE | WATER | | R101006-03 | C01-008 | C01-008-20 | 01/02/01 12:44 |
| B10LN7 | HANFORD SITE | WATER | | R101006-02 | C01-008 | C01-008-18 | 01/02/01 12:01 |
| B10LP1 | HANFORD SITE | WATER | | R101006-01 | C01-008 | C01-008-14 | 01/02/01 09:21 |
| Method Blank | | WATER | | R101006-08 | C01-008 | | |
| Lab Control Sample | | WATER | | R101006-07 | C01-008 | | |
| Duplicate (R101006-03) | HANFORD SITE | WATER | | R101006-09 | C01-008 | | 01/02/01 12:44 |
| Spike (R101006-03) | HANFORD SITE | WATER | | R101006-10 | C01-008 | | 01/02/01 12:44 |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## QC SUMMARY

SDG 7602
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| QC BATCH | CHAIN OF CUSTODY | CLIENT SAMPLE ID | MATRIX | % SOLIDS | SAMPLE AMOUNT | BASIS AMOUNT | DAYS SINCE RECEIVED | DAYS SINCE COLL | LAB SAMPLE ID | DEPARTMENT SAMPLE ID |
|---|---|---|---|---|---|---|---|---|---|---|
| 7602 | C01-008-14 | B10LP1 | WATER | | | | 01/04/01 | 2 | R101006-01 | 7602-001 |
| | C01-008-18 | B10LN7 | WATER | | | | 01/04/01 | 2 | R101006-02 | 7602-002 |
| | C01-008-20 | B10LN5 | WATER | | | | 01/04/01 | 2 | R101006-03 | 7602-003 |
| | C01-008-22 | B10LL1 | WATER | | | | 01/04/01 | 2 | R101006-04 | 7602-004 |
| | C01-008-23 | B10LL3 | WATER | | | | 01/04/01 | 2 | R101006-05 | 7602-005 |
| | C01-008-26 | B10LK7 | WATER | | | | 01/04/01 | 2 | R101006-06 | 7602-006 |
| | | Method Blank | WATER | | | | | | R101006-08 | 7602-008 |
| | | Lab Control Sample | WATER | | | | | | R101006-07 | 7602-007 |
| | | Duplicate (R101006-03) | WATER | | | | 01/04/01 | 2 | R101006-09 | 7602-009 |
| | | Spike (R101006-03) | WATER | | | | 01/04/01 | 2 | R101006-10 | 7602-010 |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## PREP BATCH SUMMARY

SDG 7602
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| TEST | MATRIX | METHOD | PREPARATION BATCH | ERROR 2σ % | PLANCHETS ANALYZED CLIENT | MORE | RE | BLANK | LCS | DUP/ORIG | MS/ORIG | QUALIFIERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Proportional Counting | | | | | | | | | | | | |
| 82B | WATER | Gross Beta in Water | 6963-039 | 15.0 | 6 | | | 1 | 1 | 1/1 | | |
| 88A | WATER | Gross Alpha in Water | 6963-039 | 20.0 | 6 | | | 1 | 1 | 1/1 | | |
| Liquid Scintillation Counting | | | | | | | | | | | | |
| H | WATER | Tritium in Water | 6963-039 | 10.0 | 6 | | | 1 | 1 | 1/1 | 1/1 | X |

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## WORK SUMMARY

SDG 7602
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| CLIENT SAMPLE ID / LOCATION / CUSTODY | SAF No | MATRIX | LAB SAMPLE ID / COLLECTED / RECEIVED | PLANCHET | TEST | SUF-FIX | ANALYZED | REVIEWED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| B10LK7 | | | R101006-06 | 7602-006 | 82B/82 | | 01/31/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-006 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| C01-008-26 | C01-008 | | 01/04/01 | 7602-006 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| B10LL1 | | | R101006-04 | 7602-004 | 82B/82 | | 01/30/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-004 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| C01-008-22 | C01-008 | | 01/04/01 | 7602-004 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| B10LL3 | | | R101006-05 | 7602-005 | 82B/82 | | 01/30/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-005 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| C01-008-23 | C01-008 | | 01/04/01 | 7602-005 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| B10LN5 | | | R101006-03 | 7602-003 | 82B/82 | | 01/24/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-003 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| C01-008-20 | C01-008 | | 01/04/01 | 7602-003 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| B10LN7 | | | R101006-02 | 7602-002 | 82B/82 | | 01/26/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-002 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| C01-008-18 | C01-008 | | 01/04/01 | 7602-002 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| B10LP1 | | | R101006-01 | 7602-001 | 82B/82 | | 01/24/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-001 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| C01-008-14 | C01-008 | | 01/04/01 | 7602-001 | H | | 01/13/01 | 02/13/01 | MCM | Tritium in Water |
| Method Blank | | | R101006-08 | 7602-008 | 82B/82 | | 01/31/01 | 02/13/01 | MCM | Gross Beta in Water |
| | | WATER | | 7602-008 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| | C01-008 | | | 7602-008 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| Lab Control Sample | | | R101006-07 | 7602-007 | 82B/82 | | 02/03/01 | 02/13/01 | MCM | Gross Beta in Water |
| | | WATER | | 7602-007 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| | C01-008 | | | 7602-007 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| Duplicate (R101006-03) | | | R101006-09 | 7602-009 | 82B/82 | | 01/31/01 | 02/13/01 | MCM | Gross Beta in Water |
| HANFORD SITE | | WATER | 01/02/01 | 7602-009 | 88A/88 | | 01/25/01 | 02/13/01 | MCM | Gross Alpha in Water |
| | C01-008 | | 01/04/01 | 7602-009 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| Spike (R101006-03) | | | R101006-10 | 7602-010 | H | | 01/14/01 | 02/13/01 | MCM | Tritium in Water |
| HANFORD SITE | | WATER | 01/02/01 | | | | | | | |
| | C01-008 | | 01/04/01 | | | | | | | |

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

SDG 7602
Contact Melissa C. Mannion

## WORK SUMMARY, cont.

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

### COUNTS OF TESTS BY SAMPLE TYPE

| TEST | SAF No | METHOD | REFERENCE | CLIENT | MORE | RE | BLANK | LCS | DUP | SPIKE | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 82B/82 | C01-008 | Gross Beta in Water | 900.0_ALPHABETA_GPC | 6 | | | 1 | 1 | 1 | | 9 |
| 88A/88 | C01-008 | Gross Alpha in Water | 900.0_ALPHABETA_GPC | 6 | | | 1 | 1 | 1 | | 9 |
| H | C01-008 | Tritium in Water | 906.0_H3_LSC | 6 | | | 1 | 1 | 1 | 1 | 10 |
| TOTALS | | | | 18 | | | 3 | 3 | 3 | 1 | 28 |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 02/15/01

# TMA / RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101006-08

Method Blank

## METHOD BLANK

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101006-08 | Client sample id | Method Blank | | |
| Dept sample id | 7602-008 | Material/Matrix | | WATER | |
| | | SAF No | C01-008 | | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0 | 0 | 1.0 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 2.49 | 1.5 | 2.3 | 4.0 | J | 82B |
| Tritium | 10028-17-8 | 65.2 | 190 | 310 | 400 | U | H |

100HR3 IAM (1&2) GW MON. NOV. 2000

QC-BLANK 37238

| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

R101006-07

Lab Control Sample

## LAB CONTROL SAMPLE

SDG 7602
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1200
Case no TRC-SBB-207925

Lab sample id R101006-07
Dept sample id 7602-007

Client sample id Lab Control Sample
Material/Matrix WATER
SAF No C01-008

| ANALYTE | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST | ADDED pCi/L | 2σ ERR pCi/L | REC % | 3σ LMTS (TOTAL) | PROTOCOL LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Alpha | 60.3 | 4.6 | 1.3 | 3.0 | | 88A | 71.7 | 2.9 | 84 | 72-128 | 70-130 |
| Gross Beta | 69.7 | 3.4 | 1.8 | 4.0 | B | 82B | 80.3 | 3.2 | 87 | 79-121 | 70-130 |
| Tritium | 22100 | 590 | 310 | 400 | | H | 23800 | 950 | 93 | 84-116 | 80-120 |

100HR3 IAM (1&2) GW MON. NOV. 2000

QC-LCS 37237

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

R101006-09 B10LN5

## DUPLICATE

| | | | |
|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | Case no | TRC-SBB-207925 |
| DUPLICATE | | ORIGINAL | |
| Lab sample id | R101006-09 | Lab sample id | R101006-03 |
| Dept sample id | 7602-009 | Dept sample id | 7602-003 |
| | | Received | 01/04/01 |
| Client sample id | B10LN5 | | |
| Location/Matrix | HANFORD SITE WATER | | |
| Collected | 01/02/01 12:44 | | |
| Custody/SAF No | C01-008-20 C01-008 | | |

| ANALYTE | DUPLICATE pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST | ORIGINAL pCi/L | 2σ ERR (COUNT) | MDA pCi/L | QUALI-FIERS | RPD % | 3σ TOT | PROT LIMIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Alpha | 0.657 | 1.6 | 3.0 | 3.0 | U | 88A | 0.153 | 1.5 | 2.6 | U | - | | |
| Gross Beta | 8.38 | 2.0 | 2.9 | 4.0 | | 82B | 7.01 | 1.5 | 1.9 | B | 18 | 58 | |
| Tritium | 15800 | 350 | 160 | 400 | | H | 15800 | 350 | 150 | | 0 | 22 | |

100HR3 IAM (1&2) GW MON. NOV. 2000

QC-DUP#3 37239

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 02/15/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

R101006-10

B10LN5

# MATRIX SPIKE

| | | | |
|---|---|---|---|
| SDG 7602 | | Client/Case no Hanford | SDG H1200 |
| Contact Melissa C. Mannion | | Case no TRC-SBB-207925 | |
| MATRIX SPIKE | ORIGINAL | | |
| Lab sample id R101006-10 | Lab sample id R101006-03 | Client sample id B10LN5 | |
| Dept sample id 7602-010 | Dept sample id 7602-003 | Location/Matrix HANFORD SITE | WATER |
| | Received 01/04/01 | Collected 01/02/01 12:44 | |
| | | Custody/SAF No C01-008-20 | C01-008 |

| ANALYTE | SPIKE pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST | ADDED pCi/L | 2σ ERR pCi/L | ORIGINAL pCi/L | 2σ ERR (COUNT) | REC % | 3σ LMTS (TOTAL) | PROTOCOL LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tritium | 114000 | 1200 | 210 | 400 | X | H | 101000 | 4000 | 15800 | 350 | 97 | 82-118 | 60-140 |

100HR3 IAM (1&2) GW MON. NOV. 2000

QC-MS#3 37240

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-MS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101006-06** **B10LK7**

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101006-06 | Client sample id | B10LK7 | | |
| Dept sample id | 7602-006 | Location/Matrix | HANFORD SITE | WATER | |
| Received | 01/04/01 | Collected | 01/02/01 12:08 | | |
| | | Custody/SAF No | C01-008-26 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 3.41 | 1.9 | 2.3 | 3.0 | | 88A |
| Gross Beta | 12587-47-2 | 74.9 | 3.7 | 2.4 | 4.0 | B | 82B |
| Tritium | 10028-17-8 | 60.3 | 92 | 150 | 400 | U | H |

100HR3 IAM (1&2) GW MON. NOV. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND
## SAMPLE DELIVERY GROUP H1200

R101006-04 B10LL1

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101006-04 | Client sample id | B10LL1 | | |
| Dept sample id | 7602-004 | Location/Matrix | HANFORD SITE | WATER | |
| Received | 01/04/01 | Collected | 01/02/01 11:06 | | |
| | | Custody/SAF No | C01-008-22 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 2.46 | 1.7 | 2.3 | 3.0 | J | 88A |
| Gross Beta | 12587-47-2 | 6.90 | 2.0 | 2.8 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 14900 | 340 | 150 | 400 | | H |

100HR3 IAM (1&2) GW MON. NOV. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101006-05 B10LL3

## DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 |
| Lab sample id | R101006-05 | Client sample id | B10LL3 |
| Dept sample id | 7602-005 | Location/Matrix | HANFORD SITE WATER |
| Received | 01/04/01 | Collected | 01/02/01 11:06 |
| | | Custody/SAF No | C01-008-23 C01-008 |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 1.64 | 1.5 | 2.3 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 7.55 | 1.7 | 2.2 | 4.0 | B | 82B |
| Tritium | 10028-17-8 | 15200 | 350 | 160 | 400 | | H |

100HR3 IAM (1&2) GW MON. NOV. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101006-03** **B10LN5**

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford | SDG_H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101006-03 | Client sample id | B10LN5 | | |
| Dept sample id | 7602-003 | Location/Matrix | HANFORD SITE | WATER | |
| Received | 01/04/01 | Collected | 01/02/01 12:44 | | |
| | | Custody/SAF No | C01-008-20 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.153 | 1.5 | 2.6 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 7.01 | 1.5 | 1.9 | 4.0 | B | 82B |
| Tritium | 10028-17-8 | 15800 | 350 | 150 | 400 | | H |

100HR3 IAM (1&2) GW MON. NOV. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101006-02 B10LN7

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101006-02 | Client sample id | B10LN7 | | |
| Dept sample id | 7602-002 | Location/Matrix | HANFORD SITE | WATER | |
| Received | 01/04/01 | Collected | 01/02/01 12:01 | | |
| | | Custody/SAF No | C01-008-18 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | -0.358 | 1.3 | 2.6 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 24.3 | 2.4 | 2.5 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 10400 | 280 | 150 | 400 | | H |

100HR3 IAM (1&2) GW MON. NOV. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA / RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101006-01** **B10LP1**

## DATA SHEET

| | | | | |
|---|---|---|---|---|
| SDG | 7602 | Client/Case no | Hanford | SDG H1200 |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | |
| Lab sample id | R101006-01 | Client sample id | B10LP1 | |
| Dept sample id | 7602-001 | Location/Matrix | HANFORD SITE | WATER |
| Received | 01/04/01 | Collected | 01/02/01 09:21 | |
| | | Custody/SAF No | C01-008-14 | C01-008 |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.194 | 1.6 | 2.7 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 4.67 | 1.9 | 2.8 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 996 | 120 | 150 | 400 | | H |

100HR3 IAM (1&2) GW MON. NOV. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 82B Matrix WATER
SDG 7602
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1200

## RESULTS

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | PLANCHET | 1: Gross Beta | 2: Sum, Beta Emitters | RESULT RATIO (%) 2÷1 | 2σ |
|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-039 | | | | | | | | |
| B10LK7 | R101006-06 | 82 | | 7602-006 | 74.9 | | | |
| B10LL1 | R101006-04 | 82 | | 7602-004 | 6.90 | | | |
| B10LL3 | R101006-05 | 82 | | 7602-005 | 7.55 | | | |
| B10LN5 | R101006-03 | 82 | | 7602-003 | 7.01 | | | |
| B10LN7 | R101006-02 | 82 | | 7602-002 | 24.3 | | | |
| B10LP1 | R101006-01 | 82 | | 7602-001 | 4.67 | | | |
| BLK (QC ID=37238) | R101006-08 | 82 | | 7602-008 | 2.49 J | | | |
| LCS (QC ID=37237) | R101006-07 | 82 | | 7602-007 | ok | | | |
| Duplicate (R101006-03) | R101006-09 | 82 | | 7602-009 | ok | | | |
| Nominal values and limits from method | | | | RDLs (pCi/L) | 4.0 | | | |
| 100HR3 IAM (1&2) GW MON. NOV. 2000 | | | | | | | Average | |

## METHOD PERFORMANCE

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | MDA pCi/L | ALIQ L | PREP FAC | DILU-TION | RESID mg | EFF % | COUNT min | FWHM keV | DRIFT KeV | DAYS HELD | PREPARED | ANAL-YZED | DETECTOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-039 | 2σ prep error 15.0 % Reference Lab Notebook 6963 pg. 039 | | | | | | | | | | | | | | | |
| B10LK7 | R101006-06 | 82 | | 2.4 | 0.300 | | | 79 | | 100 | | | 29 | 01/24/01 | 01/31 | GRB-106 |
| B10LL1 | R101006-04 | 82 | | 2.8 | 0.300 | | | 104 | | 100 | | | 28 | 01/24/01 | 01/30 | GRB-114 |
| B10LL3 | R101006-05 | 82 | | 2.2 | 0.300 | | | 105 | | 100 | | | 28 | 01/24/01 | 01/30 | GRB-115 |
| B10LN5 | R101006-03 | 82 | | 1.9 | 0.300 | | | 112 | | 100 | | | 22 | 01/24/01 | 01/24 | GRB-105 |
| B10LN7 | R101006-02 | 82 | | 2.5 | 0.300 | | | 100 | | 100 | | | 24 | 01/24/01 | 01/26 | GRB-106 |
| B10LP1 | R101006-01 | 82 | | 2.8 | 0.300 | | | 98 | | 100 | | | 22 | 01/24/01 | 01/24 | GRB-114 |
| BLK (QC ID=37238) | R101006-08 | 82 | | 2.3 | 0.300 | | | 25 | | 100 | | | | 01/24/01 | 01/31 | GRB-106 |
| LCS (QC ID=37237) | R101006-07 | 82 | | 1.8 | 0.300 | | | 24 | | 100 | | | | 01/24/01 | 02/03 | GRB-105 |
| Duplicate (R101006-03) (QC ID=37239) | R101006-09 | 82 | | 2.9 | 0.300 | | | 116 | | 100 | | | 29 | 01/24/01 | 01/31 | GRB-114 |
| Nominal values and limits from method | | | | 4.0 | 0.300 | | | 5-250 | | 100 | | | 180 | | | |

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

| | |
|---|---|
| Test 82B | Matrix WATER |
| SDG 7602 | |
| Contact Melissa C. Mannion | |

## METHOD SUMMARY, cont.

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

| | |
|---|---|
| Client Hanford | |
| Contract TRC-SBB-207925 | |
| Contract SDG H1200 | |

| | | |
|---|---|---|
| PROCEDURES | REFERENCE | 900.0_ALPHABETA_GPC |
| | CP-120 | Gross Alpha and Gross Beta in Water, rev 3 |

| | | | | |
|---|---|---|---|---|
| AVERAGES ± 2 SD | MDA | 2.4 | ± | 0.79 |
| FOR 9 SAMPLES | RESIDUE | 85 | ± | 71 |



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

Test 88A Matrix WATER
SDG 7602
Contact Melissa C. Mannion

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1200

## RESULTS

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | PLANCHET | Gross Alpha | |
|---|---|---|---|---|---|---|
| Preparation batch 6963-039 | | | | | | |
| B10LK7 | R101006-06 | 88 | | 7602-006 | 3.41 | |
| B10LL1 | R101006-04 | 88 | | 7602-004 | 2.46 | J |
| B10LL3 | R101006-05 | 88 | | 7602-005 | U | |
| B10LN5 | R101006-03 | 88 | | 7602-003 | U | |
| B10LN7 | R101006-02 | 88 | | 7602-002 | U | |
| B10LP1 | R101006-01 | 88 | | 7602-001 | U | |
| BLK (QC ID=37238) | R101006-08 | 88 | | 7602-008 | U | |
| LCS (QC ID=37237) | R101006-07 | 88 | | 7602-007 | ok | |
| Duplicate (R101006-03) | R101006-09 | 88 | | 7602-009 | - | U |
| Nominal values and limits from method | | | | RDLs (pCi/L) | 3.0 | |
| 100HR3 IAM (1&2) GW MON. NOV. 2000 | | | | | | |

## METHOD PERFORMANCE

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | MDA pCi/L | ALIQ L | PREP FAC | DILU-TION | RESID mg | EFF % | COUNT min | FWHM keV | DRIFT KeV | DAYS HELD | PREPARED | ANAL-YZED | DETECTOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-039 | 2σ prep error 20.0 % Reference Lab Notebook 6963 pg. 039 | | | | | | | | | | | | | | | |
| B10LK7 | R101006-06 | 88 | | 2.3 | 0.300 | | | 112 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-112 |
| B10LL1 | R101006-04 | 88 | | 2.3 | 0.300 | | | 136 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-110 |
| B10LL3 | R101006-05 | 88 | | 2.3 | 0.300 | | | 135 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-111 |
| B10LN5 | R101006-03 | 88 | | 2.6 | 0.300 | | | 141 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-108 |
| B10LN7 | R101006-02 | 88 | | 2.6 | 0.300 | | | 136 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-107 |
| B10LP1 | R101006-01 | 88 | | 2.7 | 0.300 | | | 138 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-106 |
| BLK (QC ID=37238) | R101006-08 | 88 | | 1.0 | 0.300 | | | 24 | | 100 | | | | 01/24/01 | 01/25 | GRB-114 |
| LCS (QC ID=37237) | R101006-07 | 88 | | 1.3 | 0.300 | | | 27 | | 100 | | | | 01/24/01 | 01/25 | GRB-113 |
| Duplicate (R101006-03) (QC ID=37239) | R101006-09 | 88 | | 3.0 | 0.300 | | | 156 | | 100 | | | 23 | 01/24/01 | 01/25 | GRB-115 |
| Nominal values and limits from method | | | | 3.0 | 0.300 | | | 5-250 | | 100 | | | 180 | | | |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

| | |
|---|---|
| Test 88A | Matrix WATER |
| SDG 7602 | |
| Contact Melissa C. Mannion | |

## METHOD SUMMARY, cont.

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

| | |
|---|---|
| Client Hanford | |
| Contract TRC-SBB-207925 | |
| Contract SDG H1200 | |

| | | |
|---|---|---|
| PROCEDURES | REFERENCE | 900.0_ALPHABETA_GPC |
| | CP-120 | Gross Alpha and Gross Beta in Water, rev 3 |

| | | | | |
|---|---|---|---|---|
| AVERAGES ± 2 SD | MDA | 2.2 | ± | 1.3 |
| FOR 9 SAMPLES | RESIDUE | 112 | ± | 100 |



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

Test H Matrix WATER
SDG 7602
Contact Melissa C. Mannion

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1200

## RESULTS

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | PLANCHET | Tritium | |
|---|---|---|---|---|---|---|
| Preparation batch 6963-039 | | | | | | |
| B10LK7 | R101006-06 | | | 7602-006 | U | |
| B10LL1 | R101006-04 | | | 7602-004 | 14900 | |
| B10LL3 | R101006-05 | | | 7602-005 | 15200 | |
| B10LN5 | R101006-03 | | | 7602-003 | 15800 | |
| B10LN7 | R101006-02 | | | 7602-002 | 10400 | |
| B10LP1 | R101006-01 | | | 7602-001 | 996 | |
| BLK (QC ID=37238) | R101006-08 | | | 7602-008 | U | |
| LCS (QC ID=37237) | R101006-07 | | | 7602-007 | ok | |
| Duplicate (R101006-03) | R101006-09 | | | 7602-009 | ok | |
| Spike (R101006-03) | R101006-10 | | | 7602-010 | ok | X |
| Nominal values and limits from method | | | | RDLs (pCi/L) | 400 | |

100HR3 IAM (1&2) GW MON. NOV. 2000

## METHOD PERFORMANCE

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | MDA pCi/L | ALIQ L | PREP FAC | DILU-TION | YIELD % | EFF % | COUNT min | FWHM keV | DRIFT KeV | DAYS HELD | PREPARED | ANAL-YZED | DETECTOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-039 | 2σ prep error 10.0 % Reference Lab Notebook 6963 pg. 039 | | | | | | | | | | | | | | | |
| B10LK7 | R101006-06 | | | 150 | 0.0500 | | | 20 | | 100 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| B10LL1 | R101006-04 | | | 150 | 0.0500 | | | 20 | | 100 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| B10LL3 | R101006-05 | | | 160 | 0.0500 | | | 20 | | 100 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| B10LN5 | R101006-03 | | | 150 | 0.0500 | | | 20 | | 100 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| B10LN7 | R101006-02 | | | 150 | 0.0500 | | | 20 | | 100 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| B10LP1 | R101006-01 | | | 150 | 0.0500 | | | 20 | | 100 | | | 11 | 01/13/01 | 01/13 | LSC-007 |
| BLK (QC ID=37238) | R101006-08 | | | 310 | 0.0500 | | | 10 | | 100 | | | | 01/13/01 | 01/14 | LSC-007 |
| LCS (QC ID=37237) | R101006-07 | | | 310 | 0.0500 | | | 10 | | 100 | | | | 01/13/01 | 01/14 | LSC-007 |
| Duplicate (R101006-03) (QC ID=37239) | R101006-09 | | | 160 | 0.0500 | | | 20 | | 100 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| Spike (R101006-03) (QC ID=37240) | R101006-10 | | | 210 | 0.0500 | | | 18 | | 66 | | | 12 | 01/13/01 | 01/14 | LSC-007 |
| Nominal values and limits from method | | | | 400 | 0.0500 | | | | | 25 | | | 180 | | | |

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

| | |
|---|---|
| Test H | Matrix WATER |
| SDG 7602 | |
| Contact Melissa C. Mannion | |

## METHOD SUMMARY, cont.

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

| | |
|---|---|
| Client Hanford | |
| Contract TRC-SBB-207925 | |
| Contract SDG H1200 | |

| | | |
|---|---|---|
| PROCEDURES | REFERENCE | 906.0_H3_LSC |
| | CP-210 | Tritium in Water Samples by Distillation, rev 3 |

| | | | | |
|---|---|---|---|---|
| AVERAGES ± 2 SD | MDA | 190 | ± | 130 |
| FOR 10 SAMPLES | YIELD | 18 | ± | 8 |



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-14

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1200 (7602) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER 2000 | Logbook No.: WM-SAWS-H35 | Ice Chest No.: ~~SMC-214~~ SMC176 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 42357954 1578 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP0 (F) | | W | 1-2-01 | 0921 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| FED EXPRESS | | | 10:AM 01-04-01 | E. Segura | | E. SEGURO | 10:AM 01-04-01 |
| | | | | | | | |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-18



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1200 (7602) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WAA-SAWS-H38 | Ice Chest No.: SML540 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1507 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LN6 (F) | | W | 1/2/01 | 1201 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LN7 | | W | | | (1)20-mL P | Activity Scan | None |
| B10LN7 | | W | | | (2)1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LN7 | | W | | | (2)x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LN7 | | W | | | (1)250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | D.R. Brewington | | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 10:01 01-04-01 | E. SEGURO | | | 10:01 01-04-01 |
| | | | | | | | |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-20

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1200 (7602) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WAA-SAW-1438 | Ice Chest No.: ER40 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235795541529 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LN4 (F) | | W | 1/2/01 | 1244 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LN5 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LN5 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LN5 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x250-mL P | Tritium - H3 | None |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | D.R. Brewington | | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 10:00 01-04-01 | E-Segura | E SEGURA | | 10:00 01-04-01 |
| | | | | | | | |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-22



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1200 (7602) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H38 | Ice Chest No.: SML176 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235795541518 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LL0 (F) | | W | 1/2/01 | 1106 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LL1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LL1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LL1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LL1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LL1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LL1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | D.R. Brewington | | 1-03-01 1200 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 01-04-01 10 Am | B. Aguirre | | E. SEGURO | 01-04-01 10 AM |
| | | | | | | | |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-23



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1200 (7602) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-438 | Ice Chest No.: SMC176 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1518 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LL2 (F) | | W | 1/2/01 | 1106 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LL3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LL3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LL3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1-03-01 1200 | Fed Ex | | | 01-03-01 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| FED EXPRESS | | | 01-04-01 10:Am | E. Segura | | E SEGURO | 01-04-01 10:Am |
| 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 |
|---|---|---|---|
| | | | |

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-26

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. E. PARCHEN | Contact/Requester: JH KESSNER H1200 (7602) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H39 | Ice Chest No.: ER40 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1529 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LK6 (F) | | W | 1-2-01 | 1208 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LK7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LK7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LK7 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LK7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LK7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LK7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. E. PARCHEN | | | 1-03-01 1200 | FED EX | | | 01-03-01 |
| FED EXPRESS | | | 01-04-01 10:[illegible] | E. Segura | | E. SEGURA | 01-04-01 10:[illegible] |
| | | | | | | | |
| | | | | | | | |

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

**ThermoRetec**
**Richmond Laboratory**

**Analytical Services**

## ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: Bechtel Hanford Date: 1-4-01

| | | | | | | |
|---|---|---|---|---|---|---|
| Ice chest # or description | ER-40 | | | | | |
| Thermometer: time in | 11:15 | | | | | |
| Thermometer: time out | 11:30 | | | | | |
| Thermometer reading | 3°C | | | | | |
| Thermometer number | 2132 | | | | | |
| Correction factor | — | | | | | |
| Actual temperature* | — | | | | | |
| Custody seals on ice chest intact? | Yes | | | | | |
| Custody seals dated ? | Yes | | | | | |
| Custody seals signed? | Yes | | | | | |
| Custody seals on samples? | Yes | | | | | |
| Ice chest scanned for activity? | Yes | | | | | |

* Temperature is in degrees centigrade.

Technician: AF Dorsey

Comments:

**ThermoRetec**
**Richmond Laboratory**

**Analytical Services**

## ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: Bechtel Hanford Date: 1-4-01

| | | | | | | |
|---|---|---|---|---|---|---|
| Ice chest # or description | SML 540 | | | | | |
| Thermometer: time in | 10:30 | | | | | |
| Thermometer: time out | 11:00 | | | | | |
| Thermometer reading | 3°C | | | | | |
| Thermometer number | 6536 | | | | | |
| Correction factor | — | | | | | |
| Actual temperature* | — | | | | | |
| Custody seals on ice chest intact? | yes | | | | | |
| Custody seals dated ? | yes | | | | | |
| Custody seals signed? | yes | | | | | |
| Custody seals on samples? | yes | | | | | |
| Ice chest scanned for activity? | yes | | | | | |

* Temperature is in degrees centigrade.

Technician: [illegible]

Comments:

Form SCP-01.1, 09-25-00
Previous editions of this form may be used.

*"50 years of quality nuclear services"*

**ThermoRetec**
**Richmond Laboratory**

**Analytical Services**

## ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: Bechtel Hanford Date: 1-4-01

| | | | | | | |
|---|---|---|---|---|---|---|
| Ice chest # or description | SML-176 | | | | | |
| Thermometer: time in | 10:36 | | | | | |
| Thermometer: time out | 11:06 | | | | | |
| Thermometer reading | 5°C | | | | | |
| Thermometer number | 2132 | | | | | |
| Correction factor | — | | | | | |
| Actual temperature* | — | | | | | |
| Custody seals on ice chest intact? | yes | | | | | |
| Custody seals dated ? | yes | | | | | |
| Custody seals signed? | yes | | | | | |
| Custody seals on samples? | yes | | | | | |
| Ice chest scanned for activity? | yes | | | | | |

* Temperature is in degrees centigrade.

Technician: AR Corso

Comments:

ThermoRetec
Richmond Laboratory

Analytical Services

## SAMPLE RECEIPT CHECKLIST

### SAMPLE RECEIPT

Client: BECHTEL HANFORD (PNNL) Date/Time received 01-04-01 10:Am

CoC No. C01-008-14, 18, 20, 22, 23, 26,

Container I.D. No. SML 176, SML-540 MWD ED-40 Requested TAT (Days) _____ P.O. Received Yes [ ] No [ ]

### INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Cooler Temperature: _____ Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 12
7. Number of containers per sample: PLS CHECK (Or see CoC ✓ _____)
8. Paperwork agrees with samples? Yes [✓] No [ ]
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
11. Describe any anomalies: _____
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
14. Received by E. SEGURO Date: 01-04-01 Time: 10:Am

| Customer Sample No. | cpm | mr/hr | Customer Sample No. | Cpm | mr/hr |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Ion Chamber Ser. No. _____ Calibration date _____

Survey Meter Ser No. _____ Calibration date _____

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## SAMPLE SUMMARY

SDG 7604
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| CLIENT SAMPLE ID | LOCATION | MATRIX | LEVEL | LAB SAMPLE ID | SAF NO | CHAIN OF CUSTODY | COLLECTED |
|---|---|---|---|---|---|---|---|
| B10LC3 | Hanford Site | WATER | | R101018-01 | C01-008 | C01-008-40 | 01/04/01 10:40 |
| B10LJ7 | Hanford Site | WATER | | R101018-02 | C01-008 | C01-008-34 | 01/03/01 12:07 |
| B10LK9 | Hanford Site | WATER | | R101018-03 | C01-008 | C01-008-24 | 01/03/01 11:17 |
| B10LM1 | Hanford Site | WATER | | R101018-04 | C01-008 | C01-008-150 | 01/04/01 12:47 |
| B10LP3 | Hanford Site | WATER | | R101018-05 | C01-008 | C01-008-12 | 01/04/01 09:48 |
| B10LP5 | Hanford Site | WATER | | R101018-06 | C01-008 | C01-008-10 | 01/04/01 09:13 |
| B10LV1 | Hanford Site | WATER | | R101018-07 | C01-008 | C01-008-46 | 01/04/01 11:42 |
| Method Blank | | WATER | | R101018-09 | C01-008 | | |
| Lab Control Sample | | WATER | | R101018-08 | C01-008 | | |
| Duplicate (R101018-06) | Hanford Site | WATER | | R101018-10 | C01-008 | | 01/04/01 09:13 |
| Spike (R101018-06) | Hanford Site | WATER | | R101018-11 | C01-008 | | 01/04/01 09:13 |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## QC SUMMARY

SDG 7604
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| QC BATCH | CHAIN OF CUSTODY | CLIENT SAMPLE ID | MATRIX | % SOLIDS | SAMPLE AMOUNT | BASIS AMOUNT | DAYS SINCE RECEIVED | DAYS SINCE COLL | LAB SAMPLE ID | DEPARTMENT SAMPLE ID |
|---|---|---|---|---|---|---|---|---|---|---|
| 7604 | C01-008-10 | B10LP5 | WATER | | | | 01/05/01 | 1 | R101018-06 | 7604-006 |
| | C01-008-12 | B10LP3 | WATER | | | | 01/05/01 | 1 | R101018-05 | 7604-005 |
| | C01-008-150 | B10LM1 | WATER | | | | 01/05/01 | 1 | R101018-04 | 7604-004 |
| | C01-008-24 | B10LK9 | WATER | | | | 01/05/01 | 2 | R101018-03 | 7604-003 |
| | C01-008-34 | B10LJ7 | WATER | | | | 01/05/01 | 2 | R101018-02 | 7604-002 |
| | C01-008-40 | B10LC3 | WATER | | | | 01/05/01 | 1 | R101018-01 | 7604-001 |
| | C01-008-46 | B10LV1 | WATER | | | | 01/05/01 | 1 | R101018-07 | 7604-007 |
| | | Method Blank | WATER | | | | | | R101018-09 | 7604-009 |
| | | Lab Control Sample | WATER | | | | | | R101018-08 | 7604-008 |
| | | Duplicate (R101018-06) | WATER | | | | 01/05/01 | 1 | R101018-10 | 7604-010 |
| | | Spike (R101018-06) | WATER | | | | 01/05/01 | 1 | R101018-11 | 7604-011 |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## PREP BATCH SUMMARY

SDG 7604
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| TEST | MATRIX | METHOD | PREPARATION ERROR BATCH | 2σ % | PLANCHETS ANALYZED CLIENT | MORE | RE | BLANK | LCS | DUP/ORIG | MS/ORIG | QUALIFIERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Proportional Counting | | | | | | | | | | | | |
| 82B | WATER | Gross Beta in Water | 6963-044 | 15.0 | 7 | | | 1 | 1 | 1/1 | | |
| 88A | WATER | Gross Alpha in Water | 6963-044 | 20.0 | 7 | | | 1 | 1 | 1/1 | | |
| Liquid Scintillation Counting | | | | | | | | | | | | |
| H | WATER | Tritium in Water | 6963-044 | 10.0 | 7 | | | 1 | 1 | 1/1 | 1/1 | |

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## WORK SUMMARY

SDG 7604
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| CLIENT SAMPLE ID / LOCATION / CUSTODY | SAF No | MATRIX | LAB SAMPLE ID / COLLECTED / RECEIVED | PLANCHET | TEST | SUF-FIX | ANALYZED | REVIEWED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| B10LC3 | | | R101018-01 | 7604-001 | 82B/82 | | 01/31/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/04/01 | 7604-001 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-40 | C01-008 | | 01/05/01 | 7604-001 | H | | 01/15/01 | 02/15/01 | MCM | Tritium in Water |
| B10LJ7 | | | R101018-02 | 7604-002 | 82B/82 | | 02/03/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/03/01 | 7604-002 | 88A/88 | | 02/01/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-34 | C01-008 | | 01/05/01 | 7604-002 | H | | 01/15/01 | 02/15/01 | MCM | Tritium in Water |
| B10LK9 | | | R101018-03 | 7604-003 | 82B/82 | | 01/31/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/03/01 | 7604-003 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-24 | C01-008 | | 01/05/01 | 7604-003 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| B10LM1 | | | R101018-04 | 7604-004 | 82B/82 | | 01/31/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/04/01 | 7604-004 | 88A/88 | | 02/01/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-150 | C01-008 | | 01/05/01 | 7604-004 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| B10LP3 | | | R101018-05 | 7604-005 | 82B/82 | | 02/01/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/04/01 | 7604-005 | 88A/88 | | 02/06/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-12 | C01-008 | | 01/05/01 | 7604-005 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| B10LP5 | | | R101018-06 | 7604-006 | 82B/82 | | 02/01/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/04/01 | 7604-006 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-10 | C01-008 | | 01/05/01 | 7604-006 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| B10LV1 | | | R101018-07 | 7604-007 | 82B/82 | | 02/01/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/04/01 | 7604-007 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| C01-008-46 | C01-008 | | 01/05/01 | 7604-007 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| Method Blank | | | R101018-09 | 7604-009 | 82B/82 | | 02/03/01 | 02/15/01 | MCM | Gross Beta in Water |
| | | WATER | | 7604-009 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| | C01-008 | | | 7604-009 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| Lab Control Sample | | | R101018-08 | 7604-008 | 82B/82 | | 02/03/01 | 02/15/01 | MCM | Gross Beta in Water |
| | | WATER | | 7604-008 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| | C01-008 | | | 7604-008 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| Duplicate (R101018-06) | | | R101018-10 | 7604-010 | 82B/82 | | 02/15/01 | 02/15/01 | MCM | Gross Beta in Water |
| Hanford Site | | WATER | 01/04/01 | 7604-010 | 88A/88 | | 01/31/01 | 02/15/01 | MCM | Gross Alpha in Water |
| | C01-008 | | 01/05/01 | 7604-010 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

SDG 7604
Contact Melissa C. Mannion

## WORK SUMMARY, cont.

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1200

| CLIENT SAMPLE ID / LOCATION / CUSTODY | SAF No | MATRIX | LAB SAMPLE ID / COLLECTED / RECEIVED | PLANCHET | TEST | SUF-FIX | ANALYZED | REVIEWED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Spike (R101018-06) | | | R101018-11 | 7604-011 | H | | 01/16/01 | 02/15/01 | MCM | Tritium in Water |
| Hanford Site | | WATER | 01/04/01 | | | | | | | |
| | C01-008 | | 01/05/01 | | | | | | | |

## COUNTS OF TESTS BY SAMPLE TYPE

| TEST | SAF No | METHOD | REFERENCE | CLIENT | MORE | RE | BLANK | LCS | DUP | SPIKE | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 82B/82 | C01-008 | Gross Beta in Water | 900.0_ALPHABETA_GPC | 7 | | | 1 | 1 | 1 | | 10 |
| 88A/88 | C01-008 | Gross Alpha in Water | 900.0_ALPHABETA_GPC | 7 | | | 1 | 1 | 1 | | 10 |
| H | C01-008 | Tritium in Water | 906.0_H3_LSC | 7 | | | 1 | 1 | 1 | 1 | 11 |
| TOTALS | | | | 21 | | | 3 | 3 | 3 | 1 | 31 |



Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 02/15/01

# TMA / RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101018-09** **Method Blank**

## METHOD BLANK

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101018-09 | Client sample id | Method Blank | | |
| Dept sample id | 7604-009 | Material/Matrix | | WATER | |
| | | SAF No | C01-008 | | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | -0.223 | 0.74 | 1.5 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | -0.284 | 1.2 | 2.1 | 4.0 | U | 82B |
| Tritium | 10028-17-8 | -192 | 220 | 380 | 400 | U | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000

QC-BLANK 37234

| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

R101018-08

Lab Control Sample

## LAB CONTROL SAMPLE

SDG 7604
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1200
Case no TRC-SBB-207925

Lab sample id R101018-08
Dept sample id 7604-008

Client sample id Lab Control Sample
Material/Matrix WATER
SAF No C01-008

| ANALYTE | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST | ADDED pCi/L | 2σ ERR pCi/L | REC % | 3σ LMTS (TOTAL) | PROTOCOL LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Alpha | 64.6 | 4.8 | 1.4 | 3.0 | | 88A | 67.0 | 2.7 | 96 | 69-131 | 70-130 |
| Gross Beta | 67.2 | 3.5 | 2.7 | 4.0 | | 82B | 73.0 | 2.9 | 92 | 77-123 | 70-130 |
| Tritium | 20600 | 620 | 400 | 400 | | H | 20800 | 830 | 99 | 83-117 | 80-120 |

100HR3 IAM (1&2) GW Mon., Nov. 2000

QC-LCS 37233

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

R101018-10

B10LP5

## DUPLICATE

| | | | |
|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | Case no | TRC-SBB-207925 |
| DUPLICATE | | ORIGINAL | |
| Lab sample id | R101018-10 | Lab sample id | R101018-06 |
| Dept sample id | 7604-010 | Dept sample id | 7604-006 |
| | | Received | 01/05/01 |
| Client sample id | B10LP5 | | |
| Location/Matrix | Hanford Site WATER | | |
| Collected | 01/04/01 09:13 | | |
| Custody/SAF No | C01-008-10 C01-008 | | |

| ANALYTE | DUPLICATE pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST | ORIGINAL pCi/L | 2σ ERR (COUNT) | MDA pCi/L | QUALI-FIERS | RPD % | 3σ TOT | PROT LIMIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Alpha | 1.36 | 1.3 | 1.9 | 3.0 | U | 88A | 0.685 | 1.5 | 2.7 | U | - | | |
| Gross Beta | 5.99 | 1.5 | 2.0 | 4.0 | | 82B | 6.21 | 1.8 | 2.4 | | 4 | 66 | |
| Tritium | 209 | 120 | 200 | 400 | J | H | 202 | 120 | 190 | J | 3 | 126 | |

100HR3 IAM (1&2) GW Mon., Nov. 2000

QC-DUP#6 37235

| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DUP |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

R101018-11 B10LP5

## MATRIX SPIKE

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7604 | | | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | | | Case no | TRC-SBB-207925 |
| | MATRIX SPIKE | | ORIGINAL | | |
| Lab sample id | R101018-11 | Lab sample id | R101018-06 | Client sample id | B10LP5 |
| Dept sample id | 7604-011 | Dept sample id | 7604-006 | Location/Matrix | Hanford Site WATER |
| | | Received | 01/05/01 | Collected | 01/04/01 09:13 |
| | | | | Custody/SAF No | C01-008-10 C01-008 |

| ANALYTE | SPIKE pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST | ADDED pCi/L | 2σ ERR pCi/L | ORIGINAL pCi/L | 2σ ERR (COUNT) | REC % | 3σ LMTS (TOTAL) | PROTOCOL LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tritium | 89600 | 940 | 230 | 400 | | H | 95000 | 3800 | 202 | 120 | 94 | 85-115 | 60-140 |

100HR3 IAM (1&2) GW Mon., Nov. 2000

QC-MS#6 37236

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-MS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101018-01 B10LC3

## DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 |
| Lab sample id | R101018-01 | Client sample id | B10LC3 |
| Dept sample id | 7604-001 | Location/Matrix | Hanford Site WATER |
| Received | 01/05/01 | Collected | 01/04/01 10:40 |
| | | Custody/SAF No | C01-008-40 C01-008 |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.058 | 0.80 | 1.5 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 5.05 | 1.5 | 2.1 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 285 | 130 | 200 | 400 | J | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101018-02 B10LJ7

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101018-02 | Client sample id | B10LJ7 | | |
| Dept sample id | 7604-002 | Location/Matrix | Hanford Site | WATER | |
| Received | 01/05/01 | Collected | 01/03/01 12:07 | | |
| | | Custody/SAF No | C01-008-34 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.648 | 1.2 | 1.8 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 5.78 | 1.7 | 2.4 | 4.0 | | 82B |
| Tritium | 10028-17-8 | -79.8 | 120 | 200 | 400 | U | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101018-03** **B10LK9**

## DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 |
| Lab sample id | R101018-03 | Client sample id | B10LK9 |
| Dept sample id | 7604-003 | Location/Matrix | Hanford Site WATER |
| Received | 01/05/01 | Collected | 01/03/01 11:17 |
| | | Custody/SAF No | C01-008-24 C01-008 |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.924 | 1.6 | 2.4 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 7.22 | 2.0 | 2.9 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 14700 | 360 | 200 | 400 | | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000

| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101018-04 B10LM1

## DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford SDG H1200 |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 |
| Lab sample id | R101018-04 | Client sample id | B10LM1 |
| Dept sample id | 7604-004 | Location/Matrix | Hanford Site WATER |
| Received | 01/05/01 | Collected | 01/04/01 12:47 |
| | | Custody/SAF No | C01-008-150 C01-008 |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 1.00 | 2.1 | 3.2 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 6.19 | 1.6 | 2.2 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 7440 | 270 | 200 | 400 | | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

R101018-05 B10LP3

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford | SDG H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101018-05 | Client sample id | B10LP3 | | |
| Dept sample id | 7604-005 | Location/Matrix | Hanford Site | WATER | |
| Received | 01/05/01 | Collected | 01/04/01 09:48 | | |
| | | Custody/SAF No | C01-008-12 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | -0.618 | 1.2 | 2.6 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 4.89 | 1.5 | 2.0 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 305 | 120 | 190 | 400 | J | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101018-06** **B10LP5**

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford | SDG_H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101018-06 | Client sample id | B10LP5 | | |
| Dept sample id | 7604-006 | Location/Matrix | Hanford Site | WATER | |
| Received | 01/05/01 | Collected | 01/04/01 09:13 | | |
| | | Custody/SAF No | C01-008-10 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.685 | 1.5 | 2.7 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 6.21 | 1.8 | 2.4 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 202 | 120 | 190 | 400 | J | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

**SAMPLE DELIVERY GROUP H1200**

**R101018-07** **B10LV1**

## DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7604 | Client/Case no | Hanford | SDG_H1200 | |
| Contact | Melissa C. Mannion | Contract | TRC-SBB-207925 | | |
| Lab sample id | R101018-07 | Client sample id | B10LV1 | | |
| Dept sample id | 7604-007 | Location/Matrix | Hanford Site | WATER | |
| Received | 01/05/01 | Collected | 01/04/01 11:42 | | |
| | | Custody/SAF No | C01-008-46 | C01-008 | |

| ANALYTE | CAS NO | RESULT pCi/L | 2σ ERR (COUNT) | MDA pCi/L | RDL pCi/L | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.268 | 1.4 | 2.7 | 3.0 | U | 88A |
| Gross Beta | 12587-47-2 | 4.16 | 1.4 | 1.9 | 4.0 | | 82B |
| Tritium | 10028-17-8 | 387 | 130 | 200 | 400 | J | H |

100HR3 IAM (1&2) GW Mon., Nov. 2000



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

Test 82B Matrix WATER
SDG 7604
Contact Melissa C. Mannion

## METHOD SUMMARY

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1200

## RESULTS

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | PLANCHET | 1: Gross Beta | 2: Sum, Beta Emitters | RESULT RATIO (%) 2÷1 | 2σ |
|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-044 | | | | | | | | |
| B10LC3 | R101018-01 | 82 | | 7604-001 | 5.05 | | | |
| B10LJ7 | R101018-02 | 82 | | 7604-002 | 5.78 | | | |
| B10LK9 | R101018-03 | 82 | | 7604-003 | 7.22 | | | |
| B10LM1 | R101018-04 | 82 | | 7604-004 | 6.19 | | | |
| B10LP3 | R101018-05 | 82 | | 7604-005 | 4.89 | | | |
| B10LP5 | R101018-06 | 82 | | 7604-006 | 6.21 | | | |
| B10LV1 | R101018-07 | 82 | | 7604-007 | 4.16 | | | |
| BLK (QC ID=37234) | R101018-09 | 82 | | 7604-009 | U | | | |
| LCS (QC ID=37233) | R101018-08 | 82 | | 7604-008 | ok | | | |
| Duplicate (R101018-06) | R101018-10 | 82 | | 7604-010 | ok | | | |
| Nominal values and limits from method | | | RDLs (pCi/L) | | 4.0 | | | |
| 100HR3 IAM (1&2) GW Mon., Nov. 2000 | | | | | | Average | | |

## METHOD PERFORMANCE

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | MDA pCi/L | ALIQ L | PREP FAC | DILU-TION | RESID mg | EFF % | COUNT min | FWHM keV | DRIFT KeV | DAYS HELD | PREPARED | ANAL-YZED | DETECTOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-044 | 2σ prep error 15.0 % Reference Lab Notebook 6963 pg. 044 | | | | | | | | | | | | | | | |
| B10LC3 | R101018-01 | 82 | | 2.1 | 0.300 | | | 86 | | 100 | | | 27 | 01/29/01 | 01/31 | GRB-115 |
| B10LJ7 | R101018-02 | 82 | | 2.4 | 0.300 | | | 110 | | 100 | | | 31 | 01/29/01 | 02/03 | GRB-106 |
| B10LK9 | R101018-03 | 82 | | 2.9 | 0.300 | | | 126 | | 100 | | | 28 | 01/29/01 | 01/31 | GRB-114 |
| B10LM1 | R101018-04 | 82 | | 2.2 | 0.300 | | | 115 | | 100 | | | 27 | 01/29/01 | 01/31 | GRB-115 |
| B10LP3 | R101018-05 | 82 | | 2.0 | 0.300 | | | 128 | | 100 | | | 28 | 01/29/01 | 02/01 | GRB-105 |
| B10LP5 | R101018-06 | 82 | | 2.4 | 0.300 | | | 123 | | 100 | | | 28 | 01/29/01 | 02/01 | GRB-106 |
| B10LV1 | R101018-07 | 82 | | 1.9 | 0.300 | | | 114 | | 100 | | | 28 | 01/29/01 | 02/01 | GRB-107 |
| BLK (QC ID=37234) | R101018-09 | 82 | | 2.1 | 0.300 | | | 25 | | 100 | | | | 01/29/01 | 02/03 | GRB-115 |
| LCS (QC ID=37233) | R101018-08 | 82 | | 2.7 | 0.300 | | | 23 | | 100 | | | | 01/29/01 | 02/03 | GRB-114 |
| Duplicate (R101018-06) (QC ID=37235) | R101018-10 | 82 | | 2.0 | 0.300 | | | 137 | | 100 | | | 42 | 01/29/01 | 02/15 | GRB-105 |
| Nominal values and limits from method | | | | 4.0 | 0.300 | | | 5-250 | | 100 | | | 180 | | | |

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

| | |
|---|---|
| Test 82B | Matrix WATER |
| SDG 7604 | |
| Contact Melissa C. Mannion | |

## METHOD SUMMARY, cont.

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

| | |
|---|---|
| Client Hanford | |
| Contract TRC-SBB-207925 | |
| Contract SDG H1200 | |

| | | |
|---|---|---|
| PROCEDURES | REFERENCE | 900.0_ALPHABETA_GPC |
| | CP-120 | Gross Alpha and Gross Beta in Water, rev 3 |

| | | | | |
|---|---|---|---|---|
| AVERAGES ± 2 SD | MDA | 2.3 | ± | 0.65 |
| FOR 10 SAMPLES | RESIDUE | 99 | ± | 83 |



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

Test 88A Matrix WATER
SDG 7604
Contact Melissa C. Mannion

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1200

## RESULTS

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | PLANCHET | Gross Alpha | |
|---|---|---|---|---|---|---|
| Preparation batch 6963-044 | | | | | | |
| B10LC3 | R101018-01 | 88 | | 7604-001 | U | |
| B10LJ7 | R101018-02 | 88 | | 7604-002 | U | |
| B10LK9 | R101018-03 | 88 | | 7604-003 | U | |
| B10LM1 | R101018-04 | 88 | | 7604-004 | U | |
| B10LP3 | R101018-05 | 88 | | 7604-005 | U | |
| B10LP5 | R101018-06 | 88 | | 7604-006 | U | |
| B10LV1 | R101018-07 | 88 | | 7604-007 | U | |
| BLK (QC ID=37234) | R101018-09 | 88 | | 7604-009 | U | |
| LCS (QC ID=37233) | R101018-08 | 88 | | 7604-008 | ok | |
| Duplicate (R101018-06) | R101018-10 | 88 | | 7604-010 | - | U |
| Nominal values and limits from method | | | | RDLs (pCi/L) | 3.0 | |
| 100HR3 IAM (1&2) GW Mon., Nov. 2000 | | | | | | |

## METHOD PERFORMANCE

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | MDA pCi/L | ALIQ L | PREP FAC | DILU-TION | RESID mg | EFF % | COUNT min | FWHM keV | DRIFT KeV | DAYS HELD | PREPARED | ANAL-YZED | DETECTOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-044 | 2σ prep error 20.0 % Reference Lab Notebook 6963 pg. 044 | | | | | | | | | | | | | | | |
| B10LC3 | R101018-01 | 88 | | 1.5 | 0.300 | | | 79 | | 100 | | | 27 | 01/30/01 | 01/31 | GRB-107 |
| B10LJ7 | R101018-02 | 88 | | 1.8 | 0.300 | | | 109 | | 100 | | | 29 | 01/30/01 | 02/01 | GRB-105 |
| B10LK9 | R101018-03 | 88 | | 2.4 | 0.300 | | | 116 | | 100 | | | 28 | 01/30/01 | 01/31 | GRB-108 |
| B10LM1 | R101018-04 | 88 | | 3.2 | 0.300 | | | 119 | | 100 | | | 28 | 01/30/01 | 02/01 | GRB-106 |
| B10LP3 | R101018-05 | 88 | | 2.6 | 0.300 | | | 130 | | 100 | | | 33 | 01/30/01 | 02/06 | GRB-106 |
| B10LP5 | R101018-06 | 88 | | 2.7 | 0.300 | | | 142 | | 100 | | | 27 | 01/30/01 | 01/31 | GRB-112 |
| B10LV1 | R101018-07 | 88 | | 2.7 | 0.300 | | | 114 | | 100 | | | 27 | 01/30/01 | 01/31 | GRB-113 |
| BLK (QC ID=37234) | R101018-09 | 88 | | 1.5 | 0.300 | | | 26 | | 100 | | | | 01/30/01 | 01/31 | GRB-115 |
| LCS (QC ID=37233) | R101018-08 | 88 | | 1.4 | 0.300 | | | 25 | | 100 | | | | 01/30/01 | 01/31 | GRB-114 |
| Duplicate (R101018-06) (QC ID=37235) | R101018-10 | 88 | | 1.9 | 0.300 | | | 143 | | 100 | | | 27 | 01/30/01 | 01/31 | GRB-116 |
| Nominal values and limits from method | | | | 3.0 | 0.300 | | | 5-250 | | 100 | | | 180 | | | |

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/15/01

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

| | |
|---|---|
| Test 88A | Matrix WATER |
| SDG 7604 | |
| Contact Melissa C. Mannion | |

## METHOD SUMMARY, cont.

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

| | |
|---|---|
| Client Hanford | |
| Contract TRC-SBB-207925 | |
| Contract SDG H1200 | |

| | | |
|---|---|---|
| PROCEDURES | REFERENCE | 900.0_ALPHABETA_GPC |
| | CP-120 | Gross Alpha and Gross Beta in Water, rev 3 |

| | | | | |
|---|---|---|---|---|
| AVERAGES ± 2 SD | MDA | 2.2 | ± | 1.3 |
| FOR 10 SAMPLES | RESIDUE | 100 | ± | 87 |



| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

| | |
|---|---|
| Test | H |
| Matrix | WATER |
| SDG | 7604 |
| Contact | Melissa C. Mannion |

## METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

| | |
|---|---|
| Client | Hanford |
| Contract | TRC-SBB-207925 |
| Contract | SDG H1200 |

## RESULTS

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | PLANCHET | Tritium | |
|---|---|---|---|---|---|---|
| Preparation batch 6963-044 | | | | | | |
| B10LC3 | R101018-01 | | | 7604-001 | 285 | J |
| B10LJ7 | R101018-02 | | | 7604-002 | U | |
| B10LK9 | R101018-03 | | | 7604-003 | 14700 | |
| B10LM1 | R101018-04 | | | 7604-004 | 7440 | |
| B10LP3 | R101018-05 | | | 7604-005 | 305 | J |
| B10LP5 | R101018-06 | | | 7604-006 | 202 | J |
| B10LV1 | R101018-07 | | | 7604-007 | 387 | J |
| BLK (QC ID=37234) | R101018-09 | | | 7604-009 | U | |
| LCS (QC ID=37233) | R101018-08 | | | 7604-008 | ok | |
| Duplicate (R101018-06) | R101018-10 | | | 7604-010 | ok | J |
| Spike (R101018-06) | R101018-11 | | | 7604-011 | ok | |
| Nominal values and limits from method | | | | RDLs (pCi/L) | 400 | |
| 100HR3 IAM (1&2) GW Mon., Nov. 2000 | | | | | | |

## METHOD PERFORMANCE

| CLIENT SAMPLE ID | LAB SAMPLE ID | RAW TEST | SUF-FIX | MDA pCi/L | ALIQ L | PREP FAC | DILU-TION | YIELD % | EFF % | COUNT min | FWHM keV | DRIFT KeV | DAYS HELD | PREPARED | ANAL-YZED | DETECTOR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preparation batch 6963-044 | 2σ prep error 10.0 % | | | Reference Lab Notebook 6963 pg. 044 | | | | | | | | | | | | |
| B10LC3 | R101018-01 | | | 200 | 0.0500 | | | 20 | | 100 | | | 11 | 01/15/01 | 01/15 | LSC-006 |
| B10LJ7 | R101018-02 | | | 200 | 0.0500 | | | 20 | | 100 | | | 12 | 01/15/01 | 01/15 | LSC-006 |
| B10LK9 | R101018-03 | | | 200 | 0.0500 | | | 20 | | 100 | | | 13 | 01/15/01 | 01/16 | LSC-006 |
| B10LM1 | R101018-04 | | | 200 | 0.0500 | | | 20 | | 100 | | | 12 | 01/15/01 | 01/16 | LSC-006 |
| B10LP3 | R101018-05 | | | 190 | 0.0500 | | | 20 | | 100 | | | 12 | 01/15/01 | 01/16 | LSC-006 |
| B10LP5 | R101018-06 | | | 190 | 0.0500 | | | 20 | | 100 | | | 12 | 01/15/01 | 01/16 | LSC-006 |
| B10LV1 | R101018-07 | | | 200 | 0.0500 | | | 20 | | 100 | | | 12 | 01/15/01 | 01/16 | LSC-006 |
| BLK (QC ID=37234) | R101018-09 | | | 380 | 0.0500 | | | 10 | | 100 | | | | 01/15/01 | 01/16 | LSC-006 |
| LCS (QC ID=37233) | R101018-08 | | | 400 | 0.0500 | | | 10 | | 100 | | | | 01/15/01 | 01/16 | LSC-006 |
| Duplicate (R101018-06) (QC ID=37235) | R101018-10 | | | 200 | 0.0500 | | | 20 | | 100 | | | 12 | 01/15/01 | 01/16 | LSC-006 |
| Spike (R101018-06) (QC ID=37236) | R101018-11 | | | 230 | 0.0500 | | | 18 | | 90 | | | 12 | 01/15/01 | 01/16 | LSC-006 |
| Nominal values and limits from method | | | | 400 | 0.0500 | | | | | 25 | | | 180 | | | |

| | |
|---|---|
| Lab id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

# TMA/RICHMOND

SAMPLE DELIVERY GROUP H1200

## METHOD SUMMARY, cont.

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

| | |
|---|---|
| Test H | Matrix WATER |
| SDG 7604 | |
| Contact Melissa C. Mannion | |

| | |
|---|---|
| Client Hanford | |
| Contract TRC-SBB-207925 | |
| Contract SDG H1200 | |

| | | |
|---|---|---|
| PROCEDURES | REFERENCE | 906.0_H3_LSC |
| | CP-210 | Tritium in Water Samples by Distillation, rev 3 |

| | | | | |
|---|---|---|---|---|
| AVERAGES ± 2 SD | MDA | 240 | ± | 150 |
| FOR 11 SAMPLES | YIELD | 18 | ± | 8 |



| | |
|---|---|
| Lab Id | TMANC |
| Protocol | Hanford |
| Version | Ver 1.0 |
| Form | DVD-CMS |
| Version | 3.06 |
| Report date | 02/15/01 |

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-40

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER H1205 (7604) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SIAWS-H39 | Ice Chest No.: SMLL 465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LC2 (F) | | W | 1-4-01 | 1040 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LC3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LC3 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LC3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LC3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LC3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LC3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| J. G. HOGAN / J. Hogan | JAN 04 2001 1250 | Fed Ex | 01-04-01 |
| PEN. EXPRESS | 01-05-01 10:00 | F. SEGURO | 01-05-01 10:00 |
| | | | |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-34

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1205 (7604) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER 2000 | Logbook No.: WMA SAWS-H38 | Ice Chest No.: SMIL-002 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1573 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LJ6 (F) | | W | 1/3/01 | 1207 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LJ7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LJ7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LJ7 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LJ7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LJ7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LJ7 | | W | | | 1x250-mL P | Tritium - H3 | None |
| | | | | | | | |
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| | | | | | | | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1/4/01 1325 | FED EX | | | 01-04-01 |
| FED. EXPRESS | | | 01-05-01 10 Am | E. SUGURO | | | 01-05-01 10 AM |
| | | | | | | | |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-24



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER H1205 (7604) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H38 | Ice Chest No.: 3ML-002 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1573 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LK8 (F) ✓ | | W | 1/3/01 | 1117 | 1x500-mL G/P ✓ | ICP Metals - 6010A RCRA GW ✓ | HNO3 to pH <2 |
| B10LK9 ✓ | | W | | | 1x500-mL G/P ✓ | ICP Metals - 6010A RCRA GW ✓ | HNO3 to pH <2 |
| B10LK9 ✓ | | W | | | 1x500-mL P ✓ | IC Anions - 300.0 ✓ | Cool 4C |
| B10LK9 ✓ | | W | | | 1x20-mL P ✓ | Activity Scan ✓ | None |
| B10LK9 ✓ | | W | | | 2x1000-mL G/P ✓ | Gross Alpha ✓ | HNO3 to pH <2 |
| B10LK9 ✓ | | W | | | 2x1000-mL G/P ✓ | Gross Beta ✓ | HNO3 to pH <2 |
| B10LK9 ✓ | | W | | | 1x250-mL P ✓ | Tritium - H3 ✓ | None |
| | | | | | | | |
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| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| D. R. BREWINGTON D.R. Brewington | 1/4/01 1325 | FED EX | 01-04-01 |
| FED. EXPRESS | 01-05-01 10 AM | E. SEGURO | 01-05-01 |
| | | | |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-150

Page 1 of 1

| | | |
|---|---|---|
| Collector D. E. PARCHEN | Contact/Requester JH KESSNER H1205 (7604) | Telephone No. (509) 375-4688 MSIN FAX |
| SAF No. C01-008 | Sampling Origin HANFORD SITE | Purchase Order/Charge Code |
| Project Title 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No. WM-SAWS-H38 | Ice Chest No. SMC-48 Temp. |
| Shipped To (Lab) TMA/RECRA | Method of Shipment GOVT. VEHICLE | Bill of Lading/Air Bill No. 4235 7954 1551 |
| Protocol CERCLA | Data Turnaround 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LM0 (F) | | W | 1/4/01 | 12:47 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LM1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LM1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LM1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x250-mL P | Tritium - H3 | None |
| | | | | | | | |
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| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. E. PARCHEN | 330 | JAN 04 2001 | Fed Ex | | | 01-04-01 |
| Relinquished By | | | Date/Time 10:AM | Received By | | | Date/Time 10:AM |
| FED EXPRESS | | | 01-05-01 | E. SEGURO | | | 01-05-01 |
| 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 |
|---|---|---|---|
| | | | |

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-12

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. E. PARCHEN | Contact/Requester: JH KESSNER H1205 (7604) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS - H38 | Ice Chest No.: SML-48 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1551 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP2 (F) | | W | 1/4/01 | 0940 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. E. PARCHEN | | 1330 JAN 04 2001 | Fed Ex | | | 01-04-01 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| FED. EXPRESS | | | 01-05-01 10:[illegible] | E. SEGURO | | | 01-05-01 10:[illegible] |
| 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 |
|---|---|---|---|
| | | | |

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-10

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER H1205 (7604) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H39 | Ice Chest No.: SML465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP4 (F) | | W | 1-4-01 | 0913 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP5 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP5 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP5 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP5 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP5 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP5 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| J. G. HOGAN / J Hogan | JAN 04 2001 1230 | Fed Ex | 01-04-01 |
| FED. EXPRESS | 01-05-01 10 A | E. SEGURO | 01-05-01 10 AM |
| | | | |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-46

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER H1205 (7604) | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H39 | Ice Chest No.: SML 465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LV0 (F) | | W | 1-4-01 | 1142 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LV1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LV1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LV1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| J. G. HOGAN | | J G Hogan | JAN 0 4 2001 12:30 | FED EX | | | 01-04-01 |
| FED. EXPRESS | | | 01-05-01 10:AM | E. Reguro | | | 01-05-01 10:AM |
| | | | | | | | |
| | | | | | | | |

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

**ThermoRetec**
**Richmond Laboratory**

**Analytical Services**

## ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: BECHTEL HANFORD (PNNL) Date: 01-05-01 10:AM

| | | | | | | |
|---|---|---|---|---|---|---|
| Ice chest # or description | SML-465 | | | | | |
| Thermometer: time in | 12:30 | | | | | |
| Thermometer: time out | 1:30 pm | | | | | |
| Thermometer reading | 4°C | | | | | |
| Thermometer number | 6536 | | | | | |
| Correction factor | — | | | | | |
| Actual temperature* | NONE | | | | | |
| Custody seals on ice chest intact? | Yes | | | | | |
| Custody seals dated ? | Yes | | | | | |
| Custody seals signed? | Yes | | | | | |
| Custody seals on samples? | Yes | | | | | |
| Ice chest scanned for activity? | Yes | | | | | |

* Temperature is in degrees centigrade.

Technician: E. Dogurro

Comments: SAMPLE ARE IN GOOD condition.

**ThermoRetec**
**Richmond Laboratory**

**Analytical Services**

## ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: BECHTEL HANFORD (PNNL) Date: 01-05-01- 10:AM

| | | | | | | |
|---|---|---|---|---|---|---|
| Ice chest # or description | SML-48 | | | | | |
| Thermometer: time in | 12:25 | | | | | |
| Thermometer: time out | 1:35 | | | | | |
| Thermometer reading | 4°C | | | | | |
| Thermometer number | 2132 | | | | | |
| Correction factor | NONE | | | | | |
| Actual temperature* | — | | | | | |
| Custody seals on ice chest intact? | Yes | | | | | |
| Custody seals dated ? | Yes | | | | | |
| Custody seals signed? | Yes | | | | | |
| Custody seals on samples? | Yes | | | | | |
| Ice chest scanned for activity? | Yes | | | | | |

* Temperature is in degrees centigrade.

Technician: E. Daguro

Comments: SAMPLES okay.

**ThermoRetec**
**Richmond Laboratory**

**Analytical Services**

## ICE CHEST RECEIPT LOG

Use one form per shipment. Refer to Thermometer Correction Log for correction factor.

Customer: BECHTEL HANFORD (PNNL) Date: 01-05, 01- Received: 10:AM

| | | | | | | |
|---|---|---|---|---|---|---|
| Ice chest # or description | SML-002 | | | | | |
| Thermometer: time in | 1:30 | | | | | |
| Thermometer: time out | 2:25 | | | | | |
| Thermometer reading | | | | | | |
| Thermometer number | 6536 | | | | | |
| Correction factor | NONE | | | | | |
| Actual temperature* | — | | | | | |
| Custody seals on ice chest intact? | Yes | | | | | |
| Custody seals dated ? | Yes | | | | | |
| Custody seals signed? | Yes | | | | | |
| Custody seals on samples? | Yes | | | | | |
| Ice chest scanned for activity? | Yes | | | | | |

* Temperature is in degrees centigrade.

Technician: E. SEGURO

Comments: SAMPLES ARE okay

ThermoRetec
Richmond Laboratory

(7604)

Analytical Services

## SAMPLE RECEIPT CHECKLIST

### SAMPLE RECEIPT

Client: BECHTEL HANFORD (PNNL) Date/Time received 01-05-01 10:AM

CoC No. C01-008-10, 12, 24, 34, 40, 46, 150, SML465, SML-48, SML-002,

Container I.D. No. _____ Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

### INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Cooler Temperature: _____ Packing material is: Wet [ ] Dry [ ]
6. Number of samples in shipping container: 14
7. Number of containers per sample: CHECK (Or see CoC ✓ )
8. Paperwork agrees with samples? Yes [✓] No [ ]
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
11. Describe any anomalies: _____
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
14. Received by E. Segura Date: 1-05-01 Time: 10:AM

| Customer Sample No. | cpm | mr/hr | Customer Sample No. | Cpm | mr/hr |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Ion Chamber Ser. No. _____ Calibration date _____

Survey Meter Ser No. _____ Calibration date _____

FEB 2001 RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| B10LP0 | | | | | | |
| SILVER, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SILVER, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SILVER, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| MAGNESIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 001 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 001 REP | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 001 MS | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LP1 | | | | | | |
| SILVER, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| SODIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 002 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LN6 | | | | | | |
| SILVER, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 003 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LN7 | | | | | | |
| SILVER, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| CHROMIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 004 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LN4 | | | | | | |
| SILVER, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 005 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LN5 | | | | | | |
| SILVER, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| ALUMINUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 006 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LL0 | | | | | | |
| SILVER, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| VANADIUM, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 007 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LL1 | | | | | | |
| SILVER, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 008 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LL2 | | | | | | |
| SILVER, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| MAGNESIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 009 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LL3 | | | | | | |
| SILVER, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 010 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LK6 | | | | | | |
| SILVER, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| CADMIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 011 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| B10LK7 | | | | | | |
| SILVER, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| IRON, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | 012 | W | 01L0019 | 01/02/01 | 01/19/01 | 01/24/01 |

LAB QC:

| | | | | | | |
|---|---|---|---|---|---|---|
| SILVER LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

DATE RECEIVED: 01/10/01 LVL LOT # :0101L727

| CLIENT ID /ANALYSIS | LVL # | MTX | PREP # | COLLECTION | EXTR/PREP | ANALYSIS |
|---|---|---|---|---|---|---|
| SILVER, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| ALUMINUM LABORTORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| ALUMINUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| BARIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| BARIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| BERYLLIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| BERYLLIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| CALCIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| CALCIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| CADMIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| CADMIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| COBALT LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| COBALT, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| CHROMIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| CHROMIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| COPPER LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| COPPER, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| IRON LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| IRON, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| POTASSIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| POTASSIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| MAGNESIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| MAGNESIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| MANGANESE LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| MANGANESE, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| SODIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| SODIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| NICKEL LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| NICKEL, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| ANTIMONY LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| ANTIMONY, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| STRONTIUM LCS STANDA | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| STRONTIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| VANADIUM LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| VANADIUM, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| ZINC LABORATORY | LC1 BS | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |
| ZINC, TOTAL | MB1 | W | 01L0019 | N/A | 01/19/01 | 01/24/01 |

LIONVILLE LABORATORY INC.

**Analytical Report**

**Client:** TNU-HANFORD C01-008
**LVL#:** 0101L727
**SDG/SAF#:** H1200/C01-008

**W.O.#:** 10985-001-001-9999-00
**Date Received:** 01-10-01

**METALS CASE NARRATIVE**

1. This narrative covers the analyses of 12 water samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

3. All analyses were performed within the required holding times.

4. All cooler temperatures have been recorded on the Chain of Custody.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of the final CCV for Cadmium. All samples were surrounded by QC that was in control.

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

10. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration levels, due to high concentrations of the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 45 pages.



208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

| Sample ID | Element | PDS Concentration (ppb) | PDS % Recovery |
|---|---|---|---|
| B10LP0 | Calcium | 25,000 | 94.8 |
| | Potassium | 50,000 | 105.0 |
| | Magnesium | 25,000 | 102.7 |
| | Sodium | 50,000 | 95.7 |
| | Strontium | 500 | 95.3 |

12. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, 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.

15. As of January 27, 2001, Recra LabNet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra LabNet Philadelphia.

J. Michael Taylor
President
Lionville Laboratory Incorporated

gmb/m01-727

02-16-0

Date

# METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 01011727

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: ✓3005A __3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

## Metals Analysis Methods

| | SW846 | | EPA | | STD MTD | EPA OSWR | USATHAMA |
|---|---|---|---|---|---|---|---|
| Aluminum | ✓6010B | | __200.7 | | | | __99 |
| Antimony | ✓6010B | __7041 [5] | __200.7 | __204.2 | | | __99 |
| Arsenic | __6010B | __7060A [5] | __200.7 | __206.2 | __3113B | | __99 |
| Barium | ✓6010B | | __200.7 | | | | __99 |
| Beryllium | ✓6010B | | __200.7 | | | | __99 |
| Bismuth | __6010B [1] | | __200.7 [1] | | | __1620 | __99 |
| Boron | __6010B | | __200.7 | | | | __99 |
| Cadmium | ✓6010B | __7131A [5] | __200.7 | __213.2 | | | __99 |
| Calcium | ✓6010B | | __200.7 | | | | __99 |
| Chromium | ✓6010B | __7191 [5] | __200.7 | __218.2 | | | __SS17 |
| Cobalt | ✓6010B | | __200.7 | | | | __99 |
| Copper | ✓6010B | __7211 [5] | __200.7 | __220.2 | | | __99 |
| Iron | ✓6010B | | __200.7 | | | | __99 |
| Lead | __6010B | __7421 [5] | __200.7 | __239.2 | __3113B | | __99 |
| Lithium | __6010B | __7430 [4] | __200.7 | | | __1620 | __99 |
| Magnesium | ✓6010B | | __200.7 | | | | __99 |
| Manganese | ✓6010B | | __200.7 | | | | __99 |
| Mercury | __7470A [3] | __7471A [3] | __245.1 [2] | __245.5 [2] | | | __99 |
| Molybdenum | ✓6010B | | __200.7 | | | | __99 |
| Nickel | ✓6010B | | __200.7 | | | | __99 |
| Potassium | ✓6010B | __7610 [4] | __200.7 | __258.1 [4] | | | __99 |
| Rare Earths | __6010B [1] | | __200.7 [1] | | | __1620 | __99 |
| Selenium | __6010B | __7740 [5] | __200.7 | __270.2 | __3113B | | __99 |
| Silicon | __6010B [1] | | __200.7 | | | __1620 | __99 |
| Silica | __6010B | | __200.7 | | | __1620 | __99 |
| Silver | ✓6010B | __7761 [5] | __200.7 | __272.2 | | | __99 |
| Sodium | ✓6010B | __7770 [4] | __200.7 | __273.1 [4] | | | __99 |
| Strontium | ✓6010B | | __200.7 | | | | __99 |
| Thallium | __6010B | __7841 [5] | __200.7 | __279.2 | __200.9 | | __99 |
| Tin | __6010B | | __200.7 | | | | __99 |
| Titanium | __6010B | | __200.7 | | | | __99 |
| Uranium | __6010B [1] | | __200.7 [1] | | | __1620 | __99 |
| Vanadium | ✓6010B | | __200.7 | | | | __99 |
| Zinc | ✓6010B | | __200.7 | | | | __99 |
| Zirconium | __6010B [1] | | __200.7 [1] | | | __1620 | __99 |

Other:_____ Method:_____

L-WI-833/M-11/99

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

## ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -001 | B10LP0 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 122 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 79400 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 592 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 21.8 | u | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5200 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 21700 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.53 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 12400 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 1.3 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 3.2 | | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 525 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 7.3 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 3.2 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -002 | B10LP1 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 119 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 80000 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 610 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 1.2 | | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 92.9 | | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5120 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 21900 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 2.4 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 12300 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 6.1 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 515 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 8.3 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 4.6 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -003 | B10LN6 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 111 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 77000 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 250 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 21.8 | u | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5510 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 19600 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.22 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 15000 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 518 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 9.9 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 3.0 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -004 | B10LN7 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 110 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 75900 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 248 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 35.0 | | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5460 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 19300 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 1.1 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 14900 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 1.3 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 510 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 9.9 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 6.7 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -005 | B10LN4 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 79.2 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 79400 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 278 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 21.8 | u | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 6170 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 26900 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.31 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 14400 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 1.2 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 641 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 10.1 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 4.4 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| -006 | B10LN5 | Silver, Total | 1.1 u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 48.3 | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 81.3 | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 82400 | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 296 | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 133 | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 6250 | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 27800 | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 3.6 | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 14700 | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 3.3 | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 652 | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 10.4 | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 9.3 | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -007 | B10LL0 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 68.2 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 63500 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 24.2 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 27.0 | | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5620 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 20400 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.67 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 26700 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 2.3 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 437 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 6.4 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 1.4 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -008 | B10LL1 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 118 | | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 70.8 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 64800 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 35.6 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 1.2 | | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 282 | | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5720 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 20800 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 4.6 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 27000 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 6.9 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 443 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 7.3 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 3.4 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -009 | B10LL2 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 68.3 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 64600 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 24.2 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 27.3 | | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5560 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 20700 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.59 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 26100 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 2.5 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 439 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 6.6 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 1.4 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| -010 | B10LL3 | Silver, Total | 1.1 u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 38.5 | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 68.1 | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 61700 | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 29.0 | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 1.9 | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 137 | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 5480 | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 20000 | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 3.3 | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 26300 | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 4.9 | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 429 | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 6.8 | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 2.9 | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| -011 | B10LK6 | Silver, Total | 1.1 u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 81.3 | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 53900 | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 259 | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 21.8 u | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 4770 | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 18200 | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.20 u | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 11900 | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 0.90 u | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 410 | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 14.3 | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 1.1 | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| -012 | B10LK7 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 83.2 | | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 55900 | | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 272 | | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 41.9 | | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 4790 | | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 18800 | | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 1.4 | | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 12200 | | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 2.3 | | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 620 | | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 15.0 | | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 1.7 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|---|
| BLANK1 | 01L0019-MB1 | Silver, Total | 1.1 | u | UG/L | 1.1 | 1.0 |
| | | Aluminum, Total | 22.7 | u | UG/L | 22.7 | 1.0 |
| | | Barium, Total | 0.20 | u | UG/L | 0.20 | 1.0 |
| | | Beryllium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Calcium, Total | 19.2 | u | UG/L | 19.2 | 1.0 |
| | | Cadmium, Total | 0.30 | u | UG/L | 0.30 | 1.0 |
| | | Cobalt, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Chromium, Total | 0.60 | u | UG/L | 0.60 | 1.0 |
| | | Copper, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Iron, Total | 21.8 | u | UG/L | 21.8 | 1.0 |
| | | Potassium, Total | 40.9 | u | UG/L | 40.9 | 1.0 |
| | | Magnesium, Total | 6.7 | u | UG/L | 6.7 | 1.0 |
| | | Manganese, Total | 0.20 | u | UG/L | 0.20 | 1.0 |
| | | Sodium, Total | 4.1 | u | UG/L | 4.1 | 1.0 |
| | | Nickel, Total | 0.90 | u | UG/L | 0.90 | 1.0 |
| | | Antimony, Total | 2.3 | u | UG/L | 2.3 | 1.0 |
| | | Strontium, Total | 0.10 | u | UG/L | 0.10 | 1.0 |
| | | Vanadium, Total | 0.80 | u | UG/L | 0.80 | 1.0 |
| | | Zinc, Total | 0.53 | | UG/L | 0.40 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | SPIKED SAMPLE | INITIAL RESULT | SPIKED AMOUNT | %RECOV | DILUTION FACTOR(SPK) |
|---|---|---|---|---|---|---|---|
| -001 | B10LP0 | Silver, Total | 49.1 | 1.1 u | 50.0 | 98.2 | 1.0 |
| | | Aluminum, Total | 2010 | 22.7 u | 2000 | 100.6 | 1.0 |
| | | Barium, Total | 2080 | 122 | 2000 | 97.8 | 1.0 |
| | | Beryllium, Total | 49.5 | 0.10u | 50.0 | 99.0 | 1.0 |
| | | Calcium, Total | 90700 | 79400 | 25000 | 45.2 | 1.0 |
| | | Cadmium, Total | 48.4 | 0.30u | 50.0 | 96.8 | 1.0 |
| | | Cobalt, Total | 490 | 0.90u | 500 | 98.0 | 1.0 |
| | | Chromium, Total | 782 | 592 | 200 | 95.3 | 1.0 |
| | | Copper, Total | 244 | 0.90u | 250 | 97.5 | 1.0 |
| | | Iron, Total | 994 | 21.8 u | 1000 | 99.4 | 1.0 |
| | | Potassium, Total | 18300 | 5200 | 25000 | 52.5 | 1.0 |
| | | Magnesium, Total | 34300 | 21700 | 25000 | 50.5 | 1.0 |
| | | Manganese, Total | 506 | 0.53 | 500 | 101.0 | 1.0 |
| | | Sodium, Total | 24800 | 12400 | 25000 | 49.5 | 1.0 |
| | | Nickel, Total | 482 | 1.3 | 500 | 96.2 | 1.0 |
| | | Antimony, Total | 513 | 3.2 | 500 | 101.9 | 1.0 |
| | | Strontium, Total | 1020 | 525 | 1000 | 49.3 | 1.0 |
| | | Vanadium, Total | 509 | 7.3 | 500 | 100.3 | 1.0 |
| | | Zinc, Total | 493 | 3.2 | 500 | 98.0 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | INITIAL RESULT | REPLICATE | RPD | DILUTION FACTOR(REP) |
|---|---|---|---|---|---|---|
| -001REP | B10LP0 | Silver, Total | 1.1 u | 1.1 u | NC | 1.0 |
| | | Aluminum, Total | 22.7 u | 22.7 u | NC | 1.0 |
| | | Barium, Total | 122 | 119 | 2.2 | 1.0 |
| | | Beryllium, Total | 0.10u | 0.10u | NC | 1.0 |
| | | Calcium, Total | 79400 | 78600 | 1.0 | 1.0 |
| | | Cadmium, Total | 0.30u | 0.30u | NC | 1.0 |
| | | Cobalt, Total | 0.90u | 0.90u | NC | 1.0 |
| | | Chromium, Total | 592 | 584 | 1.3 | 1.0 |
| | | Copper, Total | 0.90u | 0.90u | NC | 1.0 |
| | | Iron, Total | 21.8 u | 21.8 u | NC | 1.0 |
| | | Potassium, Total | 5200 | 5100 | 1.8 | 1.0 |
| | | Magnesium, Total | 21700 | 21500 | 0.94 | 1.0 |
| | | Manganese, Total | 0.53 | 0.50 | 5.8 | 1.0 |
| | | Sodium, Total | 12400 | 12200 | 1.7 | 1.0 |
| | | Nickel, Total | 1.3 | 1.4 | 7.4 | 1.0 |
| | | Antimony, Total | 3.2 | 2.8 | 13.3 | 1.0 |
| | | Strontium, Total | 525 | 515 | 1.9 | 1.0 |
| | | Vanadium, Total | 7.3 | 6.9 | 5.6 | 1.0 |
| | | Zinc, Total | 3.2 | 3.1 | 3.2 | 1.0 |

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/15/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | SPIKED SAMPLE | SPIKED AMOUNT | UNITS | %RECOV |
|---|---|---|---|---|---|---|
| LCS1 | 01L0019-LC1 | Silver, LCS | 504 | 500 | UG/L | 100.7 |
| | | Aluminum, LCS | 5050 | 5000 | UG/L | 101.1 |
| | | Barium, LCS | 4940 | 5000 | UG/L | 98.8 |
| | | Beryllium, LCS | 246 | 250 | UG/L | 98.5 |
| | | Calcium, LCS | 24400 | 25000 | UG/L | 97.4 |
| | | Cadmium, LCS | 247 | 250 | UG/L | 98.8 |
| | | Cobalt, LCS | 2480 | 2500 | UG/L | 99.0 |
| | | Chromium, LCS | 492 | 500 | UG/L | 98.5 |
| | | Copper, LCS | 1230 | 1250 | UG/L | 98.7 |
| | | Iron, LCS | 4940 | 5000 | UG/L | 98.8 |
| | | Potassium, LCS | 25900 | 25000 | UG/L | 103.5 |
| | | Magnesium, LCS | 25300 | 25000 | UG/L | 101.3 |
| | | Manganese, LCS | 759 | 750 | UG/L | 101.2 |
| | | Sodium, LCS | 24700 | 25000 | UG/L | 99.0 |
| | | Nickel, LCS | 1970 | 2000 | UG/L | 98.5 |
| | | Antimony, LCS | 3020 | 3000 | UG/L | 100.5 |
| | | Strontium, LCS | 4970 | 5000 | UG/L | 99.4 |
| | | Vanadium, LCS | 2520 | 2500 | UG/L | 100.8 |
| | | Zinc, LCS | 995 | 1000 | UG/L | 99.5 |

| RECRA LabNet Use Only |
|---|
| 01012727 |

# Custody Transfer Record/Lab Work Request

Page 1 of 3

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

(9) Met Dig Personnel

RECRA LabNet

Client: TNU-HANFORD SAF C01-008
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: Q1
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 1-10-01 Date Due: 2-9-01
Account #:

| | | A | B |
|---|---|---|---|
| Refrigerator # | | 6 | 6 |
| #/Type Container | Liquid | 1PL | 1PL |
| | Solid | | |
| Volume | Liquid | 500 | 500 |
| | Solid | | |
| Preservatives | | HNO3 | — |

ANALYSES REQUESTED →

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | ORGANIC VOA | BNA | Pest/PCB | Herb | INORG Metal | CN | Radionuclides |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | RECRA LabNet Use Only | | | | (1) Met | | (1) IC |
| 001 | B10LP0 | | | W | 1-2-01 | 0921 | | | | | 1 | | |
| 002 | P1 | | | | | ⊥ | | | | | 1 | | 1 |
| 003 | N6 | | | | | 1201 | | | | | 1 | | |
| 004 | NT | | | | | ⊥ | | | | | 1 | | 1 |
| 005 | N4 | | | | | 1244 | | | | | 1 | | |
| 006 | N5 | | | | | ⊥ | | | | | 1 | | 1 |
| 007 | LD | | | | | 1106 | | | | | 1 | | |
| 008 | L1 | | | | | ⊥ | | | | | 1 | | 1 |
| 009 | L2 | | | | | 1106 | | | | | 1 | | |
| 010 | L3 | | | ⊥ | ⊥ | ⊥ | | | | | 1 | | 1 |

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions: SAF C01-008

Run Matrix QC

DATE/REVISIONS:

Met (1) 1. Al, Ag, Ba, Be, Ca, Cd, Cr, Cu, Co, Fe, K,
⊥ 2. Mg, Mn, Ni, Na, Sb, Sr, V, Zn
IC (1) 3. Br, Cl, F, $NO_2$, $NO_3$, $PO_4$, $SO_4$
1-12-01 4. #013-026 relogged to 01012761
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # See below
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N (3 days)

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N
Cooler Temp. 4.1 °C
13.0

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES: 8214 8983 1864

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| Fred Eg | V. Henry | 1-10-01 | 0940 |
| | | | |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| COMPOSITE WASTE | ORIGINAL REWRITTEN | | |
| | | | |

3

RECRA LabNet Use Only

0101L727

# Custody Transfer Record/Lab Work Request

Page 2 of 3

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

RECRA LabNet

Client TNU-HANFORD SAF. C01-008

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

Date Rec'd Date Due

Account #

| | | A | B |
|---|---|---|---|
| Refrigerator # | | 6 | 6 |
| #/Type Container | Liquid | 1PL | 1PL |
| | Solid | | |
| Volume | Liquid | 500 | 500 |
| | Solid | | |
| Preservatives | | HNO3 | – |

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN, Anions

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | Metal | CN | Anions |
|---|---|---|---|---|---|---|---|---|---|
| 011 | B10LK6 | | | W | 1-2-01 | 1208 | 1 | | |
| 012 | K7 | | | | 1 | 1 | 1 | | 1 |
| 013 | C2 TK 1-12-01 | | | | 1-4-01 | 1040 | 1 | | |
| 014 | C3 TK 1-12-01 | | | | 1 | 1 | 1 | | 1 |
| 015 | F6 TK 1-12-01 | | | | 1-3-01 | 1207 | 1 | | |
| 016 | F7 TK 1-12-01 | | | | 1 | 1 | 1 | | 1 |
| 017 | K8 TK 1-12-01 | | | | 1 | 1117 | 1 | | |
| 018 | K9 TK 1-12-01 | | | | 1 | 1 | 1 | | 1 |
| 019 | P2 TK 1-12-01 | | | | 1-4-01 | 0948 | 1 | | |
| 020 | P3 TK 1-12-01 | | | | 1 | 1 | 1 | | 1 |

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| Fed Ex | [illegible] | 1-4-01 | 0940 |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |

RECRA LabNet Use Only

0101C727

# Custody Transfer Record/Lab Work Request



**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

RECRA LabNet

Client: TNL-HANFORD SAF- C01-008

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

Date Rec'd: Date Due:

Account #:

| | | A | B |
|---|---|---|---|
| Refrigerator # | | 6 | 6 |
| #/Type Container | Liquid | 1PL | 1PL |
| | Solid | | |
| Volume | Liquid | 500 | 500 |
| | Solid | | |
| Preservatives | | HNO3 | — |
| ANALYSES REQUESTED | ORGANIC: VOA | | |
| | ORGANIC: BNA | | |
| | ORGANIC: Pest/PCB | | |
| | ORGANIC: Herb | | |
| | INORG: Metal | | |
| | INORG: CN | | |
| | INORG: Anions | | |
| RECRA LabNet Use Only | | 01 | 01 |

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 021 | BIOL P4 TK1-12-C1 | | | W | 6-4-01 | 0913 | | | | | | | | 1 | | | | | | | |
| 022 | P5 TK1-12-C1 | | | | | 1 | | | | | | | | 1 | | 1 | | | | | |
| 023 | VO TK1-12-C1 | | | | | 1142 | | | | | | | | 1 | | | | | | | |
| 024 | V1 TK1-12-C1 | | | | | 1 | | | | | | | | 1 | | 1 | | | | | |
| 025 | MO TK1-12-C1 | | | | | 1247 | | | | | | | | 1 | | | | | | | |
| 026 | M1 TK1-12-C1 | | | | | 1 | | | | | | | | 1 | | 1 | | | | | |

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| Fed Ex | [illegible] | 6-10-01 | 0940 |
| | | | |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |
| | | | |

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped or Hand Delivered
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. °C

0101L121 QUALIFIED JH 1-1-01

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-14

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H35 | Ice Chest No.: ~~SMC-214~~ 5ML176 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 42357954 1578 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP0 (F) | | W | 1-2-01 | 0921 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1200 1-03-01 | | Fed Ex | | 01-03-0 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| FED EXP12088 | | | 10:AM 01-04-01 | | E. Segura | E. SEGURO | 10:AM 01-04-01 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| FedEx | | | 1-10-01 - 0940 | | Vicki Kennedy | | 1-10-01 0940 |
| 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 |
|---|---|---|---|
| | | | |

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-18



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WAA-SAWS-H38 | Ice Chest No.: SML540 Temp. |
| Shipped To (Lab): TMA/RPCRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1507 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LN6 (F) | | W | 1/2/01 | 1201 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LN7 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LN7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LN7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 10:00 01-04-01 | C. SEGURO | | | 10:00 01-04-01 |
| Fed Ex | | | 1-10-01 0940 | Neil Hernandez | | | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

SDG: H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-20

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAW-143B | Ice Chest No.: ER40 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1529 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LN4 (F) | | W | 1/2/01 | 1244 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LN5 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LN5 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LN5 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | D.R. Brewington | | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 10:AM 01-04-01 | E-Aguiro | E SEGURO | | 10:AM 01-04-01 |
| Fed Ex | | | 1-10-01 0940 | Vicki Hernandez | | | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-22



| | | |
|---|---|---|
| Collector D. R. BREWINGTON | Contact/Requester JH KESSNER | Telephone No. (509) 375-4688 MSIN FAX |
| SAF No. C01-008 | Sampling Origin HANFORD SITE | Purchase Order/Charge Code |
| Project Title 100HR3 IAM (1&2) GW MONITORING, NOVEMBER 2000 | Logbook No. WM-SAWS-H38 | Ice Chest No. SML176 Temp. |
| Shipped To (Lab) TMA/RECRA | Method of Shipment GOVT. VEHICLE | Bill of Lading/Air Bill No. 4235795541518 |
| Protocol CERCLA | Data Turnaround 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| 7 B10LL0 (F) | | W | 1/2/01 | 1106 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 8 B10LL1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 8 B10LL1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LL1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LL1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LL1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LL1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 10 AM 01-04-01 | E. Segura | | E. Segura | 10 AM 01-04-01 |
| Fed Ex | | | 1-10-01 0940 | | | Vicki Hernandez | 1-10-01 0940 |

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

PNNL

SDG: H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-23

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H30 | Ice Chest No.: SMLI76 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1518 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS

** **

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

Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LL2 (F) | | W | 1/2/01 | 1106 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW FOR RECRA | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW FOR RECRA | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x500-mL P | IC Anions - 300.0 FOR RECRA | Cool 4C |
| B10LL3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LL3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LL3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| Fed Express | | | 01-04-01 10:AM | E. Segura | | E SEGURO | 01-04-01 10:AM |
| Fed Ex | | | 1-10-01 0940 | Nick Hennessy | | | 1-10-01 0940 |
| | | | | | | | |

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

3-1

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-26



| | | |
|---|---|---|
| Collector: D. E. PARCHEN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H39 | Ice Chest No.: ER40 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1529 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
" "

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| | Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|---|
| 1 | B10LK6 (F) | | W | 1-2-01 | 1208 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 2 | B10LK7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 2 | B10LK7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| | B10LK7 | | W | | | 1x20-mL P | Activity Scan | None |
| | B10LK7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| | B10LK7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| | B10LK7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. E. PARCHEN | | | 1-03-01 1200 | FED EX | | | 01-03-01 |
| FED EXPRESS | | | 01-04-01 10:00 | E. Segura | | E. SEGURA | 01-04-01 10:AM |
| Fed Ex | | 1-10-01 | 0940 | [illegible] | | | 1-10-01 0940 |
| | | | | | | | |

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

38

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-40

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WVM-SAWS-1139 | Ice Chest No.: SOUL 465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
" "

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| | Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|---|
| 13 | B10LC2 (F) ✓ | | W | 1-4-01 | 1040 ✓ | 1x500-mL G/P ✓ | ICP Metals - 6010A RCRA GW ✓ | HNO3 to pH <2 |
| 14 | B10LC3 ✓ | | W | ↓ | ↓ | 1x500-mL G/P ✓ | ICP Metals - 6010A RCRA GW ✓ | HNO3 to pH <2 |
| 14 | B10LC3 ✓ | | W | ↓ | ↓ | 1x500-mL P ✓ | IC Anions - 300.0 ✓ | Cool 4C |
| | B10LC3 ✓ | | W | ↓ | ↓ | 1x20-mL P ✓ | Activity Scan ✓ | None |
| | B10LC3 ✓ | | W | ↓ | ↓ | 2x1000-mL G/P ✓ | Gross Alpha ✓ | HNO3 to pH <2 |
| | B10LC3 ✓ | | W | ↓ | ↓ | 2x1000-mL G/P ✓ | Gross Beta ✓ | HNO3 to pH <2 |
| | B10LC3 ✓ | | W | ↓ | ↓ | 1x250-mL P ✓ | Tritium - H3 ✓ | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| J. G. HOGAN | | J. Hogan | JAN 04 2001 1230 | Fed Ex | | | 01-04-01 |
| Relinquished By: PED. EXPRESS | | | Date/Time: 01-05-01 10:30 | Received By: F. SEGURO | | | Date/Time: 01-05-01 10 AM |
| Relinquished By: Fed Ex | 1-10-01 | | Date/Time: 0940 | Received By: Cuti Hernandez | 1-10-01 | | Date/Time: 0940 |
| 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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-34

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H38 | Ice Chest No.: SMI-002 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1573 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LJ8 (F) | | W | 1/3/01 | 1207 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LJ7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LJ7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LJ7 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LJ7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LJ7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LJ7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 10-1-01 1335 | FED EX | | | 01-04-01 |
| Fed. Express | | | 01-05-01 10 am | E. Sugino | | | 01-05-01 10 am |
| Fed Ex | | | 1-10-01 0940 | Ted Kennedy | | | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-24

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H38 | Ice Chest No.: 3ML-002 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1573 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| 17 B10LK8 (F) | | W | 1/3/01 | 1117 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 18 B10LK9 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 18 B10LK9 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LK9 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LK9 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LK9 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LK9 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1/4/01 1725 | FEDEX | | | 01-04-01 |
| FED. EXPRESS | | | 01-05-01 10 AM | E. SEGURO | | | 01-05-01 |
| FedEx | | | 1-10-01 0940 | | | | 1-10-01 0940 |

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 | |

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-1

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. E. PARCHEN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H38 | Ice Chest No.: SML-48 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1551 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP2 (F) | | W | 1/4/01 | 0948 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Print 1330 Sign D. E. PARCHEN | JAN 04 2001 | Print Sign Fed Ex | 01-04-01 |
| FED. EXPRESS | 01-05-01 10:AM | E. SEGURO | 01-05-01 10:AM |
| Fed Ex | 1-10-01 0940 | Vicki Hernandez | 1-10-01 0940 |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-10

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-439 | Ice Chest No.: SWL465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| | Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|---|
| 21 | B10LP4 (F) | | W | 1-4-01 | 0913 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 22 | B10LP5 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 22 | B10LP5 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| | B10LP5 | | W | | | 1x20-mL P | Activity Scan | None |
| | B10LP5 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| | B10LP5 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| | B10LP5 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| J. G. HOGAN / J. Hogan | JAN 04 2001 2300 | Fed Ex | 01-04-01 |
| FED. EXPRESS | 01-05-01 10A | E. SEGURO | 01-05-01 10A |
| Fed Ex 1-10-01 | 0940 | Keith Hernandez 1-10-01 | 0940 |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-46

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER 2000 | Logbook No.: WMS-SHWS-1139 | Ice Chest No.: SML 465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LV0 (F) | | W | 1-4-01 | 1142 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LV1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LV1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LV1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| J. G. HOGAN / J. Hogan | JAN 0 4 2001 1230 | FED EX | 01-04-01 |
| FED. EXPRESS | 01-05-01 10:AM | E. Deguro | 01-05-01 10:AM |
| Fed Ex | 1-10-01 0940 | Vicki Hernandez | 1-10-01 0940 |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-150

Page 1 of 1

| | | |
|---|---|---|
| Collector D. E. PARCHEN | Contact/Requester JH KESSNER | Telephone No. (509) 375-4688 MSIN FAX |
| SAF No. C01-008 | Sampling Origin HANFORD SITE | Purchase Order/Charge Code |
| Project Title 100HR3 IAM (1&2) GW MONITORING, NOVEMBER 2000 | Logbook No. WM-SAWS-H38 | Ice Chest No. SMC-48 Temp. |
| Shipped To (Lab) TMA/RECRA | Method of Shipment GOVT. VEHICLE | Bill of Lading/Air Bill No. 4235 7954 1551 |
| Protocol CERCLA | Data Turnaround 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LM0 (F) | | W | 1/10/01 | 1277 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LM1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LM1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LM1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x250-mL P | Tritium - H3 | None |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. E. PARCHEN | | 1330 JAN 04 2001 | Fed Ex | | | 01-04-01 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| FED EXPRESS | | | 01-05-01 | E. SEGURO | | | 01-05-01 |
| Relinquished By | | | Date/Time | Received By | | | Date/Time |
| Fed Ex | | | 1-10-01 0940 | | | | 1-10-01 0940 |
| 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 |
|---|---|---|---|
| | | | |

FEB 2001
RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

RFW LOT # :0101L727

| CLIENT ID /ANALYSIS | RFW # | MTX | PREP # | COLLECTN | DATE REC | EXT/PREP | ANALYSIS |
|---|---|---|---|---|---|---|---|
| B10LP1 | | | | | | | |
| BROMIDE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 002 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| B10LN7 | | | | | | | |
| BROMIDE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 004 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| B10LN5 | | | | | | | |
| BROMIDE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 006 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| B10LL1 | | | | | | | |
| BROMIDE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 008 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

RFW LOT # :0101L727

| CLIENT ID /ANALYSIS | RFW # | MTX | PREP # | COLLECTN | DATE REC | EXT/PREP | ANALYSIS |
|---|---|---|---|---|---|---|---|
| B10LL3 | | | | | | | |
| BROMIDE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 010 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| B10LK7 | | | | | | | |
| BROMIDE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| BROMIDE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| BROMIDE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRITE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| NITRATE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 012 | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 012 REP | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |
| SULFATE BY IC | 012 MS | W | 01LIC004 | 01/02/01 | 01/10/01 | 01/17/01 | 01/17/01 |

LAB QC:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD C01-008 H1200

RFW LOT # :0101L727

| CLIENT ID /ANALYSIS | RFW # | MTX | PREP # | COLLECTN | DATE REC | EXT/PREP | ANALYSIS |
|---|---|---|---|---|---|---|---|
| BROMIDE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| BROMIDE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| CHLORIDE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| FLUORIDE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| NITRITE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| NITRITE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| NITRATE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| NITRATE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| PHOSPHATE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| SULFATE BY IC | MB1 | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |
| SULFATE BY IC | MB1 BS | W | 01LIC004 | N/A | N/A | 01/17/01 | 01/17/01 |

02A

LIONVILLE LABORATORY INC.

**Analytical Report**

**Client:** TNU-HANFORD C01-008 H1200
**RFW#:** 0101L727

**W.O.#:** 01985-001-001-9999-00
**Date Received:** 01-10-01

## INORGANIC NARRATIVE

As of 27 January 2001, Recra LabNet Philadelphia became Lionville Laboratory Inc. Some forms may still reference Recra LabNet Philadelphia.

1. This narrative covers the analyses of 6 water samples.

2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.

3. Sample holding times as required by the method and/or contract were met with the exception of Nitrate, Nitrite and Phosphate that received past hold.

4. The cooler temperatures were recorded on the chain of custody.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

J. Michael Taylor
President
Lionville Laboratory Inc.

02-11-01
Date

njp\01-727

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 29 pages.

03
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**Lionville Laboratory, Inc.**

## WET CHEMISTRY

## METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

| | EPA /600 | SW846 | OTHER |
|---|---|---|---|
| Acidity | ___ 305.1 | | |
| ___Alkalinity ___Bicarbonate ___Carbonate | ___ 310.1 | | |
| BOD | ___ 405.1 | | ___ 5210B (b) |
| Ion Chromatography: | | | |
| ✓ Bromide ✓ Chloride ✓ Fluoride | ✓ 300.0 | ___ 9056 | |
| ✓ Nitrate ✓ Nitrite ✓ Phosphate | ✓ 300.0 | ___ 9056 | |
| ✓ Sulfate ___Formate ___Acetate ___Oxalate | ✓ 300.0 | ___ 9056 | |
| Chloride | ___ 325.2 | ___ 9251 | |
| Chorine, Residual | ___ 330.5 (mod) | | |
| Cyanide, Amenable to Chlorination | ___ 335.2 | ___ 9010B | |
| Cyanide, Total | ___ 335.2 | ___ 9010B ___ 9014 | ___ ILMO4.0 (e) |
| Cyanide, Weak Acid Dissociable | | ___ | ___ 412 (a) ___ 4500CN-I (b) |
| COD | ___ 410.4(mod) | | ___ 5220C (b) |
| Color | ___ 110.2 | | |
| Corrosivity by Coupon | | ___ 1110(mod) | |
| Chromium VI | | ___ 7196A | ___ 3500Cr-D (b) |
| Fluoride | ___ 340.2 | | ___ 4500-FC |
| Hardness, Calcium | ___ 215.2 | | |
| Hardness, Total | ___ 130.2 | | |
| Iodide | | | ___ ASTM D19P202 (1) |
| Surfactant | ___ 425.1 | | |
| ___Nitrate-Nitrite ___Nitrate ___Nitrite | ___ 353.2 | | |
| Ammonia | ___ 350.3 | | |
| Total___ Kjeldahl ___ Organic Nitrogen | ___ 351.3 | | |
| Total___ Organic ___ Inorganic Carbon | ___ 415.1 | ___ 9060 | |
| Oil & Grease | ___ 413.1 | ___ 9070 | |
| ___ pH ____ pH; paper | ___ 150.1 | ___ 9040B ___ 9041A | |
| Petroleum Hydrocarbons, Total Recoverable | ___ 418.1 | | |
| Phenol | ___ 420.1 ___ 420.2 | ___ 9065 ___ 9066 | |
| ___Ortho ___Total Phosphate | ___ 365.2 | | ___ 4500-P B ___ C |
| Salinity | | | ___ 210A (a) ___ 2520 (b) |
| Settleable Solids | ___ 160.5 | | |
| Sulfide | ___ 376.1 | ___ 9030B/9034 (acid soluble) | |
| Reactive ___Cyanide ___Sulfide | | ___ Section 7.3 (__9014__9030B) | |
| Silica | ___ 370.1 | | |
| Sulfite | ___ 377.1 | | |
| Sulfate | ___ 375.4 | ___ 9038 | |
| Specific Conductance | ___ 120.1 | ___ 9050A | |
| Specific Gravity | | | ___ D5057-90 ___ 213E (a) |
| Synthetic Precipitation Leach | ___ 1312 | | |
| Total ___Dissolved __Suspended ___Solids | 160 ___.1 ___.2 ___.3 | | |
| Total Organic Halides | ___ 450.1 | ___ 9020B | |
| Turbidity | ___ 180.1 | | |
| Volatile Solids: | | | |
| __Total __Dissolved __Suspended | ___ 160.4 | | |
| **Other:** | | **Method:** | |

04

**Lionville Laboratory, Inc.**

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

## ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

05
03

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/09/01

CLIENT: TNUHANFORD C01-008 H1200

WORK ORDER: 10985-001-001-9999-00

LVL LOT #: 0101L727

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| -002 | B10LP1 | Bromide by IC | 1.2 u | MG/L | 1.2 | 5.0 |
| | | Chloride by IC | 30.6 | MG/L | 1.2 | 5.0 |
| | | Fluoride by IC | 1.0 u | MG/L | 1.0 | 2.0 |
| | | Nitrite by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Nitrate by IC | 54.6 | MG/L | 5.00 | 20.0 |
| | | Phosphate by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Sulfate by IC | 107 | MG/L | 5.0 | 20.0 |
| -004 | B10LN7 | Bromide by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Chloride by IC | 15.5 | MG/L | 0.50 | 2.0 |
| | | Fluoride by IC | 1.0 u | MG/L | 1.0 | 2.0 |
| | | Nitrite by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Nitrate by IC | 56.6 | MG/L | 5.00 | 20.0 |
| | | Phosphate by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Sulfate by IC | 111 | MG/L | 5.0 | 20.0 |
| -006 | B10LN5 | Bromide by IC | 1.2 u | MG/L | 1.2 | 5.0 |
| | | Chloride by IC | 24.6 | MG/L | 1.2 | 5.0 |
| | | Fluoride by IC | 1.0 u | MG/L | 1.0 | 2.0 |
| | | Nitrite by IC | 1.25 u | MG/L | 1.25 | 5.0 |
| | | Nitrate by IC | 67.5 | MG/L | 5.00 | 20.0 |
| | | Phosphate by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Sulfate by IC | 148 | MG/L | 5.0 | 20.0 |
| -008 | B10LL1 | Bromide by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Chloride by IC | 10.5 | MG/L | 0.50 | 2.0 |
| | | Fluoride by IC | 1.0 u | MG/L | 1.0 | 2.0 |
| | | Nitrite by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Nitrate by IC | 65.0 | MG/L | 5.00 | 20.0 |
| | | Phosphate by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Sulfate by IC | 101 | MG/L | 5.0 | 20.0 |

06
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2/6/01

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/09/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| -010 | B10LL3 | Bromide by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Chloride by IC | 10.5 | MG/L | 0.50 | 2.0 |
| | | Fluoride by IC | 1.0 u | MG/L | 1.0 | 2.0 |
| | | Nitrite by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Nitrate by IC | 64.7 | MG/L | 5.00 | 20.0 |
| | | Phosphate by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Sulfate by IC | 102 | MG/L | 5.0 | 20.0 |
| -012 | B10LK7 | Bromide by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Chloride by IC | 14.0 | MG/L | 0.50 | 2.0 |
| | | Fluoride by IC | 1.0 u | MG/L | 1.0 | 2.0 |
| | | Nitrite by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Nitrate by IC | 19.7 | MG/L | 2.50 | 10.0 |
| | | Phosphate by IC | 0.50 u | MG/L | 0.50 | 2.0 |
| | | Sulfate by IC | 79.8 | MG/L | 2.5 | 10.0 |

07
~~05~~

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/09/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | RESULT | UNITS | REPORTING LIMIT | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| BLANK10 | 01LIC004-MB1 | Bromide by IC | 0.25 u | MG/L | 0.25 | 1.0 |
| | | Chloride by IC | 0.25 u | MG/L | 0.25 | 1.0 |
| | | Fluoride by IC | 0.50 u | MG/L | 0.50 | 1.0 |
| | | Nitrite by IC | 0.25 u | MG/L | 0.25 | 1.0 |
| | | Nitrate by IC | 0.25 u | MG/L | 0.25 | 1.0 |
| | | Phosphate by IC | 0.25 u | MG/L | 0.25 | 1.0 |
| | | Sulfate by IC | 0.25 u | MG/L | 0.25 | 1.0 |

08
06

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 02/09/01

CLIENT: TNUHANFORD C01-008 H1200

LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | SPIKED SAMPLE | INITIAL RESULT | SPIKED AMOUNT | %RECOV | DILUTION FACTOR(SPK) |
|---|---|---|---|---|---|---|---|
| -012 | B10LK7 | Bromide by IC | 8.9 | 0.27 | 10.0 | 86.1 | 2.0 |
| | | Chloride by IC | 37.4 | 14.0 | 25.0 | 93.4 | 5.0 |
| | | Fluoride by IC | 20.1 | 0.18 | 20.0 | 99.8 | 2.0 |
| | | Nitrite by IC | 9.98 | 0.50u | 10.0 | 99.8 | 2.0 |
| | | Nitrate by IC | 45.2 | 19.7 | 25.0 | 102.0 | 5.0 |
| | | Phosphate by IC | 9.4 | 0.50u | 10.0 | 94.1 | 2.0 |
| | | Sulfate by IC | 183 | 79.8 | 100 | 102.9 | 20.0 |
| BLANK10 | 01LIC004-MB1 | Bromide by IC | 4.9 | 0.25u | 5.0 | 98.7 | 1.0 |
| | | Chloride by IC | 4.7 | 0.25u | 5.0 | 93.2 | 1.0 |
| | | Fluoride by IC | 10.5 | 0.50u | 10.0 | 105.3 | 1.0 |
| | | Nitrite by IC | 4.91 | 0.25u | 5.00 | 98.3 | 1.0 |
| | | Nitrate by IC | 4.75 | 0.25u | 5.00 | 95.0 | 1.0 |
| | | Phosphate by IC | 4.9 | 0.25u | 5.0 | 97.5 | 1.0 |
| | | Sulfate by IC | 4.8 | 0.25u | 5.0 | 96.9 | 1.0 |

09
02/2001

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 02/09/01

CLIENT: TNUHANFORD C01-008 H1200 LVL LOT #: 0101L727

WORK ORDER: 10985-001-001-9999-00

| SAMPLE | SITE ID | ANALYTE | INITIAL RESULT | REPLICATE | RPD | DILUTION FACTOR(REP) |
|---|---|---|---|---|---|---|
| -012REP | B10LK7 | Bromide by IC | 0.50u | 0.50u | NC | 2.0 |
| | | Chloride by IC | 14.0 | 13.8 | 1.3 | 2.0 |
| | | Fluoride by IC | 1.0 u | 1.0 u | NC | 2.0 |
| | | Nitrite by IC | 0.50u | 0.50u | NC | 2.0 |
| | | Nitrate by IC | 19.7 | 19.5 | 0.87 | 10.0 |
| | | Phosphate by IC | 0.50u | 0.50u | NC | 2.0 |
| | | Sulfate by IC | 79.8 | 80.3 | 0.57 | 10.0 |

10
08
2/12

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RECRA LabNet Use Only

01012727

# Custody Transfer Record/Lab Work Request

Page 1 of 3

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

(9) Met Dig Perrone

RECRA LabNet

Client: TNU-HANFORD SAF C01-008

Est. Final Proj. Sampling Date:

Project #: 10985-001-001-9999-00

Project Contact/Phone #:

RECRA Project Manager: Q1

QC: Spec  Del: Std  TAT: 30 day

Date Rec'd: 1-10-01  Date Due: 2-9-01

Account #:

| | | A | B |
|---|---|---|---|
| Refrigerator # | | 6 | 6 |
| #/Type Container | Liquid | 1PL | 1PL |
| | Solid | | |
| Volume | Liquid | 500 | 500 |
| | Solid | | |
| Preservatives | | HNO3 | 1 |

ANALYSES REQUESTED: ORGANIC (VOA, BNA, Pest/PCB, Herb); INORG (Metal, CN, Anions)

RECRA LabNet Use Only

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | Met (1) | IC (1) |
|---|---|---|---|---|---|---|---|---|
| 001 | B10LPO | | | W | 1-2-01 | 0921 | 1 | |
| 002 | P1 | | | | | ⊥ | 1 | 1 |
| 003 | N6 | | | | | 1201 | 1 | |
| 004 | NT | | | | | ⊥ | 1 | 1 |
| 005 | N4 | | | | | 1244 | 1 | |
| 006 | N5 | | | | | ⊥ | 1 | 1 |
| 007 | L0 | | | | | 1106 | 1 | |
| 008 | L1 | | | | | ⊥ | 1 | 1 |
| 009 | L2 | | | | | 1106 | 1 | |
| 010 | L3 | | | ⊥ | ⊥ | ⊥ | 1 | 1 |

Special Instructions: SAF C01-008

Run Matrix QC

DATE/REVISIONS:

Met (1) 1. Al, Ag, Ba, Be, Ca, Cd, Cr, Cu, Co, Fe, K-,

⊥ 2. Mg, Mn, Ni, Na, Sb, Sr, V-, Zn

IC (1) 3. Br, Cl, F, $NO_2$, $NO_3$, $PO_4$, $SO_4$

1-12-01 4. F013-026 rerlogged to 01012761

5.

6.

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # Fed Ex; 2) Ambient or Chilled; 3) Received in Good Condition Y or N; 4) Labels Indicate Properly Preserved Y or N; 5) Received Within Holding Times Y or N (3 samples)

COC Tape was: 1) Present on Outer Package Y or N; 2) Unbroken on Outer Package Y or N; 3) Present on Sample Y or N; 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 4.1 °C 13.0

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| Fed Ex | V. Henry | 1-10-01 | 0940 |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| COMPOSITE WASTE | ORIGINAL REVIRITTEN | | |

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 8214 8983 1864

| RECRA LabNet Use Only |
|---|
| 0101L727 |

# Custody Transfer Record/Lab Work Request

Page 2 of 3

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

RECRA LabNet

13

Client TNU-HANFORD SAF. C01-008

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

Date Rec'd Date Due

Account #

| | | A | B |
|---|---|---|---|
| Refrigerator # | | 6 | 6 |
| #/Type Container | Liquid | 1PL | 1PL |
| | Solid | | |
| Volume | Liquid | 500 | 500 |
| | Solid | | |
| Preservatives | | HNO3 | |

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; Pb-210

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | A | B |
|---|---|---|---|---|---|---|---|---|
| 011 | B10LK6 | | | W | 1-2-01 | 1208 | 1 | 1 |
| 012 | K7 | | | | 1 | 1 | 1 | 1 |
| 013 | C2 TK 1-12-01 | | | | 1-4-01 | 1040 | 1 | |
| 014 | C3 TK 1-12-01 | | | | 1 | 1 | 1 | 1 |
| 015 | F6 TK 1-12-01 | | | | 1-3-01 | 1207 | 1 | |
| 016 | F7 TK 1-12-01 | | | | 1 | 1 | 1 | 1 |
| 017 | K8 TK 1-12-01 | | | | 1 | 1117 | 1 | |
| 018 | K9 TK 1-12-01 | | | | 1 | 1 | 1 | 1 |
| 019 | P2 TK 1-12-01 | | | | 1-4-01 | 0948 | 1 | |
| 020 | P3 TK 1-12-01 | | | | 1 | 1 | 1 | 1 |

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| Fed Ex | [signature] | 1-10-01 | 0940 |
| | | | |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |
| | | | |

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

**RECRA LabNet Use Only**

Samples were:
1) Shipped ____ or Hand Delivered
Airbill # FE
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. _____ °C

| RECRA LabNet Use Only |
|---|
| 0101C727 |

# Custody Transfer Record/Lab Work Request

Page 3 of 3

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

RECRA LabNet

14

Client: TMI-HANFORD SAF- C01-008

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

Date Rec'd: Date Due:

Account #:

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Refrigerator # | | | | | | | | | | | | | A | | B | | | | | | | |
| #/Type Container | Liquid | | | | | | | | | | | | 6 | | 6 | | | | | | | |
| | Solid | | | | | | | | | | | | 1PL | | 1PL | | | | | | | |
| Volume | Liquid | | | | | | | | | | | | 500 | | 500 | | | | | | | |
| | Solid | | | | | | | | | | | | | | | | | | | | | |
| Preservatives | | | | | | | | | | | | | HNO3 | | 1 HNO3 | | | | | | | |
| ANALYSES REQUESTED | | | | ORGANIC | | | | | | | | | INORG | | | | | | | | | |
| | | | | VOA | BNA | Pest/PCB | Herb | | | | | | Metal | CN | | | | | | | | |
| | | | | RECRA LabNet Use Only | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 1 Hg | | 1 ICI | | | | | | | |

MATRIX CODES:
- S - Soil
- SE - Sediment
- SO - Solid
- SL - Sludge
- W - Water
- O - Oil
- A - Air
- DS - Drum Solids
- DL - Drum Liquids
- L - EP/TCLP Leachate
- WI - Wipe
- X - Other
- F - Fish

| Lab ID | Client ID/Description | | Matrix QC Chosen (✓) MS | MSD | Matrix | Date Collected | Time Collected | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 021 | BIOLP4 | TK1-12-C1 | | | W | 1-4-01 | 0913 | | | | | | | | 1 | | 1 | | | | | |
| 022 | P5 | TK1-12-C1 | | | | | 1 | | | | | | | | 1 | | 1 | | | | | |
| 023 | V0 | TK1-12-C1 | | | | | 1442 | | | | | | | | 1 | | | | | | | |
| 024 | V1 | TK1-12-C1 | | | | | 1 | | | | | | | | 1 | | 1 | | | | | |
| 025 | M0 | TK1-12-C1 | | | | | 1247 | | | | | | | | 1 | | | | | | | |
| 026 | M1 | TK1-12-C1 | | | | | 1 | | | | | | | | 1 | | 1 | | | | | |

Special Instructions:

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| Fed Ex | [illegible] | 1-10-01 | 0940 |

| Relinquished by | Received by | Date | Time |
|---|---|---|---|
| | | | |
| | | | |

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

**RECRA LabNet Use Only**

Samples were:
1) Shipped or Hand Delivered

Airbill #

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Labels Indicate Properly Preserved Y or N

5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. _____ °C

0101L121 ULLMCO IM 1-1-01

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# C01-008-14

Page 1 of 1 15

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-SAWS-H36 | Ice Chest No.: ~~SML-214~~ SML176 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 42357954 1578 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP0 (F) | | W | 1-2-01 | 0921 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1200 1-03-01 | | Fed Ex | | 01-03-0 |
| FED EXP12088 | | | 10:00 AM 01-04-01 | | E. SEGURO | E. Segura | 10:00 AM 01-04-01 |
| Fed Ex | | | 1-10-01 0940 | | | Vicki Kennedy | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-18



16

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WAA-SAWS-H36 | Ice Chest No.: SML540 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1507 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LN6 (F) | | W | 1/2/01 | 1201 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LN7 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LN7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LN7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LN7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1-03-01 1200 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 01-04-01 10:00 AM | E. SEGURO | | | 01-04-01 10:00 AM |
| Fed Ex | | | 1-10-01 0940 | Neil Hernandez | | | 1-10-01 0940 |
| | | | | | | | |

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 |
|---|---|---|---|
| | | | |

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-20



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX: |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER 2000 | Logbook No.: WAA-SAW-1438 | Ice Chest No.: ER40 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235795541529 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LN4 (F) | | W | 1/2/01 | 1244 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LN5 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LN5 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LN5 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LN5 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| D. R. BREWINGTON D.R. Brewington | 1200 1-03-01 | Fed Ex | 01-03-01 |
| FED-EXPRESS | 10:00 01-04-01 | E-Figuro ESEGURO | 10:00 01-04-01 |
| Fed Ex 1-10-01 | 0940 | Vicki Hernandez 1-10-01 | 0940 |
| | | | |

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

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-22

Page 1 of 1 00

| | | |
|---|---|---|
| Collector D. R. BREWINGTON | Contact/Requester JH KESSNER | Telephone No. (509) 375-4688 MSIN FAX |
| SAF No. C01-008 | Sampling Origin HANFORD SITE | Purchase Order/Charge Code |
| Project Title 100HR3 JAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No. WM-SAWS-H38 | Ice Chest No. SML176 Temp. |
| Shipped To (Lab) TMA/RECRA | Method of Shipment GOVT VEHICLE | Bill of Lading/Air Bill No. 4235795541518 |
| Protocol CERCLA | Data Turnaround 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| 7 B10LL0 (F) | | W | 1/2/01 | 1106 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 8 B10LL1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 8 B10LL1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LL1 | | W | | | (1)x20-mL P | Activity Scan | None |
| B10LL1 | | W | | | (2)x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LL1 | | W | | | (2)x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LL1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1-03-01 1200 | Fed Ex | | | 01-03-01 |
| FED-EXPRESS | | | 01-04-01 10 Am | B. Segura | | E. SEGURO | 01-04-01 10 Am |
| Fed Ex | | | 1-10-01 0940 | Vick Hernandez | | | 1-10-01 0940 |
| 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

PNNL

SDG: H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-23



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-1438 | Ice Chest No.: SMLI76 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1518 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| 7 B10LL2 (F) | | W | 1/2/01 | 1106 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW FOR RECRA | HNO3 to pH <2 |
| 10 B10LL3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW FOR RECRA | HNO3 to pH <2 |
| 10 B10LL3 | | W | | | 1x500-mL P | IC Anions - 300.0 FOR RECRA | Cool 4C |
| B10LL3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LL3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LL3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LL3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1200 1-03-01 | Fed Ex | | | 01-03-01 |
| Fed EXPRESS | | | 01-04-01 10:00 | E. Seguro | | E. SEGURO | 01-04-01 10:00 |
| Fed Ex | | | 1-10-01 0940 | [illegible] | | [illegible] | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

SDG : H1200

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-26



| | | |
|---|---|---|
| Collector: D. E. PARCHEN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 JAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-5AWS-439 | Ice Chest No.: ER40 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1529 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| 1 B10LK6 (F) | | W | 1-2-01 | 1208 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 2 B10LK7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 2 B10LK7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LK7 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LK7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LK7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LK7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. E. PARCHEN | | | 1-03-01 1200 | FED EX | | | 01-03-01 |
| FED EXPRESS | | | 01-04-01 10:[illegible] | E. Segura | | E. SEGURA | 01-04-01 10:[illegible] |
| Fed Ex | | | 1-10-01 0940 | [illegible] | | | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-40

Page 1 of 1 21

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WMI-SUFWS-1139 | Ice Chest No.: SUL 465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 42357954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| | Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|---|
| 13 | B10LC2 (F) | | W | 1-4-01 | 1040 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 14 | B10LC3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 14 | B10LC3 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| | B10LC3 | | W | | | 1x20-mL P | Activity Scan | None |
| | B10LC3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| | B10LC3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| | B10LC3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| J. G. HOGAN | | J. Hogan | JAN 04 2001 1250 | Fed Ex | | | 01-04-01 |
| PED. EXPRESS | | | 01-05-01 10:[illegible] | F. SEGURO | | | 01-05-01 10:[illegible] |
| Fed Ex | | | 1-10-01 0940 | [illegible] Hernandez | | | 1-10-01 0940 |
| 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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-34



| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H30 | Ice Chest No.: SML-002 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1573 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| | Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|---|
| 15 | B10LJ6 (F) | | W | 1/3/01 | 1207 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 16 | B10LJ7 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 16 | B10LJ7 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| | B10LJ7 | | W | | | 1x20-mL P | Activity Scan | None |
| | B10LJ7 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| | B10LJ7 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| | B10LJ7 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. R. BREWINGTON | | D.R. Brewington | 1/4/01 1375 | FED EX | | | 01-04-01 |
| FED. EXPRESS | | | 01-05-01 10 am | E. SOGURO | | | 01-05-01 10 am |
| Fed Ex | | | 1-10-01 0940 | Ted Kennedy | | | 1-10-01 0940 |
| | | | | | | | |

Matrix *

| | | | |
|---|---|---|---|
| S = Soil | | DS = Drum Solid | |
| SE = Sediment | | DL = Drum Liqui | |
| SD = 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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-24

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. R. BREWINGTON | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-H38 | Ice Chest No.: 3ML-002 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1573 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| 17 B10LK8 (F) | | W | 1/3/01 | 1117 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 18 B10LK9 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 18 B10LK9 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LK9 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LK9 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LK9 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LK9 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. R. BREWINGTON | D.R. Brewington | 1/4/01 1325 | FED EX | | | 01-04-01 |
| FED. EXPRESS | | | 01-05-01 10 AM | E. SEGURO | | | 01-05-01 |
| Fed Ex | | | 1-10-01 0940 | | | | 1-10-01 0940 |
| | | | | | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-12

Page 1 of 1

| | | |
|---|---|---|
| Collector: D. E. PARCHEN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WM-3AWS - H38 | Ice Chest No.: SML-48 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1551 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LP2 (F) | | W | 1/4/01 | 0948 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LP3 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LP3 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LP3 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LP3 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| D. E. PARCHEN | 1330 | | JAN 04 2001 | Fed Ex | | | 01-04-01 |
| FED. EXPRESS | | | 01-05-01 10:AM | E. SEGURO | | | 01-05-01 10:AM |
| Fed Ex | 1-10-01 | | 0940 | | 1-10-01 | | 0940 |
| 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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-10

Page 1 of 10 2

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No.: WM-SAWS-439 | Ice Chest No.: SMLL465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| | Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|---|
| 21 | B10LP4 (F) | | W | 1-4-01 | 0913 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 22 | B10LP5 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| 22 | B10LP5 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| | B10LP5 | | W | | | 1x20-mL P | Activity Scan | None |
| | B10LP5 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| | B10LP5 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| | B10LP5 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print) | Sign | Date/Time | Received By (Print) | Sign | Date/Time |
|---|---|---|---|---|---|
| J. G. HOGAN | J Hogan | JAN 04 2001 1230 | Fed Ex | | 01-04-01 |
| FED. EXPRESS | | 01-05-01 10:4 | E. SEGURO | | 01-05-01 10:4 |
| Fed Ex 1-10-01 | | 0940 | Vicki Hernandez | | 1-10-01 0940 |
| | | | | | |

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 |
|---|---|---|---|
| | | | |

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-46

Page 1 of 1

| | | |
|---|---|---|
| Collector: J. G. HOGAN | Contact/Requester: JH KESSNER | Telephone No.: (509) 375-4688 MSIN FAX |
| SAF No.: C01-008 | Sampling Origin: HANFORD SITE | Purchase Order/Charge Code |
| Project Title: 100HR3 IAM (1&2) GW MONITORING, NOVEMBER, 2000 | Logbook No.: WRI-SAMS-139 | Ice Chest No.: SML 465 Temp. |
| Shipped To (Lab): TMA/RECRA | Method of Shipment: GOVT. VEHICLE | Bill of Lading/Air Bill No.: 4235 7954 1562 |
| Protocol: CERCLA | Data Turnaround: 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
" "

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LV0 (F) | | W | 1-4-01 | 1142 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LV1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LV1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LV1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LV1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By (Print / Sign) | Date/Time | Received By (Print / Sign) | Date/Time |
|---|---|---|---|
| J. G. HOGAN / J. Hogan | JAN 04 2001 12:30 | FED EX | 01-04-01 |
| FED. EXPRESS | 01-05-01 10:AM | E. Segura | 01-05-01 10:AM |
| Fed Ex | 1-10-01 0940 | Vicki Hennings | 1-10-01 0940 |
| | | | |

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

PNNL

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # C01-008-150

Page 1 of 1

| | | |
|---|---|---|
| Collector D. E. PARCHEN | Contact/Requester JH KESSNER | Telephone No. (509) 375-4688 MSIN FAX |
| SAF No. C01-008 | Sampling Origin HANFORD SITE | Purchase Order/Charge Code |
| Project Title 100HR3 JAM (1&2) GW MONITORING NOVEMBER 2000 | Logbook No. WM-SAWS-H38 | Ice Chest No. SMC-48 Temp. |
| Shipped To (Lab) TMA/RECRA | Method of Shipment GOVT. VEHICLE | Bill of Lading/Air Bill No. 4235 7954 1551 |
| Protocol CERCLA | Data Turnaround 45 Days | Offsite Property No. |

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
Fax TMA log-in to JH Kessner (372-9487) & DL Stewart (372-1704).

| Sample No. | Lab ID | * | Date | Time | No/Type Container | Sample Analysis | Preservative |
|---|---|---|---|---|---|---|---|
| B10LM0 (F) | | W | 1/4/01 | 1247 | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x500-mL G/P | ICP Metals - 6010A RCRA GW | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x500-mL P | IC Anions - 300.0 | Cool 4C |
| B10LM1 | | W | | | 1x20-mL P | Activity Scan | None |
| B10LM1 | | W | | | 2x1000-mL G/P | Gross Alpha | HNO3 to pH <2 |
| B10LM1 | | W | | | 2x1000-mL G/P | Gross Beta | HNO3 to pH <2 |
| B10LM1 | | W | | | 1x250-mL P | Tritium - H3 | None |

| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time |
|---|---|---|---|---|---|---|---|
| | D. E. PARCHEN | | 330 JAN 04 2001 | Fed Ex | | | 01-04-01 |
| Fed Ex | EXPRESS | | 01-05-01 10:AM | E. SEGURO | | | 01-05-01 10:AM |
| Fed Ex | 1-10-01 | | 0940 | Vicki Hernandez | | | 1-10-01 0940 |
| 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

SDG H1200

PAGE 1 Thermo NUtech CHAIN OF CUSTODY ORD # R1-01-007

01/09/01 12:54:58 WORK ID: SAF C01-008 SDG H1200

RCVD: 01/04/01 DUE: 02/18/01 KEEP: 02/18/02 DISP: S

| DASH | SAMPLE IDENTIFICATION | STORED | TESTS | | |
|---|---|---|---|---|---|
| 01A-W | B10LP0 (F) | RECRA | DISPOS | E011 | |
| 02A-W | B10LP1 | RECRA | DISPOS | E011 | E260 |
| 02B-W | B10LP1 MS | RECRA | E011 | E260 | |
| 02C-W | B10LP1 DUP | RECRA | E011 | E260 | |
| 03A-W | B10LN6 (F) | RECRA | DISPOS | E011 | |
| 04A-W | B10LN7 | RECRA | DISPOS | E011 | E260 |
| 05A-W | B10LN4 (F) | RECRA | DISPOS | E011 | |
| 06A-W | B10LN5 | RECRA | DISPOS | E011 | E260 |
| 07A-W | B10LL0 (F) | RECRA | DISPOS | E011 | |
| 08A-W | B10LL1 | RECRA | DISPOS | E011 | E260 |
| 09A-W | B10LL2 (F) | RECRA | DISPOS | E011 | |
| 10A-W | B10LL3 | RECRA | DISPOS | E011 | E260 |
| 11A-W | B10LK6 (F) | RECRA | DISPOS | E011 | |
| 12A-W | B10LK7 | RECRA | DISPOS | E011 | E260 |

| RELEASED BY | DATE | TRANSFERRED TO | DATE | RECEIVED BY | DATE |
|---|---|---|---|---|---|
| E. Segura | 01-09-01 | FEDERAL EXPRESS | 09-01-09 | | |
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SDG H1205

PAGE 1 Thermo NUtech CHAIN OF CUSTODY ORD # R1-01-019

01/09/01 12:54:49 WORK ID: SAF C01-008 SDG H1205

RCVD: 01/05/01 DUE: 02/19/01 KEEP: 02/19/02 DISP: S

| DASH | SAMPLE IDENTIFICATION | STORED | TESTS | | |
|---|---|---|---|---|---|
| 01A-W | B10LC2 (F) | RECRA | DISPOS | E011 | |
| 02A-W | B10LC3 | RECRA | DISPOS | E011 | E260 |
| 02B-W | B10LC3 MS | RECRA | E011 | E260 | |
| 02C-W | B10LC3 DUP | RECRA | E011 | E260 | |
| 03A-W | B10LJ6 (F) | RECRA | DISPOS | E011 | |
| 04A-W | B10LJ7 | RECRA | DISPOS | E011 | E260 |
| 05A-W | B10LK8 (F) | RECRA | DISPOS | E011 | |
| 06A-W | B10LK9 | RECRA | DISPOS | E011 | E260 |
| 07A-W | B10LM0 (F) | RECRA | DISPOS | E011 | |
| 08A-W | B10LM1 | RECRA | DISPOS | E011 | E260 |
| 09A-W | B10LP2 (F) | RECRA | DISPOS | E011 | |
| 10A-W | B10LP3 | RECRA | DISPOS | E011 | E260 |
| 11A-W | B10LP4 (F) | RECRA | DISPOS | E011 | |
| 12A-W | B10LP5 | RECRA | DISPOS | E011 | E260 |
| 13A-W | B10LV0 (F) | RECRA | DISPOS | E011 | |
| 14A-W | B10LV1 | RECRA | DISPOS | E011 | E260 |

| RELEASED BY | DATE | TRANSFERRED TO | DATE | RECEIVED BY | DATE |
|---|---|---|---|---|---|
| E. Pegues | 01-09-01 | FEDERAL EXPRESS | 01-09-01 | | |
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