W02935-QES

Quanterra
Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

# CASE NARRATIVE

0052758

JAN 2000

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

December 30, 1999

Attention: Joan Kessner

| | |
|---|---|
| Project Number | : 550.267 |
| SDG | : W02935 |
| Number of Samples | : Four (4) |
| Sample Matrix | : Soil |
| Data Deliverable | : Summary |
| Date SDG Closed | : November 04, 1999 |

RECEIVED
MAR 20 2000
EDMC

## II. Introduction

Between October 21, 1999 and November 02, 1999, four (4) "soil" samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received within temperature criteria with the exception of sample B0WMM4 (22514-001) which was received at a temperature of 1°C. The sample was not frozen. Upon receipt, the samples were given Laboratory IDs to correspond with specific Client IDs. Please refer to the sample table attached to this case narrative.

## III. Analytical Results/ Methodology

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

Analyses requested:

ICP Metals - 6010 (Supertrace) {AS,BA,CD,CR,PB,SE,AG}
ICP Metals - 6010 (Supertrace add-on){BE,CU,NI,V,ZN}
Mercury - 7471-(CV)
Chromium Hex - 7196
VOA - 8260 (TCL)
VOA-8260 (add-on){1-Propanol, Ethanol}
pH (Soil) - 9045
NO2/NO3 - 353.1
IC Anions - 300.0 {CL,FL,NO3,NO2,PHOS,SO4}
Sulfides - 9030
Ammonia - 350.1
Total Cyanide - 9010
Semi-VOA-8270 (TCL)
TPH-Diesel Range - WTPH-D
PCBs - 8082

Quanterra

Bechtel Hanford Incorporated
December 30, 1999
Project Number: 550.267
SDG: W02935

---

Deviation from Request: The add-on compounds for the Volatile analysis (1-Propanol and Ethanol) can not be seen on the GC/MS as a TIC due to the fact that the major ions for these compounds are below the scan range of the instrument. No results for these compounds are reported.

IV. Definitions

A listing of the abbreviations and data qualifiers used with the laboratory data is attached to this case narrative.

V. Comments

**General**

The following SAFs are associated with this SDG:

| SAF Number | St. Louis ID |
|---|---|
| B99-078 | 22449 |
| B99-078 | 22456 |
| B99-078 | 22502 |
| B99-078 | 22514 |

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

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

**Metals**

Lead results for samples PBS210724, LCSS210724, B0WMM2, B0WMM2MS, B0WMM2MSD, and B0WMM6 were reported from the first sample analysis (11/17/99 @ 01:26 ). The CCB (3.3 UG/L) was outside the acceptable control limits. However, the reported sample results were significantly higher than the CCB result or below the IDL. The results were confirmed by a second sample analysis (11/17/99 @ 11:56) that is not included in the report..

The Nickel MS and serial dilution results were not within the QC limits. The data was flagged.

**Wet Chemistry**

The Hexavalent Chromium data for samples B0WMM8 and B0WMM4 were analyzed in a run that had high recovery of the CCV (120%) and the LCS (125%). The data is reported because the samples had no target compounds detected. See NCM 6093.

**Volatiles**

The batch QC for the analysis of B0WMM4 consisted of a LCS and LCS duplicate instead of a MS and MSD.

Quanterra

Bechtel Hanford Incorporated
December 30, 1999
Project Number: 550.267
SDG: W02935

---

**PCB**

The RPD for the MS and MSD was not within the QC limits. The percent recoveries were acceptable for all compounds in the LCS, MS and MSD.

**Semivolatile**

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

**TPH**

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

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

Reviewed and approved:

Marti Ward

Marti Ward
St. Louis Project Manager

LOG #: 6093

# LABORATORY NONCONFORMANCE MEMO (NCM)

*Quanterra Incorporated*

Project ID/Client: 550.267 / HANFORD

NCM Initiated by/Date: Tibbess / 12-17-99 Project Manager: M. Ward

Sample Numbers/QC batch or lot numbers: 22502-001, 22514-001, 22518-001, F9L070147

Tests: CR6 / 7196 / Q4

**Analytical Area (check appropriate area):**

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☒ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☐ Data review
- ☐ Radiochemistry
- ☐ _____

**Nonconformance (check appropriate area):** *To be completed by analyst*

***Holding Time Violations (exceeded by _____ days)***

*Category I: Laboratory Independent*

- ☐ 1. Holding time expired in transit
- ☐ 2. Sample rec'd > 48 hrs after sampling. or ½ holding time has expired
- ☐ 3. Test added by client after expiration

*Category II: Laboratory Dependent*

- ☐ 4. Instrument failure
- ☐ 5. Analyst error
- ☐ 6. Log-in error
- ☐ 7. Miscommunication
- ☐ 8. Other (explanation required)_____

*Category III: Analysis Reruns (QA/QC)*

- ☐ 9. Surrogates
- ☐ 10. Internal standards
- ☐ 11. Spike recoveries
- ☐ 12. Blank contamination

*Category IV: Analysis Reruns (Confirmation)*

- ☐ 13. Second column
- ☐ 14. Contamination check
- ☐ 15. Confirmation of matrix effects
- ☐ 16. Other (explanation required)_____

*Category V: Analysis Reruns (Dilution)*

- ☐ 17. Over calibration
- ☐ 18. Under calibration
- ☐ 19. Other (explanation required)_____

***Quality Assurance/Quality Control***

- ☒ 20. QC data reported outside of controls
- ☐ 21. Incorrect procedure used
- ☐ 22. SOP intentionally modified with QA and tech approval
- ☐ 23. Invalid instrument calibration
- ☐ 24. Received insufficient sample for proper analysis

***Incorrect or Incomplete Client Deliverable***

- ☐ 25. Hardcopy deliverable error
- ☐ 26. Electronic deliverable error

***Reported Detection Limits Elevated Due to:***

- ☐ 27. Sample matrix: Does not include high analyte content
- ☐ 28. Insufficient sample volume
- ☐ 29. Other (explanation required)

***Miscellaneous***

- ☐ 30. Instrument/equipment Tag-out
- ☐ 31. Other (explanation required)

**Notification (check appropriate area):** ☒ **Required** ☐ **Not Required** *To be completed by project manager*

Client notified by (name and date): MWard 12/30/99

- ☒ In writing narrative
- ☐ By facsimile
- ☐ By telephone
- ☐ Other (explain)

Client's name and response: _____

- ☐ Process "as is"
- ☐ Re-sample
- ☐ On hold until _____
- ☐ Other (explain)

Project manager (signature and date): MWard 12/30/99



000003B

QUANTERRA LABORATORY NONCONFORMANCE MEMO

LOG #: 6093

**Corrective Action:** *To be completed and reviewed by all associates involved*

***Problem Description/Root Cause*** Author's initials and date: TLK 12-17-99

CCVs at 120% Foutside QC limits of +/- 15%

LCS at 125% Foutside QC limits of +/- 20%

***Corrective Actions (Short Term)*** Author's initials and date: TLK 12-17-99

Talked to Supervisor and decided to report data on the basis that sample concentrations are non-detect. and based on QC data, data biased high.

***Corrective Actions to Prevent Reoccurrence (Long Term)***

Watch instrument for possible drifting from baseline. ~~TLK~~ TLK 12-17-99
TLK 12-17-99

Corrective Action approved by (Supervisor/Group Leader) and date: [illegible] 12/20/99

***Additional Comments:***

Corrective Action to be completed by (if other than Supervisor/Group Leader):

Date Corrective Action is to be completed:

**Quality Assurance Review** *To be completed by a QA associate*

☐ Anomaly ☒ Deficiency ☐ Notified Ops/Sys Manager (Initials)

☐ Further action required:

Further action assigned to:

QA signature: [illegible] Date: 12-30-99

**Corrective Action Verification:** *To be completed by a QA associate*

☐ Verification not required or requested

☐ Verified / CA completed on: by

☐ Cannot verify (specify reason)

Verified by: Date:

**Nonconformance Memo Closure:**

QA signature: Date:

*The Office of Quality Assurance maintains a copy of this NCM indicating its final status.*



000004

Quanterra

| Quanterra ID | Client ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 22449-001 | B0WMM2 | Solid | 20-Oct-99 | 21-Oct-99 |
| 22449-001DUP | B0WMM2 | Solid | 20-Oct-99 | 21-Oct-99 |
| 22449-001MS | B0WMM2 | Solid | 20-Oct-99 | 21-Oct-99 |
| 22449-001MSD | B0WMM2 | Solid | 20-Oct-99 | 21-Oct-99 |
| 22456-001 | B0WMM6 | Solid | 21-Oct-99 | 22-Oct-99 |
| 22502-001 | B0WMM8 | Solid | 27-Oct-99 | 28-Oct-99 |
| 22514-001 | B0WMM4 | Solid | 28-Oct-99 | 2-Nov-99 |

Please note that although the certificate of analysis lists Detection Limit, this is actually the laboratory reporting limit. This is not a method detection limit (MDL).

**Abbreviations and Data Qualifiers**

| | |
|---|---|
| NC | No criteria at this time |
| NA | Not applicable |
| ND | Non - detect |
| PCI/L | Picocuries per liter |
| PCI/G | Picocuries per gram |
| MG/L | Milligrams per liter |
| UG/L | Micrograms per liter |
| MG/KG | Milligrams per kilogram |
| UG/G | Micrograms per gram |
| %REC | Percent Recovery |
| QCBLK | Method Blank |
| QCEXTBLK | TCLP Extraction Blank |
| QCLCS | Laboratory Control Sample |
| CRDL | Customer Required Detection Limit |
| RPD | Relative Percent Difference |
| * | Value outside of the established QC limits |
| DL | PQL |
| J | Estimated Value (Organics only) |
| D | Diluted |
| U | Non - Detect |
| B | Value greater than IDL but less than CRDL (Metals only) |
| B | Analyte found in the blank (Organics only) |
| E | Exceeds calibration |
| E | FOUND IN FULL CLP TYPE DATA PACKAGE METALS ONLY: Serial dilution result for samples with concentrations greater than 50 times the IDL are not within 10% of the original sample result. |
| N | FOUND IN FULL CLP TYPE DATA PACKAGE METALS ONLY: Matrix Spike or matrix spike duplicate is outside expected recovery limits. |
| IDL | Instrument detection limit |
| MDL | Method detection limit |
| MDA | Minimal detectable activity |

Quanterra

## *Quanterra St. Louis*

### Sample Preparation Methods

***"Quanterra Standard" Preparation Method Used Unless Otherwise Noted***

| **Organic Preparation Methods** | **Matrix** | **Analysis** | **SW846 Reference** |
|---|---|---|---|
| Separatory Funnel Liquid-Liquid ***(Quanterra Standard)*** | Liquid | Pesticides, PCBs, Semivolatiles, TPH (Diesel Range Organics), Herbicides, TCLP (Semivolatiles, Pesticides, Herbicides), Phenols, PAHs, | 3510C |
| Continuous Liquid-Liquid | Liquid | Pesticides, Semivolatiles | 3520C |
| Ultrasonic ***(Quanterra Standard)*** | Solid | Pesticides, PCBs, Semivolatiles, Herbicides, PAHs | 3550B |
| Pressurized Fluid Extraction | Solid | Pesticides, PCBs, Semivolatiles, PAHs | 3545 |
| Waste Dilution ***(Quanterra Standard)*** | Solvent/Oil | Pesticides, PCBs, Semivolatiles, TPH, Herbicides, TCLP (Semivolatiles, Pesticides, Herbicides) | 3580A |
| Purge and Trap ***(Quanterra Standard)*** | All | Volatiles, Gasoline Range Organics | 5030B |
| Toxicity Characteristic Leaching Procedure ***(Quanterra Standard)*** | All | Pesticides, Semivolatiles, Herbicides, Volatiles, Metals | 1311 |
| **Inorganic Preparation Methods** | **Matrix** | **Analysis** | **SW846 Reference** |
| Acid Digestion ***(Quanterra Standard)*** | Liquid | ICP or FLAA Metals | 3010A |
| Acid Digestion – Total Recoverable | Liquid | ICP or FLAA Metals | 3005A |
| Acid Digestion ***(Quanterra Standard)*** | Liquid | GFAA Metals | 3020A |
| Acid Digestion ***(Quanterra Standard)*** | Solid | ICP, FLAA, or GFAA Metals | 3050B |

000004B

W02935
added OPHS

Quanterra November 03, 1999 03:39 pm
Account: 10722 Project: 550.267 Quanterra-Richland QAS No. 550.267 Rev. 0
Master Sample Login: 22449

oject Manager: M. Ward

SMW

Reviewed by and Date: Sheila Lowmi

mple Header Template:

| mple No. / Comments / Container Type | Client ID | C-Matrix | Date: Collected | Received | Due | Shipper | Rad Category | Rad Sample No. |
|---|---|---|---|---|---|---|---|---|
| 149-001 | B0WMM2 | Soil | 20-OCT-99 09:07 | 21-OCT-99 09:00 | 19-NOV-99 | FED X' | 3* | R9402-001 |
| B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.//ICAP=SEE SAF FOR LIST | | | | | | | | |

| # | Container Type | Analysis | Class | Preservative | Anal. Due Date | Hold Date | Site | (Container Numbers:% Filled) |
|---|---|---|---|---|---|---|---|---|
| 1 | AN - Amber Glass-500ml | BNA/8270C/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | | CL/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | CN/9010/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467812:100) |
| 1 | | FL/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | NH3/350.1/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | NO2/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | NO3/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | NO3/353.1/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | PCB/8082/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | | S/9030/Q4 | S | COLD | 12-NOV-99 | 27-OCT-99 | R15C | (467812:100) |
| 1 | | SO4/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | TPH/8015/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 12-NOV-99 | 21-OCT-99 | R15C | (467809:100) |
| 1 | | HG/7471/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467809:100) |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 12-NOV-99 | 17-APR-00 | R15C | (467809:100) |
| 1 | | PH/9045/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467811:98) |
| 1 | | PM/IT/Q4 | S | COLD | 12-NOV-99 | 17-APR-00 | R15C | (467809:100) |
| 1 | | RAD/CSCREEN/Q4 | S | COLD | 12-NOV-99 | 18-APR-00 | V9 | (467810:99) |
| 1 | | VOA/8260/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | V9 | (467810:99) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 49-001DUP | B0WMM2 | Soil | 20-OCT-99 09:07 | 21-OCT-99 09:00 | 19-NOV-99 | FED X' | 3* | R9402-001 |
| B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.IACP=SEE SAF FOR LIST | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | AN - Amber Glass-500ml | CL/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | CN/9010/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467812:100) |
| 1 | | FL/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | NH3/350.1/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | NO2/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | NO3/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | NO3/353.1/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | S/9030/Q4 | S | COLD | 12-NOV-99 | 27-OCT-99 | R15C | (467812:100) |
| 1 | | SO4/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 12-NOV-99 | 21-OCT-99 | R15C | (467811:98) |
| 1 | | PH/9045/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467811:98) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 49-001MS | B0WMM2 | Soil | 20-OCT-99 09:07 | 21-OCT-99 09:00 | 19-NOV-99 | FED X' | 3* | R9402-001 |
| B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.// ICAP=SEE SAF FOR LIST | | | | | | | | |

Sample has not been rad screened.

000005

Quanterra November 03, 1999 03:39 pm
Account: 10722 Project: 550.267 Quanterra-Richland QAS No. 550.267 Rev. 0
Master Sample Login: 22449

oject Manager: M. Ward

Reviewed by and Date: _____

ple Header Template: _____

| ple No. | Client ID | C-Matrix | Date: Collected | Received | Due | Shipper | Rad Category | Rad Sample No. |
|---|---|---|---|---|---|---|---|---|
| Comments | | | | | | | | |

| ! | Container Type | Analysis | Class | Preservative | Anal. Due Date | Hold Date | Site | (Container Numbers:% Filled) |
|---|---|---|---|---|---|---|---|---|
| a: | | | | | | | | |
| 1 | AN - Amber Glass-500ml | BNA/8270C/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | | CL/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | CN/9010/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467812:100) |
| 1 | | FL/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | NH3/350.1/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | NO2/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | NO3/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | NO3/353.1/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R15C | (467812:100) |
| 1 | | PCB/8082/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | | S/9030/Q4 | S | COLD | 12-NOV-99 | 27-OCT-99 | R15C | (467812:100) |
| 1 | | SO4/300.0/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | TPH/8015/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 12-NOV-99 | 21-OCT-99 | R15C | (467809:100) |
| 1 | | HG/7471/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467809:100) |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 12-NOV-99 | 17-APR-00 | R15C | (467809:100) |
| 1 | | VOA/8260/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | V9 | (467810:99) |

49-001MSD B0WMM2 Soil 20-OCT-99 09:07 21-OCT-99 09:00 19-NOV-99 FED X' 3* R9402-001
B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.//ICAP=SEE SAF FOR LIST

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | AN - Amber Glass-500ml | BNA/8270C/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | | HG/7471/Q4 | S | COLD | 12-NOV-99 | 17-NOV-99 | R15C | (467812:100) |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 12-NOV-99 | 17-APR-00 | R15C | (467812:100) |
| 1 | | PCB/8082/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | | TPH/8015/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | R15C | (467813:99) |
| 1 | AN - Amber Glass-60ML | VOA/8260/Q4 | S | COLD | 12-NOV-99 | 03-NOV-99 | V9 | (467810:99) |

000006

ample has not been rad screened.

**Bechtel Hanford Inc.** | 102935 | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | **B99-078-141** | Page 1 of 1

| | | | |
|---|---|---|---|
| **Collector** Bowers/Trice | **Company Contact** Chris Cearlock | **Telephone No.** 372-9574 | **Project Coordinator** TRENT, SJ |
| **Price Code** 8N | **Data Turnaround** 45 Days | | |
| **Project Designation** 200 Area Source characterization - 200-CW-1 OU | **Sampling Location** 200 B pond | | **SAF No.** B99-078 |
| **Ice Chest No.** ERC-99-022 | **Field Logbook No.** EL-1511 | | **Method of Shipment** FED EX and Gov Vehicle |
| **Shipped To** Quanterra Incorporated -St Louis | **Offsite Property No.** 000002 | | **Bill of Lading/Air Bill No.** 42357953 0911 |
| | | | **COA** B20CW1671C |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

**Special Handling and/or Storage**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Preservation** | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | |
| **Type of Container** | aG | aG | aG | aG | aG | aG | aG | | | |
| **No. of Container(s)** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| **Volume** | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | |
| **SAMPLE ANALYSIS** | See item (1) in Special Instructions ICP metal | VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol) | Isotopic Uranium | pH (Soil) - 9045 | See item (2) in Special Instructions | Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082 | See item (3) in Special Instructions | | | |

| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~BOWMM4~~ BOWMM2 | Soil | 10/20/99 | 0907 | x | X | | X | X | X | | | BOW8C2 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

PM 152

**CHAIN OF POSSESSION** — **Sign/Print Names**

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Catherine Slice | 10/20/99 1230 | Ref 3A | 10/20/99 1230 |
| Ref 3A | 10/21/99 0900 | R Thoren/Rikki Thoren | 10-21-99 0900 |
| R Thoren/Rikki Thoren | 10-21-99 1430 | FEDEX | |
| Fed EX | 10-22-99 10-25-99 | Linda C Carlock | 10-22-99 850A |

**SPECIAL INSTRUCTIONS**

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010
(3) Gamma Spectroscopy (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Strontium-89,90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241

**Matrix ***
Soil
Water
Vapor
Other Solid
Other Liquid

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

# ERC Radiological Counting Facility Analysis Report

W029135

RCF Number RCF6593

Sample Date & Time 10/6/99 0840

Project ID: 200CW-1 SAF Number: B99-078 Date Analyzed 10/6/99 14:12

Sample ID: B0W8C2

Gamma Energy Analysis

| Nuclide | Activity (pCi/g) | Error (pCi/g) | MDA (pCi/g) |
|---|---|---|---|
| Not Requested | | | |

BOWMM2

| Total GEA (pCi/g) | N/A | +/- | N/A |
|---|---|---|---|

COPY

| | Activity (pCi/g) | | Error (pCi/g) |
|---|---|---|---|
| Gross Alpha** | 2.1E+01 | +/- | 3.8E+00 |
| Gross Beta | 3.5E+02 | +/- | 1.2E+01 |

| Alpha MDA (pCi/g) |
|---|
| 8.2E+00 |
| **Beta MDA (pCi/g)** |
| 1.9E+02 |

**Definitions:**

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested.
<MDA = Less than detection limit

For soils and natural samples, the following applies:

**The gross alpha results are not corrected for mass absorbtion

FIELD SAMPLE COPY

Analysist T. J. Snider 10/6/99

Report To Dave St. John

Fax 372-9487

Report Printed: Wednesday, October 06, 1999

Quanterra
Environmental Services

020010

Login No.: 22449
IN02935

# Condition Upon Receipt Variance Report
## St. Louis Laboratory

Client: Bechtel Hanford Inc.
Project No: 550.267
Shipper/No: Fed Ex 4235 7953 911

Date: 10-22-99 Time: 8:50 A
Initiated by: Linda A. Custodis
RFA/COC Numbers: B99-078-141
~~B99-018-25~~ JRS 10-25-9

**Condition/Variance (Check all that apply):**

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

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

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: _____

**Corrective Action:**

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

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

☐ Sample(s) processed "as is". Comments: _____

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

Sample Control Supervisor Review: (or designate) [signature] Date: 10/22/99

Project Management Review: Jennifer Smith Date: 10-25-99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 6/29/99

added 8/05

W02935

Quanterra November 03, 1999 03:34 pm
Account: 10722 Project: 550.267 Quanterra-Richland QAS No. 550 267 Rev. 0
Master Sample Login: 22456

Project Manager: M. Ward

Reviewed by and Date Sheila Lawrence 11-3-99

Sample Header Template:

| Sample No. / # | Client ID / Container Type | C-Matrix / Analysis | Date: Collected / Class | Received / Preservative | Due / Anal. Due Date | Shipper / Hold Date | Site | Rad Category / (Container Numbers:% Filled) | Rad Sample No. |
|---|---|---|---|---|---|---|---|---|---|
| 22456-001 | B0WMM6 | Soil | 21-OCT-99 10:12 | 22-OCT-99 11:00 | 19-NOV-99 | FED-EX | | 3* | R9397-001 |
| Comments / Data: | SAF B99-078//ICAP= See SAF for List//VOA= Report 8260 List + 1-propanol & ethanol | | | | | | | | |
| 1 | GN - Glass Jar-500ML | BNA/8270C/Q4 | S | COLD | 12-NOV-99 | 04-NOV-99 | R4F | (467995:98) | |
| 1 | | CL/300.0/Q4 | S | COLD | 12-NOV-99 | 18-NOV-99 | R4F | (467994:99) | |
| 1 | | CN/9010/Q4 | S | COLD | 12-NOV-99 | 04-NOV-99 | R4F | (467994:99) | |
| 1 | | FL/300.0/Q4 | S | COLD | 12-NOV-99 | 18-NOV-99 | R4F | (467994:99) | |
| 1 | | NH3/350.1/Q4 | S | COLD | 12-NOV-99 | 18-NOV-99 | R4F | (467994:99) | |
| 1 | | NO2/300.0/Q4 | S | COLD | 12-NOV-99 | 23-OCT-99 | R4F | (467994:99) | |
| 1 | | NO3/300.0/Q4 | S | COLD | 12-NOV-99 | 23-OCT-99 | R4F | (467994:99) | |
| 1 | | NO3/353.1/Q4 | S | COLD | 12-NOV-99 | 18-NOV-99 | R4F | (467994:99) | |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 12-NOV-99 | 23-OCT-99 | R4F | (467994:99) | |
| 1 | | PCB/8082/Q4 | S | COLD | 12-NOV-99 | 04-NOV-99 | R4F | (467995:98) | |
| 1 | | PM/IT/Q4 | S | COLD | 12-NOV-99 | 18-APR-00 | R4F | (467994:99) | |
| 1 | | RAD/CSCREEN/Q4 | S | COLD | 12-NOV-99 | 19-APR-00 | R4F | (467994:99) | |
| 1 | | S/9030/Q4 | S | COLD | 12-NOV-99 | 28-OCT-99 | R4F | (467994:99) | |
| 1 | | SO4/300.0/Q4 | S | COLD | 12-NOV-99 | 18-NOV-99 | R4F | (467994:99) | |
| 1 | | TPH/8015/Q4 | S | COLD | 12-NOV-99 | 04-NOV-99 | R4F | (467995:98) | |
| 1 | GN - Glass Jar-60ML | CR6/7196/Q4 | S | COLD | 12-NOV-99 | 22-OCT-99 | R4F | (467996:99) | |
| 1 | | HG/7471/Q4 | S | COLD | 12-NOV-99 | 18-NOV-99 | R4F | (467996:99) | |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 12-NOV-99 | 18-APR-00 | R4F | (467996:99) | |
| 1 | | PH/9045/Q4 | S | COLD | 12-NOV-99 | 04-NOV-99 | R4F | (468001:98) | |
| 1 | | VOA/8260/Q4 | S | COLD | 12-NOV-99 | 04-NOV-99 | V9 | (467997:97) | |

000010

*=Sample has not been rad screened.

| Bechtel Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | B99-078-142 | Page 1 of 1 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Collector: Bowers/Trice | Company Contact: Chris Cearlock | Telephone No.: 372-9574 | Project Coordinator: TRENT, SJ |
| Price Code: 8N | Data Turnaround: 45 Days | | |
| Project Designation: 200 Area Source characterization - 200-CW-1 OU | Sampling Location: 200 B pond | SAF No.: B99-078 | |
| Ice Chest No.: SML 455 ~~ERC-99-002~~ 10/22/99 | Field Logbook No.: EL-1511 | Method of Shipment: FED EX and Gov Vehicle | |
| Shipped To: Quanterra Incorporated St Louis | Offsite Property No.: NA | Bill of Lading/Air Bill No.: NA | |
| | | COA: B20CW1 671C | |

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation | | | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | |
| Type of Container | | | aG | aG | aG | aG | aG | aG | aG | | | |
| No. of Container(s) | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Volume | | | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | |
| SAMPLE ANALYSIS | | | See item (1) in Special Instructions | VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol} | Isotopic Uranium | pH (Soil) - 9045 | See item (2) in Special Instructions | Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D; PCBs - 8082 | See item (3) in Special Instructions | | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | |
| B0WMM6 | Soil | 10-21-99 | 1012 | X | X | | X | X | X | all full | 100% | Bowers |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

2pm
ok

| CHAIN OF POSSESSION | Sign/Print Names | | |
|---|---|---|---|
| Relinquished By: Doug Bowers | Date/Time: 10-21-99/1400 | Received By: R of 3C | Date/Time: 10-21-99/1400 |
| Relinquished By: R of 3C | Date/Time: 10.22.99 1100 | Received By: R. Fahlberg / R. Fahlberg | Date/Time: 1100 10-22-99 |
| Relinquished By: R. Fahlberg / R. Fahlberg | Date/Time: 1330 10-22-99 | Received By: Fed Ex | Date/Time: |
| Relinquished By: Fed Ex | Date/Time: 10-23-99 JKS 10-25-99 | Received By: [illegible] | Date/Time: 10-23-99 845 |

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010
(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

~~From non-rad area~~ DTD 10-21-99

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Quanterra®

# Radioactive Package Monitoring and Receipt

**(For DOT Compliance)**

What radioactive labels are present on or in the package? (Circle)

Exempt - Complete Section A
Radioactive White I - Complete Section B
Radioactive Yellow II - Complete Section B
Radioactive Yellow III - Complete Section B

Client/Originator Waste Mgmt. Hanford Carrier Fed X

Document/Shipping Number 8146 1372 4159

Date/Time Received 10.23.99 845

**Section A**

Is package damaged (crushed, dented, wet, punctured, or stained)?

Yes - Complete Section B
No - Complete Section C

**Section B**

B.1 Using the dose rate, record the highest dose rate at contact with the surface of the package.

_____ μR/hr

If this measurement exceeds;
500 μR/hr for an exempt package; or
500 μR/hr for Radioactive White I; or
50 mR/hr for Radioactive Yellow II; or
200 m R/hr for Radioactive Yellow III,
contact the RSO (or designee) immediately.

B.2 Using a single 47 mm glass microfiber filter, wipe a 100 cm x 100 cm ( 4 in x 4 in) area on three sides of the package (total 300 $cm^2$). Place the wipe, exposed side facing upward into a petri dish. Using a Model 44-9 alpha-beta-gamma (α-β-γ) probe, determine the background countrate. The place the detector over the wipe and wait at least 2 minutes before recording the wipe countrate.

_____ wipe cpm - _____ background cpm = _____ net α/β/γ cpm

Is the net α/β/γ cpm less than 200 cpm? If yes, go to Section C. Is the net α/β/γ greater than 15,000 cpm? If yes, immediately **STOP** and contact RSO (or designee).

# ERC Radiological Counting Facility Analysis Report

**RCF Number** RCF6668 **Sample Date & Time** 10/21/99 1012

**Project ID:** 200-CW-1 **SAF Number:** B99-078 **Date Analyzed** 10/21/99 2:40:

**Sample ID:** B0W9T9

**Gamma Energy Analysis**

| Nuclide | | Activity (pCi/g) | | Error (pCi/g) | MDC (pCi/g) |
|---|---|---|---|---|---|
| K-40 | < | 1.8E+02 | | | 1.8E+02 |
| Co-60 | < | 1.6E+01 | | | 1.6E+01 |
| Cs-137 | | 6.8E+02 | +/- | 4.4E+01 | 2.2E+01 |
| Eu-152 | < | 6.0E+01 | | | 6.0E+01 |
| Eu-154 | | 2.5E+01 | +/- | 1.6E+01 | 6.7E+00 |
| Eu-155 | < | 9.5E+01 | | | 9.5E+01 |
| Th-232D | < | 6.3E+01 | | | 6.3E+01 |
| U-235 | < | 1.9E+02 | | | 1.9E+02 |
| U-238D | | 5.7E+01 | +/- | 3.3E+01 | 2.8E+01 |
| U-238 | < | 2.9E+03 | | | 2.9E+03 |
| Am-241 | < | 6.3E+01 | | | 6.3E+01 |

B0W MM6
~~B0WMD1~~
~~B0WMD2~~

| Total GEA (pCi/g) | 7.6E+02 | +/- | 9.3E+01 |
|---|---|---|---|

| | Activity (pCi/g) | | Error (pCi/g) |
|---|---|---|---|
| Gross Alpha** | 1.2E+03 | +/- | 1.7E+02 |
| Gross Beta | 1.8E+04 | +/- | 5.5E+02 |

| Alpha MDC (pCi/g) |
|---|
| 4.4E+02 |
| **Beta MDC (pCi/g)** |
| 9.8E+03 |

**Definitions:**

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

**For soils and natural samples, the following applies:**

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
# No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst T. J. Snider 10/22/99

Report To Dave St. John

Fax 372-9487

Report Printed: Friday, October 22, 1999

# RADIOACTIVE SHIPMENT RECORD

106623 3.

Page 1 of 2

**1. SHIP FROM** U.S. DEPT. OF ENERGY C/O
Company BECHTEL HANFORD INC.
Address 3728 BLDG. 300 AREA
City, State, Zip RICHLAND, WA. 99352
Contact JEFF GALE
Phone 509-372-9281

Ship [X] Prepaid [ ] Collect 4.

Via [ ] Motor [X] Air Psgr [ ] UPS [ ] Rail [X] Air Cargo [ ] Site Carrier

SHIPMENT AUTHORIZATION NUMBER

**2. SHIP TO**
Company QUANTERRA INC.
Address 13715 RIDER TRAIL NORTH
City, State, Zip EARTH CITY, MO. 63045
Attention MARTY CAHILL
Phone 314-298-8566

**Markings Applied** 6.
- Radioactive - LSA [ ]
- Radioactive - SCO [ ]
- Type A [ ] N/A
- Type B with trefoil [ ]

**LSA Description** 8.
- LSA-I [ ]
- LSA-II [ ]
- LSA-III [ ]
- SCO-I [ ] N/A
- SCO-II [ ]

**Labels Applied** 10.
- Empty [ ]
- Radioactive White - I [ ]
- Radioactive Yellow - II [ ]
- Radioactive Yellow - III [ ]
- Subsidiary Hazard [ ] N/A

For Normal Form only 7.
Identify
Physical Form [ ] Liquid [ ] Gas [X] Solid
Chemical Form [X] Elemental [ ] Metal [ ] Nitrate [ ] Oxide [ ] Mixture [ ] Other

**EMERGENCY RESPONSE** 9.
Telephone 1-888-766-0771
Emergency Response Guide(s) 161

Highway Route Controlled Quantity [ ]
Exclusive Use Shipment with instructions [ ]
Placards Applied [ ]
If Rail Specify:
Fissile Excepted, Grams [ ]
Excepted Package Statement [X]

**5. HM** Proper Shipping Name: Radioactive Material,

| | | | |
|---|---|---|---|
| | excepted package - empty packaging | 7 | UN2910 |
| | excepted package - instruments or articles | 7 | UN2910 |
| X | excepted package - limited quantity of material | 7 | UN2910 |
| | excepted package - articles manufactured from natural or depleted uranium or natural thorium | 7 | UN2910 |
| | Special Form, n.o.s. | 7 | UN2974 |
| | Low Specific Activity, n.o.s. | 7 | UN2912 |
| | n.o.s. | 7 | UN2982 |
| | Fissile, n.o.s. | 7 | UN2918 |
| | Surface Contaminated Object | 7 | UN2913 |

Warning -- Fissile Material Controlled Shipment. Do Not Load More Than N/A Packages Per Vehicle. In Loading and Storage Areas, Keep at Least 20 Feet From Other Packages Bearing Radioactive Labels.

**11.**

| No. Pkg. | Model Package | COC/Spec | Serial No. | Seal No. | Isotopes | T.I. | Bq/Package | Gr. Wt. Kg. |
|---|---|---|---|---|---|---|---|---|
| 1 | POLYCOOLER | STRONG-TIGHT | ~~ERC-AFS-2~~ | TAPE | Sr-90, Cs-137, | N/A | $1.39 \times 10^{-6}$ | ~~15 Kg~~ TDG |
| | | | SML 455 | | U-238D, Eu-154 | | | 19 Kg |
| GLASS SAMPLE JARS, BUBBLE WRAPPED, DOUBLE POLY BAGGED PACKED | | | | | | | | |
| IN WET ICE AND VERMICULITE TOTAL VOLUME 1180 ml / 2006 gm | | | | | | | | 19 kg |
| (Shipper may describe package in detail on one of the unused lines above) SAMPLE # DOWMM6 | | | | | TOTALS | N/A | $1.39 \times 10^{-6}$ | 15 Kg |

**12.** This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.
Certifier's Signature On behalf of DOE-RL: Stuart G. Zeb | Date 10-22-99 | Organization ERC-AFS | Complete Cost Code (Inc. End Function) B20CW1671C

**13.**
Surface Dose Rate of Package: [X] <0.005 or _____ mSv/hr; <0.5 or _____ mrem/hr (N+ß γ)
Dose Rate @ 1 Meter from Surface of Package: [X] <0.005 or _____ mSv/hr; <0.5 or _____ mrem/hr (N+ß γ)
Smears of Outer Container: [X] <0.41 Bq (22 dpm) ß γ /cm² [X] <0.04 Bq (2.2 dpm) α /cm² [X] <Tbl. 2-2 HSRCM Onsite Limits
TRUCK LOAD OR EXCLUSIVE USE: Surface [X] <2 mSv/hr (200 mrem/hr); @ 2 meters [X] <0.1 mSv/hr (10 mrem/hr); @ Cab or sleeper [X] <0.02 mSv/hr (2 mrem/hr) (Using N+ß γ)
Additional Data and Instructions (Inc. Readings on Internal Packaging)
Signature - Radiation Monitoring: Jon Mza | Bldg. 3728 | Survey No. EF4-99-1601 | Date 10-22-99

**14.** TRANSPORTER
Vehicle Number G42 76304 | DRIVER SIGNATURE R. Moran
RECEIVER
RECEIVER SIGNATURE | Date

**15.** OFFSITE AUTHORIZATION
Shipment has been inspected and verified to be in compliance with DOT regulations.
Authorized Signature | Printed Name Keith R. Smith | Date 10-22-99

**16.** AUTHORIZATION FOR SHIPMENT
AIR TRANSPORT CERTIFICATION: [ ] N/A
CARGO AIRCRAFT: [ ] Cargo Aircraft Only [ ] Labels Applied
PASSENGER AIRCRAFT: [ ] Ltd Qty [ ] <3 T.I. [ ] Research/Medical Diagnosis [ ] Human Medical Research
Pkg. Dimensions (cm)

**17.** OFFSITE AUTHORIZATION

| Tracking No. | Date Shipped | Routing | ETA |
|---|---|---|---|
| RM8H-3719 | 10-22-99 | FEDEX | 10-23-99 |
| Surveyed By | Date | Approved for Shipment Offsite | Date |
| | 10/22/99 | John T. McGrell MLB | 10-22-99 |



54-5000-088 (06/97)

Quanterra
Environmental Services

020022

Login No.: 22452

W02935

## Condition Upon Receipt Variance Report
## St. Louis Laboratory

Client: Waste Mgmt.
Date: 10-23-99
Time: 845
Project No: 550.267
Initiated by: Sue Mser
Shipper/No: Fed X 814613724159
RFA/COC Numbers: B99-070-142

**Condition/Variance (Check all that apply):**

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

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

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: _____

**Corrective Action:**

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

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

☐ Sample(s) processed "as is". Comments: _____

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

Sample Control Supervisor Review: (or designate) Sue Mser Date: 10-23-99

Project Management Review: Jennifer Smith Date: 10-25-99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 6/29/99

1102935

Quanterra November 02, 1999 10:04 am
Account: 10722 Project: 550.267 Quanterra-Richland QAS No. 550.267 Rev. 0
Master Sample Login: 22502

Project Manager: M. Ward

Reviewed by and Date: JSmith 11-2-99

Sample Header Template:

| Sample No. / # | Client ID / Container Type | C-Matrix / Analysis | Date: Collected / Class | Received / Preservative | Due / Anal. Due Date | Shipper / Hold Date | Site | Rad Category / (Container Numbers:% Filled) | Rad Sample No. |
|---|---|---|---|---|---|---|---|---|---|
| 22502-001 | B0WMM8 | Soil | 27-OCT-99 08:56 | 28-OCT-99 08:08 | 26-NOV-99 | FED X' | | 3* | R9433-001 |
| Comments: B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.//ICAP=SEE SAF FOR LIST | | | | | | | | | |
| 1 | AN - Amber Glass-500ml | BNA/8270C/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468956:99) | |
| 1 | | CL/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | CN/9010/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468955:100) | |
| 1 | | FL/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | NH3/350.1/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | NO2/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | NO3/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | NO3/353.1/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | PCB/8082/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468956:99) | |
| 1 | | S/9030/Q4 | S | COLD | 19-NOV-99 | 03-NOV-99 | R16B | (468955:100) | |
| 1 | | SO4/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | TPH/8015/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468956:99) | |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 19-NOV-99 | 28-OCT-99 | R16B | (468952:100) | |
| 1 | | HG/7471/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468952:100) | |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 19-NOV-99 | 24-APR-00 | R16B | (468952:100) | |
| 1 | | PH/9045/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468954:98) | |
| 1 | | PM/IT/Q4 | S | COLD | 19-NOV-99 | 24-APR-00 | R16B | (468952:100) | |
| 1 | | RAD/CSCREEN/Q4 | S | COLD | 19-NOV-99 | 25-APR-00 | V9 | (468953:99) | |
| 1 | | VOA/8260/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | V9 | (468953:99) | |
| 22502-001DUP | B0WMM8 | Soil | 27-OCT-99 08:56 | 28-OCT-99 08:08 | 26-NOV-99 | FED X' | | 3* | R9433-001 |
| B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.//ICAP=SEE SAF FOR LIST | | | | | | | | | |
| 1 | AN - Amber Glass-500ml | CL/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | CN/9010/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468955:100) | |
| 1 | | FL/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | NH3/350.1/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | NO2/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | NO3/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | NO3/353.1/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | S/9030/Q4 | S | COLD | 19-NOV-99 | 03-NOV-99 | R16B | (468955:100) | |
| 1 | | SO4/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 19-NOV-99 | 28-OCT-99 | R16B | (468952:100) | |
| 1 | | PH/9045/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468954:98) | |
| 22502-001MS | B0WMM8 | Soil | 27-OCT-99 08:56 | 28-OCT-99 08:08 | 26-NOV-99 | FED X' | | 3* | R9433-001 |
| B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.//ICAP=SEE SAF FOR LIST | | | | | | | | | |

3*=Sample has not been rad screened.

W02935

deleted EDC.

Quanterra November 03, 1999 03:41 pm
Account: 10722 Project: 550.267 Quanterra-Richland QAS No. 550.267 Rev. 0
Master Sample Login: 22502

:oject Manager: M. Ward

SMZ

Reviewed by and Date: Sheila Sommer

ample Header Template:

| ample No. / # | Client ID / Comments / Container Type | C-Matrix / Analysis | Date: Collected / Class | Received / Preservative | Due / Anal. Due Date | Shipper / Hold Date | Site | Rad Category / (Container Numbers:% Filled) | Rad Sample No. |
|---|---|---|---|---|---|---|---|---|---|
| ita: | | | | | | | | | |
| 2502-001 | B0WMM8 | Soil | 27-OCT-99 08:56 | 28-OCT-99 08:08 | 26-NOV-99 | FED X' | | 3* | R9433-001 |
| | B99-078 // VOA = TCL Plus 1 Propanol and Ethanol.//ICAP=SEE SAF FOR LIST | | | | | | | | |
| 1 | AN - Amber Glass-500ml | BNA/8270C/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468956:99) | |
| 1 | | CL/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | CN/9010/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468955:100) | |
| 1 | | FL/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | NH3/350.1/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | NO2/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | NO3/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | NO3/353.1/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | OPHOS/300.0/Q4 | S | COLD | 19-NOV-99 | 29-OCT-99 | R16B | (468955:100) | |
| 1 | | PCB/8082/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468956:99) | |
| 1 | | S/9030/Q4 | S | COLD | 19-NOV-99 | 03-NOV-99 | R16B | (468955:100) | |
| 1 | | SO4/300.0/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468955:100) | |
| 1 | | TPH/8015/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468956:99) | |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 19-NOV-99 | 28-OCT-99 | R16B | (468952:100) | |
| 1 | | HG/7471/Q4 | S | COLD | 19-NOV-99 | 24-NOV-99 | R16B | (468952:100) | |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 19-NOV-99 | 24-APR-00 | R16B | (468952:100) | |
| 1 | | PH/9045/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | R16B | (468954:98) | |
| 1 | | PM/IT/Q4 | S | COLD | 19-NOV-99 | 24-APR-00 | R16B | (468952:100) | |
| 1 | | RAD/CSCREEN/Q4 | S | COLD | 19-NOV-99 | 25-APR-00 | V9 | (468953:99) | |
| 1 | | VOA/8260/Q4 | S | COLD | 19-NOV-99 | 10-NOV-99 | V9 | (468953:99) | |

000017

*=Sample has not been rad screened.

WW6135

**Bechtel Hanford Inc.** | 17.1°C

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-143



| | | | |
|---|---|---|---|
| **Collector** Bowers/Trice | **Company Contact** Chris Cearlock | **Telephone No.** 372-9574 | **Project Coordinator** TRENT, SJ |
| **Price Code** 8N | **Data Turnaround** 45 Days | | |
| **Project Designation** 200 Area Source characterization - 200-CW-1 OU | **Sampling Location** 200 B pond | | **SAF No.** B99-078 |
| **Ice Chest No.** ERC 99 009 | **Field Logbook No.** EL-1511-1 | | **Method of Shipment** FED EX and Gov Vehicle |
| **Shipped To** Quanterra Incorporated S+L. | **Offsite Property No.** A000016 | | **Bill of Lading/Air Bill No.** 42357953 1149 |
| | | | **COA** B20CW167C |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

**Special Handling and/or Storage**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Preservation** | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | |
| **Type of Container** | aG | aG | aG | aG | aG | aG | aG | | | |
| **No. of Container(s)** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| **Volume** | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | |
| **SAMPLE ANALYSIS** | See item (1) in Special Instructions | VOA - 8260A (TCL), VOA - 8260A (Add-On) {1-Propanol, Ethanol} | Isotopic Uranium | pH (Soil) - 9045 | See item (2) in Special Instructions. | Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082 | See item (3) in Special Instructions. | | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | |
| B0WMM8 | Soil | 10-27-99 | 0856 | X | X | | X | X | X | | | Bowsc |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

PM 75

**CHAIN OF POSSESSION** — **Sign/Print Names**

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Doug Bowers | 10-27-99/1130 | Rof 3B | 10-27-99/1130 |
| Rof 3B | 10-28-99/0800 | Kikki Thoren R. Thoren | 10-28-99/0800 |
| R. Thoren | 10-28-99/1430 | FED EX | |
| Fed Ex | 10-29-99 11-1-99 JRS | [illegible] | 10-29-99 830 |

**SPECIAL INSTRUCTIONS**

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV), Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010

(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

**Matrix ***
Soil
Water
Vapor
Other Solid
Other Liquid

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

# ERC Radiological Counting Facility Analysis Report

W02935

RCF Number RCF6592

Sample Date & Time 10/5/99 0913

Project ID: 200-CW-1

SAF Number: B99-078

Date Analyzed 10/5/99 13:29

Sample ID: B0W8C1

Gamma Energy Analysis

| Nuclide | Activity (pCi/g) | Error (pCi/g) | MDA (pCi/g) |
|---|---|---|---|
| Not Requested | | | |
| Total GEA (pCi/g) | N/A | +/- | N/A |

Bowmm8

LABORATORY COPY

| | Activity (pCi/g) | | Error (pCi/g) |
|---|---|---|---|
| Gross Alpha** | 6.1E+00 | +/- | 1.3E+00 |
| Gross Beta | 8.5E+01 | +/- | 4.0E+00 |

| Alpha MDA (pCi/g) |
|---|
| 2.5E+00 |
| **Beta MDA (pCi/g)** |
| 4.7E+01 |

**Definitions:**

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested.
<MDA = Less than detection limit.

**For soils and natural samples, the following applies:**

**The gross alpha results are not corrected for mass absorbtion

Analysist T. J. Snider 10/5/99

Report To Dave St. John

Fax 372-9487

Report Printed: Tuesday, October 05, 1999

Quanterra
Environmental Services

020085
Login No.: 22502
W02935

# Condition Upon Receipt Variance Report
## St. Louis Laboratory

Client: Bechtel Hanford
Date: 10.29.99
Time: 830
Project No: 330.2607
Initiated by: Sue Moss
Shipper/No: Airborne
RFA/COC Numbers: B99-078-143

**Condition/Variance (Check all that apply):**

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

☐ **No variances were noted during sample receipt.** **Cooler Temperature Upon Receipt:** 6°

**Temperature Variance Does Not Affect the Following Analyses:** _____

Notes: _____

**Corrective Action:**

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

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

☐ Sample(s) processed "as is". Comments: _____

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

Sample Control Supervisor Review: (or designate) Sue Moss Date: 10.29.99

Project Management Review: Jennifer Smith Date: 11-1-99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 6/29/99

W02935

Quanterra November 04, 1999 10:50 am
Account: 10722 Project: 550.267 Quanterra-Richland QAS No. 550.267 Rev. 0
Master Sample Login: 22514

Project Manager: M. Ward

Reviewed by and Date: Sheila Laurie

Sample Header Template:

| Sample No. / # | Client ID / Comments / Container Type | C-Matrix / Analysis | Date: Collected / Class | Received / Preservative | Due / Anal. Due Date | Shipper / Hold Date | Site | Rad Category / (Container Numbers:% Filled) | Rad Sample No. |
|---|---|---|---|---|---|---|---|---|---|
| 22514-001 | B0WMM4 | Soil | 28-OCT-99 08:13 | 02-NOV-99 09:05 | 02-DEC-99 | FED X' | | 3* | R9436-001 |
| Data: | B99-078 // VOA = TCL Plus 1 Propanol and Ethanol. // ICAPT TAL = SEE SAF LIST | | | | | | | | |
| 1 | AN - Amber Glass-500ml | ANIONS/300.0/Q4 | P | COLD | N/A | N/A | R16C | (469212:100) | |
| 1 | | BNA/8270C/Q4 | S | COLD | 25-NOV-99 | 11-NOV-99 | R16C | (469213:99) | |
| 1 | | CL/300.0/Q4 | C | COLD | 25-NOV-99 | 25-NOV-99 | R16C | (469212:100) | |
| 1 | | CN/9010/Q4 | S | COLD | 25-NOV-99 | 11-NOV-99 | R16C | (469212:100) | |
| 1 | | FL/300.0/Q4 | C | COLD | 25-NOV-99 | 25-NOV-99 | R16C | (469212:100) | |
| 1 | | NH3/350.1/Q4 | S | COLD | 25-NOV-99 | 25-NOV-99 | R16C | (469212:100) | |
| 1 | | NO2/300.0/Q4 | C | COLD | 25-NOV-99 | 30-OCT-99 | R16C | (469212:100) | |
| 1 | | NO3/300.0/Q4 | C | COLD | 25-NOV-99 | 30-OCT-99 | R16C | (469212:100) | |
| 1 | | NO3/353.1/Q4 | S | COLD | 25-NOV-99 | 25-NOV-99 | R16C | (469212:100) | |
| 1 | | OPHOS/300.0/Q4 | C | COLD | 25-NOV-99 | 30-OCT-99 | R16C | (469212:100) | |
| 1 | | PCB/8082/Q4 | S | COLD | 25-NOV-99 | 11-NOV-99 | R16C | (469213:99) | |
| 1 | | S/9030/Q4 | S | COLD | 25-NOV-99 | 04-NOV-99 | R16C | (469212:100) | |
| 1 | | SO4/300.0/Q4 | C | COLD | 25-NOV-99 | 25-NOV-99 | R16C | (469212:100) | |
| 1 | | TPH/8015/Q4 | S | COLD | 25-NOV-99 | 11-NOV-99 | R16C | (469213:99) | |
| 1 | AN - Amber Glass-60ML | CR6/7196/Q4 | S | COLD | 25-NOV-99 | 29-OCT-99 | R16C | (469209:100) | |
| 1 | | HG/7471/Q4 | S | COLD | 25-NOV-99 | 25-NOV-99 | R16C | (469209:100) | |
| 1 | | ICAPT/6010A/Q4 | S | COLD | 25-NOV-99 | 25-APR-00 | R16C | (469209:100) | |
| 1 | | PH/9045/Q4 | S | COLD | 25-NOV-99 | 11-NOV-99 | R16C | (469211:98) | |
| 1 | | PM/IT/Q4 | S | COLD | 25-NOV-99 | 25-APR-00 | R16C | (469209:100) | |
| 1 | | RAD/CSCREEN/Q4 | S | COLD | 25-NOV-99 | 30-APR-00 | V9 | (469210:99) | |
| 1 | | VOA/8260/Q4 | S | COLD | 25-NOV-99 | 11-NOV-99 | V9 | (469210:99) | |

000021

3*=Sample has not been rad screened.

020100 (1°C)

**Bechtel Hanford Inc.**

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-141



| | | | |
|---|---|---|---|
| **Collector** Bowers/Trice | **Company Contact** Chris Cearlock | **Telephone No.** 372-9574 | **Project Coordinator** TRENT, SJ |
| **Price Code** 8N | **Data Turnaround** 45 Days | | |
| **Project Designation** 200 Area Source characterization - 200-CW-1 OU | **Sampling Location** 200 B pond | | **SAF No.** B99-078 |
| **Ice Chest No.** GRC96 0068 | **Field Logbook No.** EL-1511 – 1 | | **Method of Shipment** FED EX and Gov Vehicle |
| **Shipped To** Quanterra Incorporated STL | **Offsite Property No.** A0000019 | | **Bill of Lading/Air Bill No.** 42357953 1193 |
| | | | **COA** B20CW167IC |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

**Special Handling and/or Storage**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Preservation** | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | |
| **Type of Container** | aG | aG | aG | aG | aG | aG | aG | | | |
| **No. of Container(s)** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| **Volume** | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | |
| **SAMPLE ANALYSIS** | See item (1) in Special Instructions. ✓ | VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol} ✓ | Isotopic Uranium | pH (Soil) - 9045 ✓ | See item (2) in Special Instructions. ✓ | Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082 ✓ | See item (3) in Special Instructions. | | | |

W02935

| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM4 | Soil | 10-28-99 | 0813 ~~0815~~ RT 10-28-99 | X | X | | X | X | X | ← 100% full | Bowers | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**CHAIN OF POSSESSION** — **Sign/Print Names**

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| C. Trice Catherine Trice | 10/28/99 1430 | Rel 3B | 10/28/99 1430 |
| Rel 3B | 11.01.99/0800 | Rikki Thoren R. Thoren | 11.01.99/0800 |
| Rikki Thoren R. Thoren | 11.01.99/1430 | FEDEX | |
| | | | |

**SPECIAL INSTRUCTIONS**

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010
(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

**Matrix ***
Soil
Water
Vapor
Other Solid
Other Liquid

| | | | |
|---|---|---|---|
| **LABORATORY SECTION** | Received By Linda A Cantrell | Title 705 | Date/Time 11/2/99 |
| **FINAL SAMPLE DISPOSITION** | Disposal Method | Disposed By | Date/Time |

270099

# ERC Radiological Counting Facility Analysis Report

RCF Number RCF6592

Sample Date & Time 10/5/99 0913

Project ID: 200-CW-1

SAF Number: B99-078

Date Analyzed 10/5/99 13:29

Sample ID: B0W8C1

Gamma Energy Analysis

| Nuclide | Activity (pCi/g) | Error (pCi/g) | MDA (pCi/g) |
|---|---|---|---|
| Not Requested | | | |

Bowmm4

| Total GEA (pCi/g) | N/A | +/- | N/A |
|---|---|---|---|

LABORATORY COPY

| | Activity (pCi/g) | | Error (pCi/g) |
|---|---|---|---|
| Gross Alpha** | 6.1E+00 | +/- | 1.3E+00 |
| Gross Beta | 8.5E+01 | +/- | 4.0E+00 |

| Alpha MDA (pCi/g) |
|---|
| 2.3E+00 |
| **Beta MDA (pCi/g)** |
| 4.7E+01 |

*Definitions:*

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested.
<MDA = Less than detection limit.

For soils and natural samples, the following applies:

**The gross alpha results are not corrected for mass absorbtion

Analysist T. J. Snider 10/5/99

Report To Dave St. John

Fax 372-9487

Report Printed: Tuesday, October 05, 1999

000023

OCT 08 '99 03:18PM

Quanterra
Environmental Services

020100

Login No.: ~~22513~~ 22514 Sal 11/3/99
W02935

# Condition Upon Receipt Variance Report
## St. Louis Laboratory

Client: Bechtel Hanford
Date: 11/2/99 Time: 9:05 A
Project No: 550.267
Initiated by: Linda A Custodio
Shipper/No: FedX 423579531193
RFA/COC Numbers: B99-078-141

**Condition/Variance (Check all that apply):**

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

No JAC 11/2/99

☐ **No variances were noted during sample receipt.** **Cooler Temperature Upon Receipt:** 1°C

**Temperature Variance Does Not Affect the Following Analyses:**

Notes:

**Corrective Action:**

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

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

☐ Sample(s) processed "as is".

Comments:

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

Sample Control Supervisor Review: (or designee) Linda A Custodio Date: 11/2/99

Project Management Review: Sheila Fournier Date: 11/4/99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 6/29/99

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Volatiles
Method: SW846 8260A
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Client ID: B0WMM2

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 11 | UG/KG | U | 11 | 1 |
| Bromomethane | 74-83-9 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 11 | UG/KG | U | 11 | 1 |
| Vinyl Chloride | 75-01-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 11 | UG/KG | U | 11 | 1 |
| Chloroethane | 75-00-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 11 | UG/KG | U | 11 | 1 |
| Methylene Chloride | 75-09-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Acetone | 67-64-1 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 27 | UG/KG | | 22 | 1 |
| Carbon Disulfide | 75-15-0 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1-Dichloroethene | 75-35-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1-Dichloroethane | 75-34-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,2-Dichloroethene (total) | 540-59-0 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Chloroform | 67-66-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,2-Dichloroethane | 107-06-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 2-Butanone (MEK) | 78-93-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 11 | UG/KG | BJ | 22 | 1 |
| 1,1,1-Trichloroethane | 71-55-6 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Carbon Tetrachloride | 56-23-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Bromodichloromethane | 75-27-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,2-Dichloropropane | 78-87-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| cis-1,3-Dichloropropene | 10061-01-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Trichloroethene | 79-01-6 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Dibromochloromethane | 124-48-1 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1,2-Trichloroethane | 79-00-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Benzene | 71-43-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| trans-1,3-Dichloropropene | 10061-02-6 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Bromoform | 75-25-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 4-Methyl-2-Pentanone (MIBK) | 108-10-1 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 22 | UG/KG | U | 22 | 1 |
| 2-Hexanone | 591-78-6 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 22 | UG/KG | U | 22 | 1 |
| Tetrachloroethene | 127-18-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Toluene | 108-88-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Chlorobenzene | 108-90-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| EthylBenzene | 100-41-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Styrene | 100-42-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Xylene (total) | 1330-20-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 6 | UG/KG | U | 6 | 1 |
| Unknown | TIC-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 7 | UG/KG | J | | 1 |
| Bromofluorobenzene | 460-00-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 98 | %REC | | | 1 |
| Dibromofluoromethane | 1868-53-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 96 | %REC | | | 1 |
| Toluene-d8 | 2037-26-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 103 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Volatiles
Method: SW846 8260A
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MS

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 75-35-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 50 | %REC | | | 1 |
| Trichloroethene | 79-01-6 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 78 | %REC | | | 1 |
| Benzene | 71-43-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 83 | %REC | | | 1 |
| Toluene | 108-88-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 97 | %REC | | | 1 |
| Chlorobenzene | 108-90-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 96 | %REC | | | 1 |
| Bromofluorobenzene | 460-00-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 103 | %REC | | | 1 |
| Dibromofluoromethane | 1868-53-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 97 | %REC | | | 1 |
| Toluene-d8 | 2037-26-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 107 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Volatiles
Method: SW846 8260A
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Client ID: B0WMM2

Quanterra ID : 22449-001MSD

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 75-35-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 53 | %REC | | | 1 |
| Trichloroethene | 79-01-6 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 78 | %REC | | | 1 |
| Benzene | 71-43-2 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 82 | %REC | | | 1 |
| Toluene | 108-88-3 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 95 | %REC | | | 1 |
| Chlorobenzene | 108-90-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 95 | %REC | | | 1 |
| Bromofluorobenzene | 460-00-4 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 105 | %REC | | | 1 |
| Dibromofluoromethane | 1868-53-7 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 98 | %REC | | | 1 |
| Toluene-d8 | 2037-26-5 | QCBLK210008-1 | 10/26/99 | 10/26/99 | 105 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Volatiles
Method: SW846 8260A
Matrix: SOLID

Client ID: B0WMM6

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 11 | UG/KG | U | 11 | 1 |
| Bromomethane | 74-83-9 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 11 | UG/KG | U | 11 | 1 |
| Vinyl Chloride | 75-01-4 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 11 | UG/KG | U | 11 | 1 |
| Chloroethane | 75-00-3 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 11 | UG/KG | U | 11 | 1 |
| Methylene Chloride | 75-09-2 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Acetone | 67-64-1 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 17 | UG/KG | J | 21 | 1 |
| Carbon Disulfide | 75-15-0 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1-Dichloroethene | 75-35-4 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1-Dichloroethane | 75-34-3 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,2-Dichloroethene (total) | 540-59-0 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Chloroform | 67-66-3 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,2-Dichloroethane | 107-06-2 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 2-Butanone (MEK) | 78-93-3 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 21 | UG/KG | U | 21 | 1 |
| 1,1,1-Trichloroethane | 71-55-6 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Carbon Tetrachloride | 56-23-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Bromodichloromethane | 75-27-4 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,2-Dichloropropane | 78-87-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| cis-1,3-Dichloropropene | 10061-01-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Trichloroethene | 79-01-6 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Dibromochloromethane | 124-48-1 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1,2-Trichloroethane | 79-00-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Benzene | 71-43-2 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| trans-1,3-Dichloropropene | 10061-02-6 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Bromoform | 75-25-2 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 4-Methyl-2-Pentanone (MIBK) | 108-10-1 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 21 | UG/KG | U | 21 | 1 |
| 2-Hexanone | 591-78-6 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 21 | UG/KG | U | 21 | 1 |
| Tetrachloroethene | 127-18-4 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Toluene | 108-88-3 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Chlorobenzene | 108-90-7 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| EthylBenzene | 100-41-4 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Styrene | 100-42-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Xylene (total) | 1330-20-7 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 5 | UG/KG | U | 5 | 1 |
| Bromofluorobenzene | 460-00-4 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 112 | %REC | | | 1 |
| Dibromofluoromethane | 1868-53-7 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 125 | %REC | | | 1 |
| Toluene-d8 | 2037-26-5 | QCBLK210229-1 | 10/28/99 | 10/28/99 | 127 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Volatiles
Method: SW846 8260A
Matrix: SOLID

Client ID: B0WMM8

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 10 | UG/KG | U | 10 | 1 |
| Bromomethane | 74-83-9 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 10 | UG/KG | U | 10 | 1 |
| Vinyl Chloride | 75-01-4 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 10 | UG/KG | U | 10 | 1 |
| Chloroethane | 75-00-3 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 10 | UG/KG | U | 10 | 1 |
| Methylene Chloride | 75-09-2 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Acetone | 67-64-1 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 63 | UG/KG | B | 21 | 1 |
| Carbon Disulfide | 75-15-0 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1-Dichloroethene | 75-35-4 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1-Dichloroethane | 75-34-3 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,2-Dichloroethene (total) | 540-59-0 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Chloroform | 67-66-3 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,2-Dichloroethane | 107-06-2 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 2-Butanone (MEK) | 78-93-3 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 21 | UG/KG | U | 21 | 1 |
| 1,1,1-Trichloroethane | 71-55-6 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Carbon Tetrachloride | 56-23-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Bromodichloromethane | 75-27-4 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,2-Dichloropropane | 78-87-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| cis-1,3-Dichloropropene | 10061-01-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Trichloroethene | 79-01-6 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Dibromochloromethane | 124-48-1 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1,2-Trichloroethane | 79-00-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Benzene | 71-43-2 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| trans-1,3-Dichloropropene | 10061-02-6 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Bromoform | 75-25-2 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 4-Methyl-2-Pentanone (MIBK) | 108-10-1 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 21 | UG/KG | U | 21 | 1 |
| 2-Hexanone | 591-78-6 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 21 | UG/KG | U | 21 | 1 |
| Tetrachloroethene | 127-18-4 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Toluene | 108-88-3 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Chlorobenzene | 108-90-7 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| EthylBenzene | 100-41-4 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Styrene | 100-42-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Xylene (total) | 1330-20-7 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | U | 5 | 1 |
| Unknown-1 | TIC-32 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 16 | UG/KG | J | | 1 |
| Unknown-2 | TIC-33 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 5 | UG/KG | BJ | | 1 |
| Unknown-3 | TIC-34 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 19 | UG/KG | BJ | | 1 |
| Unknown Alkane | TIC-40 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 6 | UG/KG | J | | 1 |
| Bromofluorobenzene | 460-00-4 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 90 | %REC | | | 1 |
| Dibromofluoromethane | 1868-53-7 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 105 | %REC | | | 1 |
| Toluene-d8 | 2037-26-5 | QCBLK210613-1 | 11/03/99 | 11/03/99 | 111 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Volatiles
Method: SW846 8260A
Matrix: SOLID

Client ID: B0WMM4

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | 74-87-3 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 11 | UG/KG | U | 11 | 1 |
| Bromomethane | 74-83-9 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 11 | UG/KG | U | 11 | 1 |
| Vinyl Chloride | 75-01-4 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 11 | UG/KG | U | 11 | 1 |
| Chloroethane | 75-00-3 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 11 | UG/KG | U | 11 | 1 |
| Methylene Chloride | 75-09-2 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Acetone | 67-64-1 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 16 | UG/KG | BJ | 22 | 1 |
| Carbon Disulfide | 75-15-0 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1-Dichloroethene | 75-35-4 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1-Dichloroethane | 75-34-3 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,2-Dichloroethene (total) | 540-59-0 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Chloroform | 67-66-3 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,2-Dichloroethane | 107-06-2 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 2-Butanone (MEK) | 78-93-3 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 22 | UG/KG | U | 22 | 1 |
| 1,1,1-Trichloroethane | 71-55-6 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Carbon Tetrachloride | 56-23-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Bromodichloromethane | 75-27-4 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,2-Dichloropropane | 78-87-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| cis-1,3-Dichloropropene | 10061-01-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Trichloroethene | 79-01-6 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Dibromochloromethane | 124-48-1 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1,2-Trichloroethane | 79-00-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Benzene | 71-43-2 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| trans-1,3-Dichloropropene | 10061-02-6 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Bromoform | 75-25-2 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 4-Methyl-2-Pentanone (MIBK) | 108-10-1 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 22 | UG/KG | U | 22 | 1 |
| 2-Hexanone | 591-78-6 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 22 | UG/KG | U | 22 | 1 |
| Tetrachloroethene | 127-18-4 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Toluene | 108-88-3 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Chlorobenzene | 108-90-7 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| EthylBenzene | 100-41-4 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Styrene | 100-42-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Xylene (total) | 1330-20-7 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 6 | UG/KG | U | 6 | 1 |
| Bromofluorobenzene | 460-00-4 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 104 | %REC | | | 1 |
| Dibromofluoromethane | 1868-53-7 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 124 | %REC | | | 1 |
| Toluene-d8 | 2037-26-5 | QCBLK210699-1 | 11/04/99 | 11/04/99 | 120 | %REC | | | 1 |

Data is incomplete without Case Narrative

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BSMP9228

Level: (low/med) LOW Date Received: 10/21/99

% Moisture: not dec. 10 Date Analyzed: 10/26/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11 | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 67-64-1 | Acetone | 27 | |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 11 | JB |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Chlorodibromomethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-pentanone | 22 | U |
| 591-78-6 | 2-Hexanone | 22 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 108-88-3 | Toluene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylenes (total) | 6 | U |

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BSMP9228

Level: (low/med) LOW Date Received: 10/21/99

% Moisture: not dec. 10 Date Analyzed: 10/26/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 18.32 | 6.760 | J |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0163

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: not dec. 7 Date Analyzed: 10/28/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11 | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 17 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 21 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Chlorodibromomethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-pentanone | 21 | U |
| 591-78-6 | 2-Hexanone | 21 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0163

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: not dec. 7 Date Analyzed: 10/28/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0215

Level: (low/med) LOW Date Received: 10/28/99

% Moisture: not dec. 3 Date Analyzed: 11/03/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 63 | B |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 21 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Chlorodibromomethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-pentanone | 21 | U |
| 591-78-6 | 2-Hexanone | 21 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0215

Level: (low/med) LOW Date Received: 10/28/99

% Moisture: not dec. 3 Date Analyzed: 11/03/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.85 | 15.80 | J |
| 2. | UNKNOWN | 23.41 | 5.260 | JB |
| 3. | UNKNOWN | 24.37 | 18.82 | JB |
| 4. | UNKNOWN ALKANE | 25.19 | 5.923 | J |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0233

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 Date Analyzed: 11/04/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11 | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 67-64-1 | Acetone | 16 | JB |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 22 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Chlorodibromomethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-pentanone | 22 | U |
| 591-78-6 | 2-Hexanone | 22 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 108-88-3 | Toluene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylenes (total) | 6 | U |

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ESMP0233

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 Date Analyzed: 11/04/99

GC Column: RTX-502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 108-95-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| bis(2-Chloroethyl)Ether | 111-44-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2-Chlorophenol | 95-57-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 1,3-Dichlorobenzene | 541-73-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 1,4-Dichlorobenzene | 106-46-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 1,2-Dichlorobenzene | 95-50-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2-Methylphenol | 95-48-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2,2'-oxybis (1-Chloropropane) | 108-60-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| N-nitroso-di-n-propylamine | 621-64-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Methylphenol | 106-44-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Hexachloroethane | 67-72-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Nitrobenzene | 98-95-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Isophorone | 78-59-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2-Nitrophenol | 88-75-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2,4-Dimethylphenol | 105-67-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| bis(2-Chloroethoxy)Methane | 111-91-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2,4-Dichlorophenol | 120-83-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 1,2,4-Trichlorobenzene | 120-82-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Naphthalene | 91-20-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Chloroaniline | 106-47-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Hexachlorobutadiene | 87-68-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Chloro-3-Methylphenol | 59-50-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2-Methylnaphthalene | 91-57-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Hexachlorocyclopentadiene | 77-47-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| 2,4,6-Trichlorophenol | 88-06-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2,4,5-Trichlorophenol | 95-95-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2-Chloronaphthalene | 91-58-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2-Nitroaniline | 88-74-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Acenaphthylene | 208-96-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 2,6-Dinitrotoluene | 606-20-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 3-Nitroaniline | 99-09-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Acenaphthene | 83-32-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 56 | UG/KG | J | 370 | 1 |
| 2,4-Dinitrophenol | 51-28-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Dibenzofuran | 132-64-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Nitrophenol | 100-02-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| 2,4-Dinitrotoluene | 121-14-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Fluorene | 86-73-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 40 | UG/KG | J | 370 | 1 |
| DimethylPhthalate | 131-11-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Diethylphthalate | 84-66-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Chlorophenyl-PhenylEther | 7005-72-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Nitroaniline | 100-01-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| 4,6-Dinitro-2-Methylphenol | 534-52-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| n-Nitrosodiphenylamine | 86-30-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| 4-Bromophenyl-Phenyl Ether | 101-55-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Hexachlorobenzene | 118-74-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Pentachlorophenol | 87-86-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Phenanthrene | 85-01-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 610 | UG/KG | | 370 | 1 |
| Anthracene | 120-12-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 48 | UG/KG | J | 370 | 1 |
| Di-N-Butylphthalate | 84-74-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Fluoranthene | 206-44-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1300 | UG/KG | | 370 | 1 |
| Pyrene | 129-00-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1400 | UG/KG | | 370 | 1 |
| ButylBenzylPhthalate | 85-68-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Benzo(a)Anthracene | 56-55-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 560 | UG/KG | | 370 | 1 |
| 3,3'-Dichlorobenzidine | 91-94-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Chrysene | 218-01-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 790 | UG/KG | | 370 | 1 |
| bis(2-Ethylhexyl)Phthalate | 117-81-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| di-N-OctylPhthalate | 117-84-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Benzo(b)Fluoranthene | 205-99-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 470 | UG/KG | | 370 | 1 |
| Benzo(k)Fluoranthene | 207-08-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 620 | UG/KG | | 370 | 1 |
| Benzo(a)Pyrene | 50-32-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 660 | UG/KG | | 370 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Indeno(1,2,3-CD)Pyrene | 193-39-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | J | 370 | 1 |
| Dibenz(a,h)Anthracene | 53-70-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | U | 370 | 1 |
| Carbazole | 86-74-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 38 | UG/KG | J | 370 | 1 |
| Benzo(g,h,i)Perylene | 191-24-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 370 | UG/KG | | 370 | 1 |
| 2-Fluorophenol | 367-12-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 84 | %REC | | | 1 |
| Phenol-d5 | 4165-62-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 92 | %REC | | | 1 |
| Nitrobenzene-d5 | 4165-60-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 84 | %REC | | | 1 |
| 2-Fluorobiphenyl | 321-60-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 80 | %REC | | | 1 |
| 2,4,6-Tribromophenol | 118-79-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 92 | %REC | | | 1 |
| Terphenyl-d14 | 1718-51-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 76 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MS

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 108-95-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 77 | %REC | | | 1 |
| 2-Chlorophenol | 95-57-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 81 | %REC | | | 1 |
| 1,4-Dichlorobenzene | 106-46-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 79 | %REC | | | 1 |
| N-nitroso-di-n-propylamine | 621-64-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 90 | %REC | | | 1 |
| 1,2,4-Trichlorobenzene | 120-82-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 82 | %REC | | | 1 |
| 4-Chloro-3-Methylphenol | 59-50-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 81 | %REC | | | 1 |
| Acenaphthene | 83-32-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 85 | %REC | | | 1 |
| 4-Nitrophenol | 100-02-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 92 | %REC | | | 1 |
| 2,4-Dinitrotoluene | 121-14-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 96 | %REC | | | 1 |
| Pentachlorophenol | 87-86-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 79 | %REC | | | 1 |
| Pyrene | 129-00-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 40 | %REC | | | 1 |
| 2-Fluorophenol | 367-12-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 88 | %REC | | | 1 |
| Phenol-d5 | 4165-62-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 92 | %REC | | | 1 |
| Nitrobenzene-d5 | 4165-60-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 89 | %REC | | | 1 |
| 2-Fluorobiphenyl | 321-60-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 84 | %REC | | | 1 |
| 2,4,6-Tribromophenol | 118-79-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 90 | %REC | | | 1 |
| Terphenyl-d14 | 1718-51-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 78 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MSD

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 108-95-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 73 | %REC | | | 1 |
| 2-Chlorophenol | 95-57-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 76 | %REC | | | 1 |
| 1,4-Dichlorobenzene | 106-46-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 77 | %REC | | | 1 |
| N-nitroso-di-n-propylamine | 621-64-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 85 | %REC | | | 1 |
| 1,2,4-Trichlorobenzene | 120-82-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 78 | %REC | | | 1 |
| 4-Chloro-3-Methylphenol | 59-50-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 78 | %REC | | | 1 |
| Acenaphthene | 83-32-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 82 | %REC | | | 1 |
| 4-Nitrophenol | 100-02-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 90 | %REC | | | 1 |
| 2,4-Dinitrotoluene | 121-14-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 94 | %REC | | | 1 |
| Pentachlorophenol | 87-86-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 82 | %REC | | | 1 |
| Pyrene | 129-00-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 15 | %REC | | | 1 |
| 2-Fluorophenol | 367-12-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 84 | %REC | | | 1 |
| Phenol-d5 | 4165-62-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 87 | %REC | | | 1 |
| Nitrobenzene-d5 | 4165-60-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 84 | %REC | | | 1 |
| 2-Fluorobiphenyl | 321-60-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 80 | %REC | | | 1 |
| 2,4,6-Tribromophenol | 118-79-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 88 | %REC | | | 1 |
| Terphenyl-d14 | 1718-51-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 71 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM6

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 108-95-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| bis(2-Chloroethyl)Ether | 111-44-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2-Chlorophenol | 95-57-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 1,3-Dichlorobenzene | 541-73-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 1,4-Dichlorobenzene | 106-46-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 1,2-Dichlorobenzene | 95-50-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2-Methylphenol | 95-48-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2,2'-oxybis (1-Chloropropane) | 108-60-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| N-nitroso-di-n-propylamine | 621-64-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Methylphenol | 106-44-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Hexachloroethane | 67-72-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Nitrobenzene | 98-95-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Isophorone | 78-59-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2-Nitrophenol | 88-75-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2,4-Dimethylphenol | 105-67-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| bis(2-Chloroethoxy)Methane | 111-91-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2,4-Dichlorophenol | 120-83-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 1,2,4-Trichlorobenzene | 120-82-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Naphthalene | 91-20-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Chloroaniline | 106-47-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Hexachlorobutadiene | 87-68-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Chloro-3-Methylphenol | 59-50-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2-Methylnaphthalene | 91-57-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Hexachlorocyclopentadiene | 77-47-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| 2,4,6-Trichlorophenol | 88-06-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2,4,5-Trichlorophenol | 95-95-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2-Chloronaphthalene | 91-58-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2-Nitroaniline | 88-74-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Acenaphthylene | 208-96-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2,6-Dinitrotoluene | 606-20-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 3-Nitroaniline | 99-09-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Acenaphthene | 83-32-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 2,4-Dinitrophenol | 51-28-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Dibenzofuran | 132-64-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Nitrophenol | 100-02-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| 2,4-Dinitrotoluene | 121-14-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Fluorene | 86-73-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| DimethylPhthalate | 131-11-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Diethylphthalate | 84-66-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Chlorophenyl-PhenylEther | 7005-72-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Nitroaniline | 100-01-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| 4,6-Dinitro-2-Methylphenol | 534-52-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| n-Nitrosodiphenylamine | 86-30-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| 4-Bromophenyl-Phenyl Ether | 101-55-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Hexachlorobenzene | 118-74-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Pentachlorophenol | 87-86-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Phenanthrene | 85-01-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 110 | UG/KG | J | 350 | 1 |
| Anthracene | 120-12-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Di-N-Butylphthalate | 84-74-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 110 | UG/KG | J | 350 | 1 |
| Fluoranthene | 206-44-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 220 | UG/KG | J | 350 | 1 |
| Pyrene | 129-00-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 280 | UG/KG | J | 350 | 1 |
| ButylBenzylPhthalate | 85-68-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Benzo(a)Anthracene | 56-55-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 65 | UG/KG | J | 350 | 1 |
| 3,3'-Dichlorobenzidine | 91-94-1 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 1 |
| Chrysene | 218-01-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 130 | UG/KG | J | 350 | 1 |
| bis(2-Ethylhexyl)Phthalate | 117-81-7 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 86 | UG/KG | BJ | 350 | 1 |
| di-N-OctylPhthalate | 117-84-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Benzo(b)Fluoranthene | 205-99-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 100 | UG/KG | J | 350 | 1 |
| Benzo(k)Fluoranthene | 207-08-9 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 120 | UG/KG | J | 350 | 1 |
| Benzo(a)Pyrene | 50-32-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 100 | UG/KG | J | 350 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM6

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Indeno(1,2,3-CD)Pyrene | 193-39-5 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 79 | UG/KG | J | 350 | 1 |
| Dibenz(a,h)Anthracene | 53-70-3 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Carbazole | 86-74-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 350 | UG/KG | U | 350 | 1 |
| Benzo(g,h,i)Perylene | 191-24-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 88 | UG/KG | J | 350 | 1 |
| 2-Fluorophenol | 367-12-4 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 79 | %REC | | | 1 |
| Phenol-d5 | 4165-62-2 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 87 | %REC | | | 1 |
| Nitrobenzene-d5 | 4165-60-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 81 | %REC | | | 1 |
| 2-Fluorobiphenyl | 321-60-8 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 75 | %REC | | | 1 |
| 2,4,6-Tribromophenol | 118-79-6 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 78 | %REC | | | 1 |
| Terphenyl-d14 | 1718-51-0 | QCBLK209739-1 | 10/25/99 | 10/26/99 | 88 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM8

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 108-95-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| bis(2-Chloroethyl)Ether | 111-44-4 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Chlorophenol | 95-57-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 1,3-Dichlorobenzene | 541-73-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 1,4-Dichlorobenzene | 106-46-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 1,2-Dichlorobenzene | 95-50-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Methylphenol | 95-48-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2,2'-oxybis (1-Chloropropane) | 108-60-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| N-nitroso-di-n-propylamine | 621-64-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Methylphenol | 106-44-5 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Hexachloroethane | 67-72-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Nitrobenzene | 98-95-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Isophorone | 78-59-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Nitrophenol | 88-75-5 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2,4-Dimethylphenol | 105-67-9 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| bis(2-Chloroethoxy)Methane | 111-91-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2,4-Dichlorophenol | 120-83-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 1,2,4-Trichlorobenzene | 120-82-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Naphthalene | 91-20-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Chloroaniline | 106-47-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Hexachlorobutadiene | 87-68-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Chloro-3-Methylphenol | 59-50-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Methylnaphthalene | 91-57-6 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Hexachlorocyclopentadiene | 77-47-4 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| 2,4,6-Trichlorophenol | 88-06-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2,4,5-Trichlorophenol | 95-95-4 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Chloronaphthalene | 91-58-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Nitroaniline | 88-74-4 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| Acenaphthylene | 208-96-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2,6-Dinitrotoluene | 606-20-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 3-Nitroaniline | 99-09-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| Acenaphthene | 83-32-9 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2,4-Dinitrophenol | 51-28-5 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| Dibenzofuran | 132-64-9 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Nitrophenol | 100-02-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| 2,4-Dinitrotoluene | 121-14-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Fluorene | 86-73-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| DimethylPhthalate | 131-11-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Diethylphthalate | 84-66-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Chlorophenyl-PhenylEther | 7005-72-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Nitroaniline | 100-01-6 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| 4,6-Dinitro-2-Methylphenol | 534-52-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| n-Nitrosodiphenylamine | 86-30-6 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 4-Bromophenyl-Phenyl Ether | 101-55-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Hexachlorobenzene | 118-74-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Pentachlorophenol | 87-86-5 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| Phenanthrene | 85-01-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Anthracene | 120-12-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Di-N-Butylphthalate | 84-74-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Fluoranthene | 206-44-0 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Pyrene | 129-00-0 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| ButylBenzylPhthalate | 85-68-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Benzo(a)Anthracene | 56-55-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 3,3'-Dichlorobenzidine | 91-94-1 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 1700 | UG/KG | U | 1700 | 1 |
| Chrysene | 218-01-9 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| bis(2-Ethylhexyl)Phthalate | 117-81-7 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| di-N-OctylPhthalate | 117-84-0 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Benzo(b)Fluoranthene | 205-99-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Benzo(k)Fluoranthene | 207-08-9 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Benzo(a)Pyrene | 50-32-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM8

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Indeno(1,2,3-CD)Pyrene | 193-39-5 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Dibenz(a,h)Anthracene | 53-70-3 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Carbazole | 86-74-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| Benzo(g,h,i)Perylene | 191-24-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 340 | UG/KG | U | 340 | 1 |
| 2-Fluorophenol | 367-12-4 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 76 | %REC | | | 1 |
| Phenol-d5 | 4165-62-2 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 86 | %REC | | | 1 |
| Nitrobenzene-d5 | 4165-60-0 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 72 | %REC | | | 1 |
| 2-Fluorobiphenyl | 321-60-8 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 69 | %REC | | | 1 |
| 2,4,6-Tribromophenol | 118-79-6 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 68 | %REC | | | 1 |
| Terphenyl-d14 | 1718-51-0 | QCBLK210573-1 | 11/03/99 | 11/03/99 | 65 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM4

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 108-95-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| bis(2-Chloroethyl)Ether | 111-44-4 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Chlorophenol | 95-57-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 1,3-Dichlorobenzene | 541-73-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 1,4-Dichlorobenzene | 106-46-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 1,2-Dichlorobenzene | 95-50-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Methylphenol | 95-48-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2,2'-oxybis (1-Chloropropane) | 108-60-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| N-nitroso-di-n-propylamine | 621-64-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Methylphenol | 106-44-5 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Hexachloroethane | 67-72-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Nitrobenzene | 98-95-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Isophorone | 78-59-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Nitrophenol | 88-75-5 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2,4-Dimethylphenol | 105-67-9 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| bis(2-Chloroethoxy)Methane | 111-91-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2,4-Dichlorophenol | 120-83-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 1,2,4-Trichlorobenzene | 120-82-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Naphthalene | 91-20-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Chloroaniline | 106-47-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Hexachlorobutadiene | 87-68-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Chloro-3-Methylphenol | 59-50-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Methylnaphthalene | 91-57-6 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Hexachlorocyclopentadiene | 77-47-4 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| 2,4,6-Trichlorophenol | 88-06-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2,4,5-Trichlorophenol | 95-95-4 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Chloronaphthalene | 91-58-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Nitroaniline | 88-74-4 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| Acenaphthylene | 208-96-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2,6-Dinitrotoluene | 606-20-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 3-Nitroaniline | 99-09-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| Acenaphthene | 83-32-9 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2,4-Dinitrophenol | 51-28-5 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| Dibenzofuran | 132-64-9 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Nitrophenol | 100-02-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| 2,4-Dinitrotoluene | 121-14-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Fluorene | 86-73-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| DimethylPhthalate | 131-11-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Diethylphthalate | 84-66-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Chlorophenyl-PhenylEther | 7005-72-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Nitroaniline | 100-01-6 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| 4,6-Dinitro-2-Methylphenol | 534-52-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| n-Nitrosodiphenylamine | 86-30-6 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 4-Bromophenyl-Phenyl Ether | 101-55-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Hexachlorobenzene | 118-74-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Pentachlorophenol | 87-86-5 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| Phenanthrene | 85-01-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Anthracene | 120-12-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Di-N-Butylphthalate | 84-74-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Fluoranthene | 206-44-0 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Pyrene | 129-00-0 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| ButylBenzylPhthalate | 85-68-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Benzo(a)Anthracene | 56-55-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 3,3'-Dichlorobenzidine | 91-94-1 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 1900 | UG/KG | U | 1900 | 1 |
| Chrysene | 218-01-9 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| bis(2-Ethylhexyl)Phthalate | 117-81-7 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| di-N-OctylPhthalate | 117-84-0 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Benzo(b)Fluoranthene | 205-99-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Benzo(k)Fluoranthene | 207-08-9 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Benzo(a)Pyrene | 50-32-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Semivolatile
Method: SW-846 8270C
Matrix: SOLID

Client ID: B0WMM4

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Indeno(1,2,3-CD)Pyrene | 193-39-5 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Dibenz(a,h)Anthracene | 53-70-3 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Carbazole | 86-74-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| Benzo(g,h,i)Perylene | 191-24-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 380 | UG/KG | U | 380 | 1 |
| 2-Fluorophenol | 367-12-4 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 65 | %REC | | | 1 |
| Phenol-d5 | 4165-62-2 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 70 | %REC | | | 1 |
| Nitrobenzene-d5 | 4165-60-0 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 65 | %REC | | | 1 |
| 2-Fluorobiphenyl | 321-60-8 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 62 | %REC | | | 1 |
| 2,4,6-Tribromophenol | 118-79-6 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 85 | %REC | | | 1 |
| Terphenyl-d14 | 1718-51-0 | QCBLK211066-1 | 11/10/99 | 11/11/99 | 73 | %REC | | | 1 |

Data is incomplete without Case Narrative

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KSMP3357

Level: (low/med) LOW Date Received: 10/21/99

% Moisture: not dec. 10 dec._____ Date Extracted:10/25/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | Bis(2-chloroethyl)ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2-oxybis(1-Chloropropane) | 370 | U |
| 621-64-7 | N-Nitrosodinpropylamine | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 111-91-1 | Bis(2-chloroethoxy)methane | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 370 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 370 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 370 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 1800 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KSMP3357

Level: (low/med) LOW Date Received: 10/21/99

% Moisture: not dec. 10 dec._____ Date Extracted:10/25/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 56 | J |
| 51-28-5 | 2,4-Dinitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |
| 86-73-7 | Fluorene | 40 | J |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 84-66-2 | Diethylphthalate | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1800 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 610 | |
| 120-12-7 | Anthracene | 48 | J |
| 84-74-2 | Di-n-Butylphthalate | 370 | U |
| 206-44-0 | Fluoranthene | 1300 | |
| 129-00-0 | Pyrene | 1400 | |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 56-55-3 | Benzo(a)Anthracene | 560 | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1800 | U |

(1) - Cannot be separated from Diphenylamine

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KSMP3357

Level: (low/med) LOW Date Received: 10/21/99

% Moisture: not dec. 10 dec._____ Date Extracted:10/25/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 790 | |
| 117-81-7 | bis(2-ethylhexyl)Phthalate | 370 | U |
| 117-84-0 | Di-n-octylphthalate | 370 | U |
| 205-99-2 | Benzo(b)fluoranthene | 470 | |
| 207-08-9 | Benzo(k)fluoranthene | 620 | |
| 50-32-8 | Benzo(a)pyrene | 660 | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 350 | J |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 86-74-8 | Carbazole | 38 | J |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | |

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: KSMP3357

Level: (low/med) LOW Date Received: 10/21/99

% Moisture: not dec. 10 dec._____ Date Extracted:10/25/99

Final Volume: 1000 Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KSMP3360

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: not dec. 7 dec._____ Date Extracted:10/25/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 350 | U |
| 111-44-4 | Bis(2-chloroethyl)ether | 350 | U |
| 95-57-8 | 2-Chlorophenol | 350 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 350 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 350 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 350 | U |
| 95-48-7 | 2-Methylphenol | 350 | U |
| 108-60-1 | 2,2-oxybis(1-Chloropropane) | 350 | U |
| 621-64-7 | N-Nitrosodinpropylamine | 350 | U |
| 106-44-5 | 4-Methylphenol | 350 | U |
| 67-72-1 | Hexachloroethane | 350 | U |
| 98-95-3 | Nitrobenzene | 350 | U |
| 78-59-1 | Isophorone | 350 | U |
| 88-75-5 | 2-Nitrophenol | 350 | U |
| 105-67-9 | 2,4-Dimethylphenol | 350 | U |
| 111-91-1 | Bis(2-chloroethoxy)methane | 350 | U |
| 120-83-2 | 2,4-Dichlorophenol | 350 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 350 | U |
| 91-20-3 | Naphthalene | 350 | U |
| 106-47-8 | 4-Chloroaniline | 350 | U |
| 87-68-3 | Hexachlorobutadiene | 350 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 350 | U |
| 91-57-6 | 2-Methylnaphthalene | 350 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 1800 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 350 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 350 | U |
| 91-58-7 | 2-Chloronaphthalene | 350 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KSMP3360

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: not dec. 7 dec._____ Date Extracted:10/25/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 208-96-8 | Acenaphthylene | 350 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 350 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 350 | U |
| 51-28-5 | 2,4-Dinitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 350 | U |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 350 | U |
| 86-73-7 | Fluorene | 350 | U |
| 131-11-3 | Dimethylphthalate | 350 | U |
| 84-66-2 | Diethylphthalate | 350 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 350 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1800 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 350 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 350 | U |
| 118-74-1 | Hexachlorobenzene | 350 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 110 | J |
| 120-12-7 | Anthracene | 350 | U |
| 84-74-2 | Di-n-Butylphthalate | 110 | J |
| 206-44-0 | Fluoranthene | 220 | J |
| 129-00-0 | Pyrene | 280 | J |
| 85-68-7 | Butylbenzylphthalate | 350 | U |
| 56-55-3 | Benzo(a)Anthracene | 65 | J |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1800 | U |

(1) - Cannot be separated from Diphenylamine

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KSMP3360

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: not dec. 7 dec._____ Date Extracted:10/25/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 130 | J |
| 117-81-7 | bis(2-ethylhexyl)Phthalate | 86 | JB |
| 117-84-0 | Di-n-octylphthalate | 350 | U |
| 205-99-2 | Benzo(b)fluoranthene | 100 | J |
| 207-08-9 | Benzo(k)fluoranthene | 120 | J |
| 50-32-8 | Benzo(a)pyrene | 100 | J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 79 | J |
| 53-70-3 | Dibenzo(a,h)anthracene | 350 | U |
| 86-74-8 | Carbazole | 350 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 88 | J |

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 30.4 (g/mL) G Lab File ID: KSMP3360

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: not dec. 7 dec._____ Date Extracted:10/25/99

Final Volume: 1000 Date Analyzed: 10/26/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3618

Level: (low/med) LOW Date Received: 10/28/99

% Moisture: not dec. 3 dec._____ Date Extracted:11/03/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/03/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 340 | U |
| 111-44-4 | Bis(2-chloroethyl)ether | 340 | U |
| 95-57-8 | 2-Chlorophenol | 340 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 340 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 340 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 340 | U |
| 95-48-7 | 2-Methylphenol | 340 | U |
| 108-60-1 | 2,2-oxybis(1-Chloropropane) | 340 | U |
| 621-64-7 | N-Nitrosodinpropylamine | 340 | U |
| 106-44-5 | 4-Methylphenol | 340 | U |
| 67-72-1 | Hexachloroethane | 340 | U |
| 98-95-3 | Nitrobenzene | 340 | U |
| 78-59-1 | Isophorone | 340 | U |
| 88-75-5 | 2-Nitrophenol | 340 | U |
| 105-67-9 | 2,4-Dimethyphenol | 340 | U |
| 111-91-1 | Bis(2-chloroethoxy)methane | 340 | U |
| 120-83-2 | 2,4-Dichlorophenol | 340 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 340 | U |
| 91-20-3 | Naphthalene | 340 | U |
| 106-47-8 | 4-Chloroaniline | 340 | U |
| 87-68-3 | Hexachlorobutadiene | 340 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 340 | U |
| 91-57-6 | 2-Methylnaphthalene | 340 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 1700 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 340 | U |
| 95-95-4 | 2,4,5-Trichlorphenol | 340 | U |
| 91-58-7 | 2-Chloronaphthalene | 340 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3618

Level: (low/med) LOW Date Received: 10/28/99

% Moisture: not dec. 3 dec._____ Date Extracted:11/03/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/03/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 1700 | U |
| 208-96-8 | Acenaphthylene | 340 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 340 | U |
| 99-09-2 | 3-Nitroaniline | 1700 | U |
| 83-32-9 | Acenaphthene | 340 | U |
| 51-28-5 | 2,4-Dinitrophenol | 1700 | U |
| 132-64-9 | Dibenzofuran | 340 | U |
| 100-02-7 | 4-Nitrophenol | 1700 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 340 | U |
| 86-73-7 | Fluorene | 340 | U |
| 131-11-3 | Dimethylphthalate | 340 | U |
| 84-66-2 | Diethylphthalate | 340 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 340 | U |
| 100-01-6 | 4-Nitroaniline | 1700 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1700 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 340 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 340 | U |
| 118-74-1 | Hexachlorobenzene | 340 | U |
| 87-86-5 | Pentachlorophenol | 1700 | U |
| 85-01-8 | Phenanthrene | 340 | U |
| 120-12-7 | Anthracene | 340 | U |
| 84-74-2 | Di-n-Butylphthalate | 340 | U |
| 206-44-0 | Fluoranthene | 340 | U |
| 129-00-0 | Pyrene | 340 | U |
| 85-68-7 | Butylbenzylphthalate | 340 | U |
| 56-55-3 | Benzo(a)Anthracene | 340 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1700 | U |

(1) - Cannot be separated from Diphenylamine

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3618

Level: (low/med) LOW Date Received: 10/28/99

% Moisture: not dec. 3 dec._____ Date Extracted:11/03/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/03/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 340 | U |
| 117-81-7 | bis(2-ethylhexyl)Phthalate | 340 | U |
| 117-84-0 | Di-n-octylphthalate | 340 | U |
| 205-99-2 | Benzo(b)fluoranthene | 340 | U |
| 207-08-9 | Benzo(k)fluoranthene | 340 | U |
| 50-32-8 | Benzo(a)pyrene | 340 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 340 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 340 | U |
| 86-74-8 | Carbazole | 340 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 340 | U |

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3618

Level: (low/med) LOW Date Received: 10/28/99

% Moisture: not dec. 3 dec._____ Date Extracted:11/03/99

Final Volume: 1000 Date Analyzed: 11/03/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA Contract: 550.267W

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3660

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 dec._____ Date Extracted:11/10/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/11/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 380 | U |
| 111-44-4 | Bis(2-chloroethyl)ether | 380 | U |
| 95-57-8 | 2-Chlorophenol | 380 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 380 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 380 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 380 | U |
| 95-48-7 | 2-Methylphenol | 380 | U |
| 108-60-1 | 2,2-oxybis(1-Chloropropane) | 380 | U |
| 621-64-7 | N-Nitrosodinpropylamine | 380 | U |
| 106-44-5 | 4-Methylphenol | 380 | U |
| 67-72-1 | Hexachloroethane | 380 | U |
| 98-95-3 | Nitrobenzene | 380 | U |
| 78-59-1 | Isophorone | 380 | U |
| 88-75-5 | 2-Nitrophenol | 380 | U |
| 105-67-9 | 2,4-Dimethyphenol | 380 | U |
| 111-91-1 | Bis(2-chloroethoxy)methane | 380 | U |
| 120-83-2 | 2,4-Dichlorophenol | 380 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 380 | U |
| 91-20-3 | Naphthalene | 380 | U |
| 106-47-8 | 4-Chloroaniline | 380 | U |
| 87-68-3 | Hexachlorobutadiene | 380 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 380 | U |
| 91-57-6 | 2-Methylnaphthalene | 380 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 1900 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 380 | U |
| 95-95-4 | 2,4,5-Trichlorphenol | 380 | U |
| 91-58-7 | 2-Chloronaphthalene | 380 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA Contract: 550.267W

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3660

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 dec._____ Date Extracted:11/10/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/11/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 208-96-8 | Acenaphthylene | 380 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 380 | U |
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 380 | U |
| 51-28-5 | 2,4-Dinitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 380 | U |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 380 | U |
| 86-73-7 | Fluorene | 380 | U |
| 131-11-3 | Dimethylphthalate | 380 | U |
| 84-66-2 | Diethylphthalate | 380 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 380 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1900 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 380 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 380 | U |
| 118-74-1 | Hexachlorobenzene | 380 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 380 | U |
| 120-12-7 | Anthracene | 380 | U |
| 84-74-2 | Di-n-Butylphthalate | 380 | U |
| 206-44-0 | Fluoranthene | 380 | U |
| 129-00-0 | Pyrene | 380 | U |
| 85-68-7 | Butylbenzylphthalate | 380 | U |
| 56-55-3 | Benzo(a)Anthracene | 380 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1900 | U |

(1) - Cannot be separated from Diphenylamine

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA Contract: 550.267W

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3660

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 dec._____ Date Extracted:11/10/99

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/11/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 380 | U |
| 117-81-7 | bis(2-ethylhexyl)Phthalate | 380 | U |
| 117-84-0 | Di-n-octylphthalate | 380 | U |
| 205-99-2 | Benzo(b)fluoranthene | 380 | U |
| 207-08-9 | Benzo(k)fluoranthene | 380 | U |
| 50-32-8 | Benzo(a)pyrene | 380 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 380 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 380 | U |
| 86-74-8 | Carbazole | 380 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 380 | U |

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITSL Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: JSMP3660

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 dec._____ Date Extracted:11/10/99

Final Volume: 1000 Date Analyzed: 11/11/99

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: PCB's
Method: SW-846 8082A
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 12674-11-2 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 37 | UG/KG | U | 37 | 1 |
| Aroclor-1221 | 11104-28-2 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 37 | UG/KG | U | 37 | 1 |
| Aroclor-1232 | 11141-16-5 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 37 | UG/KG | U | 37 | 1 |
| Aroclor-1242 | 53469-21-9 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 37 | UG/KG | U | 37 | 1 |
| Aroclor-1248 | 12672-29-6 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 37 | UG/KG | U | 37 | 1 |
| Aroclor-1254 | 11097-69-1 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 37 | UG/KG | U | 37 | 1 |
| Aroclor-1260 | 11096-82-5 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 360 | UG/KG | | 37 | 1 |
| TCMX | 877-09-8 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 91 | %REC | | | 1 |
| DCB | 2051-24-3 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 110 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: PCB's
Method: SW-846 8082A
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MS

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 12674-11-2 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 94 | %REC | | | 1 |
| Aroclor-1260 | 11096-82-5 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 106 | %REC | | | 1 |
| TCMX | 877-09-8 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 99 | %REC | | | 1 |
| DCB | 2051-24-3 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 101 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: PCB's
Method: SW-846 8082A
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MSD

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 12674-11-2 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 99 | %REC | | | 1 |
| Aroclor-1260 | 11096-82-5 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 144 | %REC | | | 1 |
| TCMX | 877-09-8 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 107 | %REC | | | 1 |
| DCB | 2051-24-3 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 116 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: PCB's
Method: SW-846 8082A
Matrix: SOLID

Client ID: B0WMM6

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 12674-11-2 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 50 |
| Aroclor-1221 | 11104-28-2 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 50 |
| Aroclor-1232 | 11141-16-5 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 50 |
| Aroclor-1242 | 53469-21-9 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 50 |
| Aroclor-1248 | 12672-29-6 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 50 |
| Aroclor-1254 | 11097-69-1 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 1800 | UG/KG | U | 1800 | 50 |
| Aroclor-1260 | 11096-82-5 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 10000 | UG/KG | | 1800 | 50 |
| TCMX | 877-09-8 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 0 | %REC | D | | 50 |
| DCB | 2051-24-3 | QCBLK209745-1 | 10/25/99 | 10/26/99 | 0 | %REC | D | | 50 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: PCB's
Method: SW-846 8082A
Matrix: SOLID

Client ID: B0WMM8

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 12674-11-2 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| Aroclor-1221 | 11104-28-2 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| Aroclor-1232 | 11141-16-5 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| Aroclor-1242 | 53469-21-9 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| Aroclor-1248 | 12672-29-6 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| Aroclor-1254 | 11097-69-1 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| Aroclor-1260 | 11096-82-5 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 34 | UG/KG | U | 34 | 1 |
| TCMX | 877-09-8 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 85 | %REC | | | 1 |
| DCB | 2051-24-3 | QCBLK210576-1 | 11/03/99 | 11/04/99 | 124 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: PCB's
Method: SW-846 8082A
Matrix: SOLID

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Client ID: B0WMM4

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 12674-11-2 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| Aroclor-1221 | 11104-28-2 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| Aroclor-1232 | 11141-16-5 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| Aroclor-1242 | 53469-21-9 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| Aroclor-1248 | 12672-29-6 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| Aroclor-1254 | 11097-69-1 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| Aroclor-1260 | 11096-82-5 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 38 | UG/KG | U | 38 | 1 |
| TCMX | 877-09-8 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 110 | %REC | | | 1 |
| DCB | 2051-24-3 | QCBLK210711-1 | 11/05/99 | 11/08/99 | 110 | %REC | | | 1 |

Data is incomplete without Case Narrative

FORM 1 Quanterra-Richland SAMPLE NO.

PCB ORGANICS ANALYSIS DATA SHEET

B0WMM2

Lab Name: QUANTERRA, ST. LOUIS MO Contract: 550.267

Lab Code: Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DB__634

% Moisture: 10 decanted: (Y/N) N Date Received: 10/21/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:10/25/99

Concentrated Extract Volume: 10(mL) Date Analyzed: 10/26/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 37 | U |
| 11104-28-2 | Aroclor-1221 | 37 | U |
| 1114-16-5 | Aroclor-1232 | 37 | U |
| 53469-21-9 | Aroclor-1242 | 37 | U |
| 12672-29-6 | Aroclor-1248 | 37 | U |
| 11097-69-1 | Aroclor-1254 | 37 | U |
| 11096-82-5 | Aroclor-1260 | 360 | |
| 37324-23-5 | Aroclor-1262 | 37 | U |
| 11100-14-4 | Aroclor-1268 | 37 | U |

FORM 1 Quanterra-Richland SAMPLE NO.

PCB ORGANICS ANALYSIS DATA SHEET

B0WMM6

Lab Name: QUANTERRA, ST. LOUIS MO Contract: 550.267

Lab Code: Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: DB__637

% Moisture: 7 decanted: (Y/N) N Date Received: 10/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:10/25/99

Concentrated Extract Volume: 10(mL) Date Analyzed: 10/26/99

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1800 | U |
| 11104-28-2 | Aroclor-1221 | 1800 | U |
| 1114-16-5 | Aroclor-1232 | 1800 | U |
| 53469-21-9 | Aroclor-1242 | 1800 | U |
| 12672-29-6 | Aroclor-1248 | 1800 | U |
| 11097-69-1 | Aroclor-1254 | 1800 | U |
| 11096-82-5 | Aroclor-1260 | 10000 | |
| 37324-23-5 | Aroclor-1262 | 1800 | U |
| 11100-14-4 | Aroclor-1268 | 1800 | U |

FORM 1 Quanterra-Richland SAMPLE NO.

PCB ORGANICS ANALYSIS DATA SHEET

B0WMM8

Lab Name: QUANTERRA, ST. LOUIS MO Contract: 550.267

Lab Code: Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DB__827

% Moisture: 3 decanted: (Y/N) N Date Received: 10/28/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/03/99

Concentrated Extract Volume: 10(mL) Date Analyzed: 11/04/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 34 | U |
| 11104-28-2------ | Aroclor-1221 | 34 | U |
| 1114-16-5------- | Aroclor-1232 | 34 | U |
| 53469-21-9------ | Aroclor-1242 | 34 | U |
| 12672-29-6------ | Aroclor-1248 | 34 | U |
| 11097-69-1------ | Aroclor-1254 | 34 | U |
| 11096-82-5------ | Aroclor-1260 | 34 | U |
| 37324-23-5------ | Aroclor-1262 | 34 | U |
| 11100-14-4------ | Aroclor-1268 | 34 | U |

FORM 1 Quanterra-Richland SAMPLE NO.

PCB ORGANICS ANALYSIS DATA SHEET

B0WMM4

Lab Name: QUANTERRA, ST. LOUIS MO Contract: 550.267

Lab Code: Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DB__874

% Moisture: 11 decanted: (Y/N) N Date Received: 11/02/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/05/99

Concentrated Extract Volume: 10(mL) Date Analyzed: 11/08/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 38 | U |
| 11104-28-2 | Aroclor-1221 | 38 | U |
| 1114-16-5 | Aroclor-1232 | 38 | U |
| 53469-21-9 | Aroclor-1242 | 38 | U |
| 12672-29-6 | Aroclor-1248 | 38 | U |
| 11097-69-1 | Aroclor-1254 | 38 | U |
| 11096-82-5 | Aroclor-1260 | 38 | U |
| 37324-23-5 | Aroclor-1262 | 38 | U |
| 11100-14-4 | Aroclor-1268 | 38 | U |

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: TPH
Method: EPA 8015
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | 68334-30-5 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 28 | UG/KG | U | 28 | 1 |
| Waste Oil | TPH/OILH | QCBLK210550-1 | 11/03/99 | 11/05/99 | 28 | UG/KG | U | 28 | 1 |
| Miscellaneous Oil | MO-002 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 28 | UG/KG | U | 28 | 1 |
| o-Terphenyl | 84-15-1 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 87 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: TPH
Method: EPA 8015
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MS

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | 68334-30-5 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 91 | %REC | | | 1 |
| o-Terphenyl | 84-15-1 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 107 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: TPH
Method: EPA 8015
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MSD

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | 68334-30-5 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 88 | %REC | | | 1 |
| o-Terphenyl | 84-15-1 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 103 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: TPH
Method: EPA 8015
Matrix: SOLID

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Client ID: B0WMM6

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | 68334-30-5 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 27 | UG/KG | U | 27 | 1 |
| Waste Oil | TPH/OILH | QCBLK210550-1 | 11/03/99 | 11/05/99 | 98 | UG/KG | | 27 | 1 |
| Miscellaneous Oil | MO-002 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 27 | UG/KG | U | 27 | 1 |
| o-Terphenyl | 84-15-1 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 95 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: TPH
Method: EPA 8015
Matrix: SOLID

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Client ID: B0WMM8

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | 68334-30-5 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 26 | UG/KG | U | 26 | 1 |
| Waste Oil | TPH/OILH | QCBLK210550-1 | 11/03/99 | 11/05/99 | 26 | UG/KG | U | 26 | 1 |
| Miscellaneous Oil | MO-002 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 26 | UG/KG | U | 26 | 1 |
| o-Terphenyl | 84-15-1 | QCBLK210550-1 | 11/03/99 | 11/05/99 | 88 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: TPH
Method: EPA 8015
Matrix: SOLID

Client ID: B0WMM4

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | 68334-30-5 | QCBLK211292-1 | 11/11/99 | 11/24/99 | 28 | UG/KG | U | 28 | 1 |
| Waste Oil | TPH/OILH | QCBLK211292-1 | 11/11/99 | 11/24/99 | 28 | UG/KG | U | 28 | 1 |
| Miscellaneous Oil | MO-002 | QCBLK211292-1 | 11/11/99 | 11/24/99 | 28 | UG/KG | U | 28 | 1 |
| o-Terphenyl | 84-15-1 | QCBLK211292-1 | 11/11/99 | 11/24/99 | 86 | %REC | | | 1 |

Data is incomplete without Case Narrative

FORM 1 Quanterra-Richland SAMPLE NO.

TPH ORGANICS ANALYSIS DATA SHEET

B0WMM2

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22449-001TPH

Sample wt/vol: 20.2 (g/mL) G Lab File ID: FA__483

% Moisture: 10 decanted: (Y/N) N Date Received: 10/21/99

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:11/03/99

Concentrated Extract Volume: 5(ml) Date Analyzed: 11/05/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG | Q |
|---|---|---|---|
| | ----------Diesel | 27.67 | U |
| | ----------Waste Oil | 27.67 | U |
| | ----------Miscellaneous | 27.67 | U |

FORM 1 Quanterra-Richland SAMPLE NO.

TPH ORGANICS ANALYSIS DATA SHEET

B0WMM6

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22456-001TPH

Sample wt/vol: 20.3 (g/mL) G Lab File ID: FA__486

% Moisture: 7 decanted: (Y/N) N Date Received: 10/22/99

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:11/03/99

Concentrated Extract Volume: 5(ml) Date Analyzed: 11/05/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG | Q |
|---|---|---|---|
| | ----------Diesel | 26.80 | U |
| | ----------Waste Oil | 97.84 | |
| | ----------Miscellaneous | 26.80 | U |

FORM I TPH

FORM 1 Quanterra-Richland SAMPLE NO.

TPH ORGANICS ANALYSIS DATA SHEET

B0WMM8

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22502-001TPH

Sample wt/vol: 20.5 (g/mL) G Lab File ID: FA__487

% Moisture: 3 decanted: (Y/N) N Date Received: 10/28/99

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:11/03/99

Concentrated Extract Volume: 5(ml) Date Analyzed: 11/05/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG | Q |
|---|---|---|---|
| | ----------Diesel | 25.89 | U |
| | ----------Waste Oil | 25.89 | U |
| | ----------Miscellaneous | 25.89 | U |

FORM I TPH

FORM 1
TPH ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix: (soil/water) SOIL Lab Sample ID: 22514-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FA__630

% Moisture: 11 decanted: (Y/N) N Date Received: 11/02/99

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:11/11/99

Concentrated Extract Volume: 5(ml) Date Analyzed: 11/24/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG | Q |
|---|---|---|---|
| | ----------Diesel | 28.22 | U |
| | ----------Waste Oil | 28.22 | U |
| | ----------Miscellaneous | 28.22 | U |

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 4.8 | MG/KG | | 1.1 | 1 |
| Barium | 7440-39-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 81.0 | MG/KG | | 22.1 | 1 |
| Beryllium | 7440-41-7 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.33 | MG/KG | B | 0.55 | 1 |
| Chromium | 7440-47-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 10.2 | MG/KG | | 1.1 | 1 |
| Cobalt | 7440-48-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 11.0 | MG/KG | | 5.5 | 1 |
| Copper | 7440-50-8 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 16.2 | MG/KG | | 2.8 | 1 |
| Lead | 7439-92-1 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 17.0 | MG/KG | | 0.33 | 1 |
| Nickel | 7440-02-0 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 10.2 | MG/KG | EN | 4.4 | 1 |
| Selenium | 7782-49-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.31 | MG/KG | U | 0.55 | 1 |
| Silver | 7440-22-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 1.0 | MG/KG | B | 1.1 | 1 |
| Vanadium | 7440-62-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 56.1 | MG/KG | | 5.5 | 1 |
| Zinc | 7440-66-6 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 90.1 | MG/KG | | 2.2 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001MS

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 96 | %REC | | | 1 |
| Barium | 7440-39-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 91 | %REC | | | 1 |
| Beryllium | 7440-41-7 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 100 | %REC | | | 1 |
| Chromium | 7440-47-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 90 | %REC | | | 1 |
| Cobalt | 7440-48-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 90 | %REC | | | 1 |
| Copper | 7440-50-8 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 98 | %REC | | | 1 |
| Lead | 7439-92-1 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 88 | %REC | | | 1 |
| Nickel | 7440-02-0 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 95 | %REC | | | 1 |
| Selenium | 7782-49-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 92 | %REC | | | 1 |
| Silver | 7440-22-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 99 | %REC | | | 1 |
| Vanadium | 7440-62-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 91 | %REC | | | 1 |
| Zinc | 7440-66-6 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 82 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Client ID: B0WMM2

Quanterra ID : 22449-001MSD

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 98 | %REC | | | 1 |
| Barium | 7440-39-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 92 | %REC | | | 1 |
| Beryllium | 7440-41-7 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 102 | %REC | | | 1 |
| Chromium | 7440-47-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 94 | %REC | | | 1 |
| Cobalt | 7440-48-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 91 | %REC | | | 1 |
| Copper | 7440-50-8 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 106 | %REC | | | 1 |
| Lead | 7439-92-1 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 89 | %REC | | | 1 |
| Nickel | 7440-02-0 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 194 | %REC | N | | 1 |
| Selenium | 7782-49-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 93 | %REC | | | 1 |
| Silver | 7440-22-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 103 | %REC | | | 1 |
| Vanadium | 7440-62-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 92 | %REC | | | 1 |
| Zinc | 7440-66-6 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 80 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Client ID: B0WMM6

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 2.3 | MG/KG | | 1.1 | 1 |
| Barium | 7440-39-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 80.6 | MG/KG | | 21.4 | 1 |
| Beryllium | 7440-41-7 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.29 | MG/KG | B | 0.54 | 1 |
| Chromium | 7440-47-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 10.9 | MG/KG | | 1.1 | 1 |
| Cobalt | 7440-48-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 11.0 | MG/KG | | 5.4 | 1 |
| Copper | 7440-50-8 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 16.2 | MG/KG | | 2.7 | 1 |
| Lead | 7439-92-1 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 68.9 | MG/KG | | 0.32 | 1 |
| Nickel | 7440-02-0 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 9.2 | MG/KG | EN | 4.3 | 1 |
| Selenium | 7782-49-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.30 | MG/KG | U | 0.54 | 1 |
| Silver | 7440-22-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 4.3 | MG/KG | | 1.1 | 1 |
| Vanadium | 7440-62-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 61.1 | MG/KG | | 5.4 | 1 |
| Zinc | 7440-66-6 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 96.5 | MG/KG | | 2.1 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Client ID: B0WMM8

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 2.9 | MG/KG | | 1.0 | 1 |
| Barium | 7440-39-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 52.4 | MG/KG | | 20.7 | 1 |
| Beryllium | 7440-41-7 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.26 | MG/KG | B | 0.52 | 1 |
| Chromium | 7440-47-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 5.2 | MG/KG | | 1.0 | 1 |
| Cobalt | 7440-48-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 12.6 | MG/KG | | 5.2 | 1 |
| Copper | 7440-50-8 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 20.0 | MG/KG | | 2.6 | 1 |
| Lead | 7439-92-1 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 2.0 | MG/KG | | 0.31 | 1 |
| Nickel | 7440-02-0 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 6.7 | MG/KG | EN | 4.1 | 1 |
| Selenium | 7782-49-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.29 | MG/KG | U | 0.52 | 1 |
| Silver | 7440-22-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.09 | MG/KG | U | 1.0 | 1 |
| Vanadium | 7440-62-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 72.1 | MG/KG | | 5.2 | 1 |
| Zinc | 7440-66-6 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 43.5 | MG/KG | | 2.1 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: ICAP Metals
Method: EPA 6010
Matrix: SOLID

Client ID: B0WMM4

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7440-38-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 3.6 | MG/KG | | 1.1 | 1 |
| Barium | 7440-39-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 54.2 | MG/KG | | 22.6 | 1 |
| Beryllium | 7440-41-7 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.21 | MG/KG | B | 0.56 | 1 |
| Chromium | 7440-47-3 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 6.5 | MG/KG | | 1.1 | 1 |
| Cobalt | 7440-48-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 8.6 | MG/KG | | 5.6 | 1 |
| Copper | 7440-50-8 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 35.7 | MG/KG | | 2.8 | 1 |
| Lead | 7439-92-1 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 36.5 | MG/KG | | 0.34 | 1 |
| Nickel | 7440-02-0 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 6.7 | MG/KG | EN | 4.5 | 1 |
| Selenium | 7782-49-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.32 | MG/KG | U | 0.56 | 1 |
| Silver | 7440-22-4 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 0.92 | MG/KG | B | 1.1 | 1 |
| Vanadium | 7440-62-2 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 51.9 | MG/KG | | 5.6 | 1 |
| Zinc | 7440-66-6 | QCBLK210724-1 | 11/05/99 | 11/17/99 | 70.7 | MG/KG | | 2.3 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Mercury
Method: EPA 7471
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 0.14 | MG/KG | | 0.037 | 1 |
| B0WMM2 | 22449-001MS | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 114 | %REC | | | 1 |
| B0WMM2 | 22449-001MSD | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 84 | %REC | | | 1 |
| B0WMM6 | 22456-001 | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 0.55 | MG/KG | | 0.035 | 1 |
| B0WMM8 | 22502-001 | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 0.02 | MG/KG | U | 0.034 | 1 |
| B0WMM4 | 22514-001 | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 0.36 | MG/KG | | 0.037 | 1 |
| NA | QCLCS211041-1 | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 104 | %REC | | | 2 |
| NA | QCBLK211041-1 | Mercury | 7439-97-6 | QCBLK211041-1 | 11/09/99 | 11/09/99 | 0.017 | MG/KG | U | 0.033 | 1 |

Data is incomplete without Case Narrative

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: QUANTERRA_MO_____ Contract: 550.267___

Lab Code: ITMO__ Case No.: _____ SAS No.: _____ SDG No.: W02935_____

SOW No.: SW846

| EPA Sample No. | Lab Sample ID |
|---|---|
| B0WMM2 | 22449-001 |
| B0WMM2SD | 22449-001SD |
| B0WMM2S | 22449-001S |
| B0WMM4 | 22514-001 |
| B0WMM6 | 22456-001 |
| B0WMM8 | 22502-001 |

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: _____ Title: _____

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0WMM2

Lab Name: QUANTERRA_MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix (soil/water): SOIL Lab Sample ID: 22449-001

Level (low/med): LOW Date Received: 10/21/99

% Solids: 90.4

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 4.8 | | | P |
| 7440-39-3 | Barium | 81.0 | | | P |
| 7440-41-7 | Beryllium | 0.33 | B | | P |
| 7440-47-3 | Chromium | 10.2 | | | P |
| 7440-48-4 | Cobalt | 11.0 | | | P |
| 7440-50-8 | Copper | 16.2 | | | P |
| 7439-92-1 | Lead | 17.0 | | | P |
| 7439-97-6 | Mercury | 0.14 | | | CV |
| 7440-02-0 | Nickel | 10.2 | | EN | P |
| 7782-49-2 | Selenium | 0.31 | U | | P |
| 7440-22-4 | Silver | 1.0 | B | | P |
| 7440-62-2 | Vanadium | 56.1 | | | P |
| 7440-66-6 | Zinc | 90.1 | | | P |

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0WMM4

Lab Name: QUANTERRA_MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix (soil/water): SOIL Lab Sample ID: 22514-001

Level (low/med): LOW Date Received: 11/02/99

% Solids: 88.6

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 3.6 | | | P |
| 7440-39-3 | Barium | 54.2 | | | P |
| 7440-41-7 | Beryllium | 0.21 | B | | P |
| 7440-47-3 | Chromium | 6.5 | | | P |
| 7440-48-4 | Cobalt | 8.6 | | | P |
| 7440-50-8 | Copper | 35.7 | | | P |
| 7439-92-1 | Lead | 36.5 | | | P |
| 7439-97-6 | Mercury | 0.36 | | | CV |
| 7440-02-0 | Nickel | 6.7 | | EN | P |
| 7782-49-2 | Selenium | 0.32 | U | | P |
| 7440-22-4 | Silver | 0.92 | B | | P |
| 7440-62-2 | Vanadium | 51.9 | | | P |
| 7440-66-6 | Zinc | 70.7 | | | P |

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0WMM6

Lab Name: QUANTERRA MO  Contract: 550.267
Lab Code: ITMO  Case No.:  SAS No.:  SDG No.: W02935
Matrix (soil/water): SOIL  Lab Sample ID: 22456-001
Level (low/med): LOW  Date Received: 10/22/99
% Solids: 93.3

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 2.3 | | | P |
| 7440-39-3 | Barium | 80.6 | | | P |
| 7440-41-7 | Beryllium | 0.29 | B | | P |
| 7440-47-3 | Chromium | 10.9 | | | P |
| 7440-48-4 | Cobalt | 11.0 | | | P |
| 7440-50-8 | Copper | 16.2 | | | P |
| 7439-92-1 | Lead | 68.9 | | | P |
| 7439-97-6 | Mercury | 0.55 | | | CV |
| 7440-02-0 | Nickel | 9.2 | | EN | P |
| 7782-49-2 | Selenium | 0.30 | U | | P |
| 7440-22-4 | Silver | 4.3 | | | P |
| 7440-62-2 | Vanadium | 61.1 | | | P |
| 7440-66-6 | Zinc | 96.5 | | | P |

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

Comments:

FORM I - IN

SW-846

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B0WMM8

Lab Name: QUANTERRA_MO Contract: 550.267

Lab Code: ITMO Case No.: SAS No.: SDG No.: W02935

Matrix (soil/water): SOIL Lab Sample ID: 22502-001

Level (low/med): LOW Date Received: 10/28/99

% Solids: 96.6

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 2.9 | | | P |
| 7440-39-3 | Barium | 52.4 | | | P |
| 7440-41-7 | Beryllium | 0.26 | B | | P |
| 7440-47-3 | Chromium | 5.2 | | | P |
| 7440-48-4 | Cobalt | 12.6 | | | P |
| 7440-50-8 | Copper | 20.0 | | | P |
| 7439-92-1 | Lead | 2.0 | | | P |
| 7439-97-6 | Mercury | 0.02 | U | | CV |
| 7440-02-0 | Nickel | 6.7 | | EN | P |
| 7782-49-2 | Selenium | 0.29 | U | | P |
| 7440-22-4 | Silver | 0.09 | U | | P |
| 7440-62-2 | Vanadium | 72.1 | | | P |
| 7440-66-6 | Zinc | 43.5 | | | P |

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

SW-846

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: AMMONIA
Method: EPA 350.1
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | Ammonia | NH3-N | QCBLK210219-1 | 10/29/99 | 10/29/99 | 0.55 | MG/KG | U | 0.55 | 1 |
| B0WMM2 | 22449-001DUP | Ammonia | NH3-N | QCBLK210219-1 | 10/29/99 | 10/29/99 | 0.55 | MG/KG | U | 0.55 | 1 |
| B0WMM2 | 22449-001MS | Ammonia | NH3-N | QCBLK210219-1 | 10/29/99 | 10/29/99 | 92 | %REC | | | 1 |
| B0WMM6 | 22456-001 | Ammonia | NH3-N | QCBLK210219-1 | 10/29/99 | 10/29/99 | 0.53 | MG/KG | U | 0.53 | 1 |
| NA | QCBLK210219-1 | Ammonia | NH3-N | QCBLK210219-1 | 10/29/99 | 10/29/99 | 0.50 | MG/KG | U | 0.50 | 1 |
| NA | QCLCS210219-1 | Ammonia | NH3-N | QCBLK210219-1 | 10/29/99 | 10/29/99 | 96 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: AMMONIA
Method: EPA 350.1
Matrix: SOLID

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM8 | 22502-001 | Ammonia | NH3-N | QCBLK211846-1 | 11/24/99 | 11/24/99 | 0.52 | MG/KG | U | 0.52 | 1 |
| B0WMM4 | 22514-001 | Ammonia | NH3-N | QCBLK211846-1 | 11/24/99 | 11/24/99 | 0.56 | MG/KG | U | 0.56 | 1 |
| NA | QCBLK211846-1 | Ammonia | NH3-N | QCBLK211846-1 | 11/24/99 | 11/24/99 | 0.50 | MG/KG | U | 0.50 | 1 |
| NA | QCLCS211846-1 | Ammonia | NH3-N | QCBLK211846-1 | 11/24/99 | 11/24/99 | 96 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Anions
Method: EPA 300.0
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Fluoride | 16984-48-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 1.96 | MG/KG | | 1.10 | 1 |
| Chloride | 16887-00-6 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 12.0 | MG/KG | | 2.20 | 1 |
| Nitrite | NO2-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 0.22 | MG/KG | U | 0.22 | 1 |
| Nitrate | NO3-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 40.1 | MG/KG | | 1.10 | 5 |
| O-phosphate-P | 14265-44-2 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 5.50 | MG/KG | U | 5.50 | 1 |
| Sulfate | 14808-79-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 247 | MG/KG | | 27.5 | 5 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Anions
Method: EPA 300.0
Matrix: SOLID

Client ID: B0WMM2

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Quanterra ID : 22449-001DUP

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Fluoride | 16984-48-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 1.57 | MG/KG | | 1.10 | 1 |
| Chloride | 16887-00-6 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 10.7 | MG/KG | | 2.19 | 1 |
| Nitrite | NO2-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 0.22 | MG/KG | U | 0.22 | 1 |
| Nitrate | NO3-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 35.9 | MG/KG | | 1.10 | 5 |
| O-phosphate-P | 14265-44-2 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 5.48 | MG/KG | U | 5.48 | 1 |
| Sulfate | 14808-79-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 219 | MG/KG | | 27.4 | 5 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Anions
Method: EPA 300.0
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

Client ID: B0WMM2

Quanterra ID : 22449-001MS

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Fluoride | 16984-48-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 77 | %REC | | | 1 |
| Chloride | 16887-00-6 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 121 | %REC | | | 10 |
| Nitrite | NO2-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 115 | %REC | | | 10 |
| Nitrate | NO3-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 104 | %REC | | | 10 |
| O-phosphate-P | 14265-44-2 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 97 | %REC | | | 1 |
| Sulfate | 14808-79-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 111 | %REC | | | 10 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Anions
Method: EPA 300.0
Matrix: SOLID

Client ID: B0WMM6

Sample Date : 10/21/99
Receipt Date : 10/22/99
Report Date : 12/29/99

Quanterra ID : 22456-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Fluoride | 16984-48-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 1.39 | MG/KG | | 1.07 | 1 |
| Chloride | 16887-00-6 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 3.97 | MG/KG | | 2.13 | 1 |
| Nitrite | NO2-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 0.21 | MG/KG | U | 0.21 | 1 |
| Nitrate | NO3-N | QCBLK210707-1 | 11/02/99 | 11/02/99 | 33.0 | MG/KG | | 1.07 | 5 |
| O-phosphate-P | 14265-44-2 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 5.33 | MG/KG | U | 5.33 | 1 |
| Sulfate | 14808-79-8 | QCBLK210707-1 | 11/02/99 | 11/02/99 | 65.2 | MG/KG | | 5.33 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Anions
Method: EPA 300.0
Matrix: SOLID

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

Client ID: B0WMM8

Quanterra ID : 22502-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Fluoride | 16984-48-8 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 1.32 | MG/KG | | 1.03 | 1 |
| Chloride | 16887-00-6 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 2.26 | MG/KG | | 2.07 | 1 |
| Nitrite | NO2-N | QCBLK211908-1 | 11/23/99 | 11/23/99 | 0.21 | MG/KG | U | 0.21 | 1 |
| Nitrate | NO3-N | QCBLK211908-1 | 11/23/99 | 11/23/99 | 13.7 | MG/KG | | 0.41 | 2 |
| O-phosphate-P | 14265-44-2 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 5.17 | MG/KG | U | 5.17 | 1 |
| Sulfate | 14808-79-8 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 90.8 | MG/KG | | 5.17 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Anions
Method: EPA 300.0
Matrix: SOLID

Client ID: B0WMM4

Sample Date : 10/28/99
Receipt Date : 11/02/99
Report Date : 12/29/99

Quanterra ID : 22514-001

| Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Fluoride | 16984-48-8 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 1.12 | MG/KG | U | 1.12 | 1 |
| Chloride | 16887-00-6 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 2.28 | MG/KG | | 2.25 | 1 |
| Nitrite | NO2-N | QCBLK211908-1 | 11/23/99 | 11/23/99 | 0.22 | MG/KG | U | 0.22 | 1 |
| Nitrate | NO3-N | QCBLK211908-1 | 11/23/99 | 11/23/99 | 24.5 | MG/KG | | 1.12 | 5 |
| O-phosphate-P | 14265-44-2 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 5.61 | MG/KG | U | 5.61 | 1 |
| Sulfate | 14808-79-8 | QCBLK211908-1 | 11/23/99 | 11/23/99 | 34.1 | MG/KG | | 5.61 | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: CYANIDE
Method: EPA 9010
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | Cyanide | 57-12-5 | QCBLK211817-1 | 11/01/99 | 11/03/99 | 0.25 | MG/KG | U | 0.25 | 1 |
| B0WMM2 | 22449-001DUP | Cyanide | 57-12-5 | QCBLK211817-1 | 11/01/99 | 11/03/99 | 0.27 | MG/KG | U | 0.27 | 1 |
| B0WMM2 | 22449-001MS | Cyanide | 57-12-5 | QCBLK211817-1 | 11/01/99 | 11/03/99 | 98 | %REC | | | 1 |
| B0WMM6 | 22456-001 | Cyanide | 57-12-5 | QCBLK211817-1 | 11/01/99 | 11/03/99 | 11.2 | MG/KG | | 0.27 | 1 |
| NA | QCBLK211817-1 | Cyanide | 57-12-5 | QCBLK211817-1 | 11/01/99 | 11/03/99 | 0.25 | MG/KG | U | 0.25 | 1 |
| NA | QCLCS211817-1 | Cyanide | 57-12-5 | QCBLK211817-1 | 11/01/99 | 11/03/99 | 95 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: CYANIDE
Method: EPA 9010
Matrix: SOLID

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM8 | 22502-001 | Cyanide | 57-12-5 | QCBLK211815-1 | 11/09/99 | 11/10/99 | 0.24 | MG/KG | U | 0.24 | 1 |
| B0WMM4 | 22514-001 | Cyanide | 57-12-5 | QCBLK211815-1 | 11/09/99 | 11/10/99 | 0.28 | MG/KG | U | 0.28 | 1 |
| NA | QCBLK211815-1 | Cyanide | 57-12-5 | QCBLK211815-1 | 11/09/99 | 11/10/99 | 0.25 | MG/KG | U | 0.25 | 1 |
| NA | QCLCS211815-1 | Cyanide | 57-12-5 | QCBLK211815-1 | 11/09/99 | 11/10/99 | 97 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Hexavalent Chromium
Method: SW846 7196
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | Hexavalent Chro | 18540-29-9 | QCBLK209721-1 | 10/23/99 | 10/23/99 | 0.11 | UG/G | U | 0.11 | 1 |
| B0WMM2 | 22449-001MS | Hexavalent Chro | 18540-29-9 | QCBLK209721-1 | 10/23/99 | 10/23/99 | 78 | %REC | | | 1 |
| B0WMM2 | 22449-001MSD | Hexavalent Chro | 18540-29-9 | QCBLK209721-1 | 10/23/99 | 10/23/99 | 78 | %REC | | | 1 |
| B0WMM6 | 22456-001 | Hexavalent Chro | 18540-29-9 | QCBLK209721-1 | 10/23/99 | 10/23/99 | 0.11 | UG/G | U | 0.11 | 1 |
| NA | QCBLK209721-1 | Hexavalent Chro | 18540-29-9 | QCBLK209721-1 | 10/23/99 | 10/23/99 | 0.10 | UG/G | U | 0.10 | 1 |
| NA | QCLCS209721-1 | Hexavalent Chro | 18540-29-9 | QCBLK209721-1 | 10/23/99 | 10/23/99 | 104 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: Hexavalent Chromium
Method: SW846 7196
Matrix: SOLID

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM8 | 22502-001 | Hexavalent Chro | 18540-29-9 | QCBLK212381-1 | 12/17/99 | 12/17/99 | 0.10 | UG/G | U | 0.10 | 1 |
| B0WMM4 | 22514-001 | Hexavalent Chro | 18540-29-9 | QCBLK212381-1 | 12/17/99 | 12/17/99 | 0.11 | UG/G | U | 0.11 | 1 |
| NA | QCBLK212381-1 | Hexavalent Chro | 18540-29-9 | QCBLK212381-1 | 12/17/99 | 12/17/99 | 0.10 | UG/G | U | 0.10 | 1 |
| NA | QCLCS212381-1 | Hexavalent Chro | 18540-29-9 | QCBLK212381-1 | 12/17/99 | 12/17/99 | 125 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: NO3-NO2
Method: EPA 353.1
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | Nitrate/Nitrite | NO2+NO3-N | QCBLK210217-1 | 10/29/99 | 10/29/99 | 39.6 | MG/KG | | 5.49 | 10 |
| B0WMM2 | 22449-001DUP | Nitrate/Nitrite | NO2+NO3-N | QCBLK210217-1 | 10/29/99 | 10/29/99 | 42.2 | MG/KG | | 5.51 | 10 |
| B0WMM2 | 22449-001MS | Nitrate/Nitrite | NO2+NO3-N | QCBLK210217-1 | 10/29/99 | 10/29/99 | 114 | %REC | | | 10 |
| B0WMM6 | 22456-001 | Nitrate/Nitrite | NO2+NO3-N | QCBLK210217-1 | 10/29/99 | 10/29/99 | 33.4 | MG/KG | | 5.34 | 10 |
| NA | QCBLK210217-1 | Nitrate/Nitrite | NO2+NO3-N | QCBLK210217-1 | 10/29/99 | 10/29/99 | 0.50 | MG/KG | U | 0.50 | 1 |
| NA | QCLCS210217-1 | Nitrate/Nitrite | NO2+NO3-N | QCBLK210217-1 | 10/29/99 | 10/29/99 | 112 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: NO3-NO2
Method: EPA 353.1
Matrix: SOLID

Sample Date : 10/27/99
Receipt Date : 10/28/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM8 | 22502-001 | Nitrate/Nitrite | NO2+NO3-N | QCBLK211848-1 | 11/24/99 | 11/24/99 | 11.9 | MG/KG | | 1.03 | 2 |
| B0WMM4 | 22514-001 | Nitrate/Nitrite | NO2+NO3-N | QCBLK211848-1 | 11/24/99 | 11/24/99 | 25.5 | MG/KG | | 2.82 | 5 |
| NA | QCBLK211848-1 | Nitrate/Nitrite | NO2+NO3-N | QCBLK211848-1 | 11/24/99 | 11/24/99 | 0.50 | MG/KG | U | 0.50 | 1 |
| NA | QCLCS211848-1 | Nitrate/Nitrite | NO2+NO3-N | QCBLK211848-1 | 11/24/99 | 11/24/99 | 108 | %REC | | | 1 |

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: pH
Method: EPA 9045
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | pH | PH | QCBLK211249-1 | 11/11/99 | 11/11/99 | 8.03 | PH | | | 1 |
| B0WMM2 | 22449-001DUP | pH | PH | QCBLK211249-1 | 11/11/99 | 11/11/99 | 7.99 | PH | | | 1 |
| B0WMM6 | 22456-001 | pH | PH | QCBLK211249-1 | 11/11/99 | 11/11/99 | 8.25 | PH | | | 1 |
| B0WMM8 | 22502-001 | pH | PH | QCBLK211249-1 | 11/11/99 | 11/11/99 | 8.77 | PH | | | 1 |
| B0WMM4 | 22514-001 | pH | PH | QCBLK211249-1 | 11/11/99 | 11/11/99 | 7.73 | PH | | | 1 |
| NA | QCBLK211249-1 | pH | PH | QCBLK211249-1 | 11/11/99 | 11/11/99 | 5.99 | PH | | | 1 |

Sample 22449-001 analysis time : 11:50
Sample 22449-001DUP analysis time : 11:51
Sample 22456-001 analysis time : 11:35
Sample 22502-001 analysis time : 11:40
Sample 22514-001 analysis time : 11:37
Sample QCBLK211249-1 analysis time : 10:43

Data is incomplete without Case Narrative

Bechtel Hanford Inc.
3350 George Washington Way
MSIN H9-03
Richland, WA 99352-1613

Project: Bechtel Hanford Inc.

Category: SULFIDE
Method: EPA 9030
Matrix: SOLID

Sample Date : 10/20/99
Receipt Date : 10/21/99
Report Date : 12/29/99

| Client ID | Quanterra ID | Analyte | CAS Number | Blank Sample Name | Prep. Date | Analyses Date | Result | Unit | Qual. | Detection Limit | Dil. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B0WMM2 | 22449-001 | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 11.8 | UG/G | U | 11.8 | 1 |
| B0WMM2 | 22449-001DUP | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 11.8 | UG/G | U | 11.8 | 1 |
| B0WMM2 | 22449-001MS | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 45 | %REC | | | 1 |
| B0WMM6 | 22456-001 | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 11.3 | UG/G | U | 11.3 | 1 |
| B0WMM8 | 22502-001 | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 11.0 | UG/G | U | 11.0 | 1 |
| B0WMM4 | 22514-001 | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 12.0 | UG/G | U | 12.0 | 1 |
| NA | QCBLK211533-1 | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 10.8 | UG/G | U | 10.8 | 1 |
| NA | QCLCS211533-1 | Sulfide | 18496-25-8 | QCBLK211533-1 | 11/12/99 | 11/12/99 | 95 | %REC | | | 1 |

Data is incomplete without Case Narrative

ORIGINAL Dayes

SDR # B00-018
Revision #: 0
Date Initiated: 11/04/99

# SAMPLE DISPOSITION RECORD

SAF: B99-078
OU: 200-CW-1
Project ID: 200-CW-1
Task ID: 1
Sampling Event: 200 Area Source Characterization 200-CW-1 OU

Laboratory: Quanterra Incorporated

Task Manager: M.E. Todd

Sampling Information:
Number of Samples: 1
ID Numbers: B0WMM4
Matrix: Soil
Collection Date: 10/28/99

Issue Background:

Class: ☒ Project Data Use ☐ General Laboratory Direction ☐ Validation Direction ☐ Sample Management Direction

Type: Incorrect Sample Preservation

Description: Sample Arrived at Laboratory at 1°C

Disposition:

Description: The laboratory measured the ambient interior temperature of the cooler at 1°C, which is outside the 4°C ± 2°C temperature range requirement. No changes in analytical scope for this sample were made.

Justification: Although the temperature requirement was not met for this sample, the data are usable for all intended data uses. This sample preservation issue will not result in analysis or validation qualifications.

Approval Signatures:

S. J. Trent — 11/19/99
Project Coordinator (Print/Sign Name) — Date

M. E. Todd — 11/22/99
Task Manager (Print/Sign Name) — Date

Quanterra
2800 George Washington Way
Richland, Washington 99352-1613

509 375-3131 Telephone
509 375-5590 Fax

# CERTIFICATE OF ANALYSIS

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

February 1, 2000

Attention: Joan Kessner

FEB 2000

| | | |
|---|---|---|
| SAF Number | : | B99-078 |
| Date SDG Closed | : | November 4, 1999 |
| Number of Samples | : | Four (4) |
| Sample Type | : | Soil |
| SDG Number | : | W02935 |
| Data Deliverable | : | Summary |

## I. Introduction

Between October 21, 1999 and November 1, 1999, four soil samples were received at the Quanterra Richland Laboratory (QRL) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

| QESRL ID# | BHI ID# | MATRIX | DATE OF RECEIPT |
|---|---|---|---|
| 9D40C010 | B0WMM2 | SOIL | 10/21/99 |
| 9D426510 | B0WMM6 | SOIL | 10/22/99 |
| 9D494310 | B0WMM8 | SOIL | 10/28/99 |
| 9D4E6M10 | B0WMM4 | SOIL | 11/1/99 |

## II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

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

Thorium-232 by method RICH-RC-5011
**Gamma Spectroscopy**
Gamma Scan by method RICH-RC-5017
**Total Uranium**
Total Uranium by method RICH-RC-5058

III. Quality Control

The analytical results for each analysis performed under SDG W02935 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

**Gas Proportional Counting**
Total Strontium by method RICH-RC-5006:
The MDA achieved for sample B0WMM6 does not meet the CRDL due to a reduced volume analyzed based on an elevated beta screen result. The detected activity exceeds the achieved MDA, therefore the data are accepted for reporting. Except as noted, the LCS, batch blank, samples and sample duplicate (B0WMM8) results are within contractual requirements.

**Alpha Spectroscopy**
Plutonium-238, -239/40 by method RICH-RC-5010:
The MDA achieved for sample B0WMM6 does not meet the CRDL due to a reduced volume analyzed based on an elevated beta screen result. The detected activity does not exceed the achieved MDA for this analysis, however, the results are reported with the MDAs achieved due to the activity level of the sample. Except as noted, the LCS, batch blank, samples and sample duplicate (B0WMM4) results are within contractual requirements.

Americium-241 by method RICH-RC-5080:
The MDA achieved for sample B0WMM6 does not meet the CRDL due to a reduced volume analyzed based on an elevated beta screen result. The detected activity exceeds the achieved MDA, therefore the data are accepted for reporting. Except as noted, the LCS, batch blank, samples and sample duplicate (B0WMM4) results are within contractual requirements.

Uranium-234, -235, -238 by method RICH-RC-5079:
The MDA achieved for sample B0WMM6 does not meet the CRDL due to a reduced volume analyzed based on an elevated beta screen result. The detected activity does not exceed the

achieved MDA for this analysis, however, the results are reported with the MDAs achieved due to the activity level of the sample. Except as noted, the LCS, batch blank, samples and sample duplicate (B0WMM2) results are within contractual requirements.

Thorium-232 by method RICH-RC-5011:
The MDA achieved for sample B0WMM6 does not meet the CRDL due to a reduced volume analyzed based on an elevated beta screen result. The detected activity does not exceed the achieved MDA for this analysis, however, the results are reported with the MDAs achieved due to the activity level of the sample. Except as noted, the LCS, batch blank, samples and sample duplicate (B0WMM4) results are within contractual requirements.

**Gamma Spectroscopy**
Gamma Scan by method RICH-RC-5017:
The MDAs achieved for samples B0WMM2 and B0WMM6 do not meet the CRDL due to matrix effects. Elevated Cs-137 detected in these samples increased the sample background. The detected activity for Ra-226, Ra-228 and Cs-137 exceed the achieved MDAs; the data are accepted with the MDAs achieved for Eu-152, Eu-154 and Eu-155. Except as noted, the LCS, batch blank, samples and sample duplicate (B0WMM4) results are within contractual requirements.

**Total Uranium**
Total Uranium by method RICH-RC-5058:
The matrix spike recovery was below acceptance limits. The sample and matrix spike were reanalyzed. The reanalysis recovery for the matrix spike was within limits, therefore the data are accepted for reporting. Except as noted, the LCS, batch blank, samples, sample duplicate (B0WMM2) and sample matrix spike (B0WMM4) results are within contractual requirements.

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

Reviewed and approved:

Jackie Waddell

Jackie Waddell
Project Manager

Quanterra

# SAMPLE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | 9D40C010 | MATRIX: | SOIL |
| CLIENT ID: | B0WMM2 | DATE RECEIVED: | 10/21/99 2:05:00 PM |

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 1.64E+00 | | 0.0E+00 | 2.7E-01 | 7.29E-05 | ug/g | | RICHRC5058 |
| AM-241 | 2.84E-01 | J | 1.1E-01 | 1.2E-01 | 5.51E-02 | pCi/g | 76.74% | RICHRC5080 |
| PU-238 | 1.58E-02 | U | 3.2E-02 | 3.2E-02 | 4.27E-02 | pCi/g | 54.49% | RICHRC5010 |
| PU239/40 | 2.04E-01 | J | 1.1E-01 | 1.2E-01 | 4.26E-02 | pCi/g | 54.49% | RICHRC5010 |
| TH-228 | 8.87E-01 | J | 2.3E-01 | 3.1E-01 | 1.20E-01 | pCi/g | 86.04% | RICHRC5011 |
| TH-230 | 1.10E+00 | J | 2.4E-01 | 3.6E-01 | 5.25E-02 | pCi/g | 86.04% | RICHRC5011 |
| TH-232 | 9.78E-01 | J | 2.3E-01 | 3.3E-01 | 5.25E-02 | pCi/g | 86.04% | RICHRC5011 |
| U-234 | 1.11E+00 | | 2.3E-01 | 3.1E-01 | 9.74E-02 | pCi/g | 74.02% | RICHRC5079 |
| U-235 | 2.15E-02 | U | 3.5E-02 | 3.5E-02 | 6.09E-02 | pCi/g | 74.02% | RICHRC5079 |
| U-238 | 9.43E-01 | J | 2.2E-01 | 2.7E-01 | 8.39E-02 | pCi/g | 74.02% | RICHRC5079 |
| AM-241 | 1.33E-01 | U | 9.9E-02 | 9.9E-02 | 1.44E-01 | pCi/g | | RICHRC5017 |
| CO-60 | 1.64E-02 | U | 1.3E-02 | 1.3E-02 | 2.29E-02 | pCi/g | | RICHRC5017 |
| CS-137 | 2.56E+02 | | 2.6E+01 | 2.6E+01 | 6.46E-02 | pCi/g | | RICHRC5017 |
| EU-152 | -1.41E-03 | U | 2.2E-01 | 2.2E-01 | 3.56E-01 | pCi/g | | RICHRC5017 |
| EU-154 | 3.02E-01 | U | 7.0E-02 | 7.0E-02 | 9.23E-02 | pCi/g | | RICHRC5017 |
| EU-155 | 2.39E-01 | U | 1.5E-01 | 1.5E-01 | 2.41E-01 | pCi/g | | RICHRC5017 |
| RA-226 | 7.18E-01 | | 1.5E-01 | 1.5E-01 | 1.51E-01 | pCi/g | | RICHRC5017 |
| RA-228 | 9.02E-01 | U | 1.2E-01 | 1.2E-01 | 1.51E-01 | pCi/g | | RICHRC5017 |
| STRONTIUM | 1.33E+01 | | 1.1E+00 | 4.0E+00 | 7.72E-01 | pCi/g | 81.70% | RICHRC5006 |

**Number of Results:** 19

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result <

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra

# SAMPLE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | 9D426510 | MATRIX: | SOIL |
| CLIENT ID: | B0WMM6 | DATE RECEIVED: | 10/22/99 1:30:00 PM |

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 5.31E+00 | | 0.0E+00 | 1.6E+00 | 7.29E-05 | ug/g | | RICHRC5058 |
| AM-241 | 8.13E+00 | | 7.4E+00 | 7.5E+00 | 6.65E+00 | pCi/g | 66.86% | RICHRC5080 |
| PU-238 | -1.15E+00 | U | 8.7E-01 | 9.0E-01 | 1.27E+01 | pCi/g | 57.86% | RICHRC5010 |
| PU239/40 | 0.00E+00 | U | 0.0E+00 | 5.0E+00 | 5.57E+00 | pCi/g | 57.86% | RICHRC5010 |
| TH-228 | 2.01E+00 | U | 4.8E+00 | 4.9E+00 | 1.10E+01 | pCi/g | 74.05% | RICHRC5011 |
| TH-230 | -1.77E-01 | U | 3.5E-01 | 3.6E-01 | 8.89E+00 | pCi/g | 74.05% | RICHRC5011 |
| TH-232 | 0.00E+00 | U | 0.0E+00 | 5.4E+00 | 5.98E+00 | pCi/g | 74.05% | RICHRC5011 |
| U-234 | 5.45E-02 | U | 2.8E+00 | 2.8E+00 | 9.93E+00 | pCi/g | 87.91% | RICHRC5079 |
| U-235 | -1.09E-01 | U | 2.2E-01 | 2.2E-01 | 5.50E+00 | pCi/g | 87.91% | RICHRC5079 |
| U-238 | -6.56E-01 | U | 5.4E-01 | 5.5E-01 | 8.11E+00 | pCi/g | 87.91% | RICHRC5079 |
| AM-241 | 1.04E+00 | U | 1.8E+00 | 1.8E+00 | 2.94E+00 | pCi/g | | RICHRC5017 |
| CO-60 | 1.51E-02 | U | 1.9E-02 | 1.9E-02 | 3.32E-02 | pCi/g | | RICHRC5017 |
| CS-137 | 8.55E+02 | | 8.6E+01 | 8.6E+01 | 1.90E-01 | pCi/g | | RICHRC5017 |
| EU-152 | 4.08E-01 | U | 4.8E-01 | 4.8E-01 | 7.91E-01 | pCi/g | | RICHRC5017 |
| EU-154 | 1.93E+00 | | 2.4E-01 | 2.4E-01 | 1.09E-01 | pCi/g | | RICHRC5017 |
| EU-155 | 1.36E+00 | U | 7.0E-01 | 7.0E-01 | 1.10E+00 | pCi/g | | RICHRC5017 |
| RA-226 | 5.11E-01 | | 2.4E-01 | 2.4E-01 | 3.77E-01 | pCi/g | | RICHRC5017 |
| RA-228 | 6.21E-01 | U | 1.9E-01 | 1.9E-01 | 2.32E-01 | pCi/g | | RICHRC5017 |
| STRONTIUM | 1.56E+04 | | 6.4E+02 | 4.5E+03 | 2.32E+02 | pCi/g | 92.20% | RICHRC5006 |

**Number of Results:** 19

Quanterra

# SAMPLE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | 9D494310 | MATRIX: | SOIL |
| CLIENT ID: | B0WMM8 | DATE RECEIVED: | 10/28/99 1:45:00 PM |

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 1.74E+00 | | 0.0E+00 | 2.8E-01 | 7.29E-05 | ug/g | | RICHRC5058 |
| AM-241 | 0.00E+00 | U | 0.0E+00 | 1.1E-02 | 1.17E-02 | pCi/g | 86.51% | RICHRC5080 |
| PU-238 | -6.61E-04 | U | 1.3E-03 | 1.3E-03 | 3.33E-02 | pCi/g | 48.81% | RICHRC5010 |
| PU239/40 | -6.60E-04 | U | 1.3E-03 | 1.3E-03 | 3.32E-02 | pCi/g | 48.81% | RICHRC5010 |
| TH-228 | 7.92E-01 | J | 1.6E-01 | 2.5E-01 | 6.52E-02 | pCi/g | 81.06% | RICHRC5011 |
| TH-230 | 8.01E-01 | J | 1.5E-01 | 2.5E-01 | 2.83E-02 | pCi/g | 81.06% | RICHRC5011 |
| TH-232 | 9.55E-01 | J | 1.6E-01 | 2.8E-01 | 2.83E-02 | pCi/g | 81.06% | RICHRC5011 |
| U-234 | 8.40E-01 | J | 1.3E-01 | 1.9E-01 | 2.65E-02 | pCi/g | 85.33% | RICHRC5079 |
| U-235 | 2.36E-02 | U | 2.2E-02 | 2.3E-02 | 2.47E-02 | pCi/g | 85.33% | RICHRC5079 |
| U-238 | 8.26E-01 | J | 1.3E-01 | 1.9E-01 | 2.47E-02 | pCi/g | 85.33% | RICHRC5079 |
| AM-241 | -1.07E-02 | U | 4.2E-02 | 4.2E-02 | 6.97E-02 | pCi/g | | RICHRC5017 |
| CO-60 | 2.62E-03 | U | 1.1E-02 | 1.1E-02 | 1.89E-02 | pCi/g | | RICHRC5017 |
| CS-137 | 2.08E-03 | U | 1.1E-02 | 1.1E-02 | 1.85E-02 | pCi/g | | RICHRC5017 |
| EU-152 | -1.65E-02 | U | 3.4E-02 | 3.4E-02 | 4.68E-02 | pCi/g | | RICHRC5017 |
| EU-154 | 3.62E-03 | U | 3.5E-02 | 3.5E-02 | 5.94E-02 | pCi/g | | RICHRC5017 |
| EU-155 | 3.89E-02 | U | 3.0E-02 | 3.0E-02 | 5.10E-02 | pCi/g | | RICHRC5017 |
| RA-226 | 4.10E-01 | | 5.9E-02 | 5.9E-02 | 3.23E-02 | pCi/g | | RICHRC5017 |
| RA-228 | 5.78E-01 | | 1.1E-01 | 1.1E-01 | 6.71E-02 | pCi/g | | RICHRC5017 |
| STRONTIUM | 8.76E-02 | U | 6.1E-02 | 6.6E-02 | 1.20E-01 | pCi/g | 84.30% | RICHRC5006 |

**Number of Results:** 19

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result <

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra

# SAMPLE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | 9D4E6M10 | MATRIX: | SOIL |
| CLIENT ID: | B0WMM4 | DATE RECEIVED: | 11/1/99 11:50:00 AM |

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 1.88E+00 | | 0.0E+00 | 3.0E-01 | 7.29E-05 | ug/g | | RICHRC5058 |
| AM-241 | 3.96E-01 | J | 8.8E-02 | 1.1E-01 | 1.97E-02 | pCi/g | 80.05% | RICHRC5080 |
| PU-238 | 6.03E-02 | J | 3.8E-02 | 4.0E-02 | 1.63E-02 | pCi/g | 52.30% | RICHRC5010 |
| PU239/40 | 3.14E+00 | | 2.8E-01 | 6.2E-01 | 2.75E-02 | pCi/g | 52.30% | RICHRC5010 |
| TH-228 | 1.25E+00 | J | 1.8E-01 | 3.5E-01 | 5.72E-02 | pCi/g | 84.41% | RICHRC5011 |
| TH-230 | 1.03E+00 | J | 1.6E-01 | 3.0E-01 | 3.13E-02 | pCi/g | 84.41% | RICHRC5011 |
| TH-232 | 1.17E+00 | J | 1.7E-01 | 3.3E-01 | 1.70E-02 | pCi/g | 84.41% | RICHRC5011 |
| U-234 | 1.05E+00 | | 1.5E-01 | 2.3E-01 | 3.12E-02 | pCi/g | 84.35% | RICHRC5079 |
| U-235 | 3.99E-02 | J | 2.9E-02 | 2.9E-02 | 2.03E-02 | pCi/g | 84.35% | RICHRC5079 |
| U-238 | 9.71E-01 | J | 1.4E-01 | 2.2E-01 | 2.85E-02 | pCi/g | 84.35% | RICHRC5079 |
| AM-241 | 2.20E-01 | U | 2.0E-01 | 2.0E-01 | 3.27E-01 | pCi/g | | RICHRC5017 |
| CO-60 | -8.27E-03 | U | 1.4E-02 | 1.4E-02 | 2.33E-02 | pCi/g | | RICHRC5017 |
| CS-137 | 9.50E+00 | | 9.6E-01 | 9.6E-01 | 3.00E-02 | pCi/g | | RICHRC5017 |
| EU-152 | -7.19E-02 | U | 6.6E-02 | 6.6E-02 | 9.86E-02 | pCi/g | | RICHRC5017 |
| EU-154 | -2.35E-02 | U | 4.7E-02 | 4.7E-02 | 7.71E-02 | pCi/g | | RICHRC5017 |
| EU-155 | 2.18E-02 | U | 6.1E-02 | 6.1E-02 | 1.05E-01 | pCi/g | | RICHRC5017 |
| RA-226 | 7.30E-01 | | 1.0E-01 | 1.0E-01 | 5.62E-02 | pCi/g | | RICHRC5017 |
| RA-228 | 8.74E-01 | | 1.3E-01 | 1.3E-01 | 8.15E-02 | pCi/g | | RICHRC5017 |
| STRONTIUM | 1.59E-01 | J | 7.3E-02 | 8.6E-02 | 1.31E-01 | pCi/g | 86.10% | RICHRC5006 |

**Number of Results:** 19

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result <

Quanterra Analytical Services, Inc
rptChemRadSample; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D40C01AR | MATRIX: | SOIL |
| CLIENT ID: | B0WMM2 DUP | DATE RECEIVED: | 10/21/99 2:05:00 P |
| ORIG LAB SAMPLE ID: | 9D40C010 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| U-234 | 1.24E+00 | | 2.2E-01 | 3.1E-01 | 6.86E-02 | pCi/g | 86.82% | RICHRC5079 | 1.11E+00 | 11.24% |
| U-235 | 5.67E-02 | J | 4.9E-02 | 5.0E-02 | 5.33E-02 | pCi/g | 86.82% | RICHRC5079 | 2.15E-02 | 90.05% |
| U-238 | 1.12E+00 | | 2.1E-01 | 2.9E-01 | 5.64E-02 | pCi/g | 86.82% | RICHRC5079 | 9.43E-01 | 17.53% |

Number of Results: 3

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D40C01CR | MATRIX: | SOIL |
| CLIENT ID: | B0WMM2 DUP | DATE RECEIVED: | 10/21/99 2:05:00 P |
| ORIG LAB SAMPLE ID: | 9D40C010 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 1.63E+00 | | 0.0E+00 | 2.6E-01 | 7.29E-05 | ug/g | | RICHRC5058 | 1.64E+00 | 0.66% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D49431AR | MATRIX: | SOIL |
| CLIENT ID: | B0WMM8 DUP | DATE RECEIVED: | 10/28/99 1:45:00 P |
| ORIG LAB SAMPLE ID: | 9D494310 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| STRONTIUM | 6.63E-02 | U | 6.5E-02 | 6.8E-02 | 1.36E-01 | pCi/g | 77.40% | RICHRC5006 | 8.76E-02 | 27.66% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4E6M19R | MATRIX: | SOIL |
| CLIENT ID: | B0WMM4 DUP | DATE RECEIVED: | 11/1/99 11:50:00 A |
| ORIG LAB SAMPLE ID: | 9D4E6M10 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| TH-228 | 1.28E+00 | J | 2.0E-01 | 3.7E-01 | 6.11E-02 | pCi/g | 78.36% | RICHRC5011 | 1.25E+00 | 2.78% |
| TH-230 | 1.17E+00 | J | 1.8E-01 | 3.3E-01 | 2.75E-02 | pCi/g | 78.36% | RICHRC5011 | 1.03E+00 | 11.97% |
| TH-232 | 1.00E+00 | J | 1.7E-01 | 2.9E-01 | 3.12E-02 | pCi/g | 78.36% | RICHRC5011 | 1.17E+00 | 15.83% |

Number of Results: 3

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| **LAB NAME:** | QUANTERRA, Richland | **SDG: /RPT GRP:** | W02935 / 9673 |
| **LAB SAMPLE ID:** | D4E6M1CR | **MATRIX:** | SOIL |
| **CLIENT ID:** | B0WMM4 DUP | **DATE RECEIVED:** | 11/1/99 11:50:00 A |
| **ORIG LAB SAMPLE ID:** | 9D4E6M10 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| AM-241 | 1.68E-01 | U | 7.8E-02 | 7.8E-02 | 1.28E-01 | pCi/g | | RICHRC5017 | 2.20E-01 | 26.58% |
| CO-60 | 5.22E-03 | U | 1.4E-02 | 1.4E-02 | 2.39E-02 | pCi/g | | RICHRC5017 | -8.27E-03 | 885.47% |
| CS-137 | 1.04E+01 | | 1.0E+00 | 1.0E+00 | 3.05E-02 | pCi/g | | RICHRC5017 | 9.50E+00 | 8.99% |
| EU-152 | -5.88E-02 | U | 7.3E-02 | 7.3E-02 | 9.95E-02 | pCi/g | | RICHRC5017 | -7.19E-02 | 20.14% |
| EU-154 | 1.54E-02 | U | 4.6E-02 | 4.6E-02 | 7.84E-02 | pCi/g | | RICHRC5017 | -2.35E-02 | 957.57% |
| EU-155 | -2.16E-02 | U | 5.3E-02 | 5.3E-02 | 8.80E-02 | pCi/g | | RICHRC5017 | 2.18E-02 | 7831.72% |
| RA-226 | 6.70E-01 | | 9.4E-02 | 9.4E-02 | 5.31E-02 | pCi/g | | RICHRC5017 | 7.30E-01 | 8.56% |
| RA-228 | 8.64E-01 | | 1.4E-01 | 1.4E-01 | 8.57E-02 | pCi/g | | RICHRC5017 | 8.74E-01 | 1.14% |

**Number of Results:** 8

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4E6M1DR | MATRIX: | SOIL |
| CLIENT ID: | B0WMM4 DUP | DATE RECEIVED: | 11/1/99 11:50:00 A |
| ORIG LAB SAMPLE ID: | 9D4E6M10 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| PU-238 | 1.31E-01 | J | 8.8E-02 | 9.2E-02 | 3.96E-02 | pCi/g | 21.70% | RICHRC5010 | 6.03E-02 | 74.16% |
| PU239/40 | 3.28E+00 | | 4.4E-01 | 8.3E-01 | 5.87E-02 | pCi/g | 21.70% | RICHRC5010 | 3.14E+00 | 4.25% |

Number of Results: 2

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc
rptChemRadDup; v3.41

Quanterra

# DUPLICATE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4E6M1ER | MATRIX: | SOIL |
| CLIENT ID: | B0WMM4 DUP | DATE RECEIVED: | 11/1/99 11:50:00 A |
| ORIG LAB SAMPLE ID: | 9D4E6M10 | | |

| ANALYTE | DUP RESULT | Q | COUNTING ERROR ( 2 s) | TOTAL ERROR ( 2 s) | MDA/ IDL | REPORT UNIT | YIELD | METHOD NUMBER | ORIG RESULT | RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| AM-241 | 3.01E-01 | J | 8.4E-02 | 1.0E-01 | 2.38E-02 | pCi/g | 88.86% | RICHRC5080 | 3.96E-01 | 27.12% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analyticall Services, Inc

rptChemRadDup; v3.41

Quanterra

# BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W02935 / 9673

LAB SAMPLE ID: D4JDD11B MATRIX: SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TH-228 | 1.16E-02 | U | 2.8E-02 | 2.8E-02 | 6.64E-02 | pCi/g | 73.62% | RICHRC5011 |
| TH-230 | 6.16E-03 | U | 1.5E-02 | 1.5E-02 | 3.35E-02 | pCi/g | 73.62% | RICHRC5011 |
| TH-232 | 7.33E-03 | U | 1.5E-02 | 1.5E-02 | 1.99E-02 | pCi/g | 73.62% | RICHRC5011 |

Number of Results: 3

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

# BLANK RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDG11B | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR ( 2s) | TOTAL ERROR ( 2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| PU-238 | 0.00E+00 | U | 0.0E+00 | 2.3E-02 | 2.53E-02 | pCi/g | 33.93% | RICHRC5010 |
| PU239/40 | -7.47E-04 | U | 1.5E-03 | 1.5E-03 | 3.76E-02 | pCi/g | 33.93% | RICHRC5010 |

Number of Results: 2

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

# BLANK RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDH11B | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| U-234 | 6.01E-03 | U | 1.3E-02 | 1.3E-02 | 2.84E-02 | pCi/g | 93.01% | RICHRC5079 |
| U-235 | 1.59E-03 | U | 9.1E-03 | 9.1E-03 | 2.84E-02 | pCi/g | 93.01% | RICHRC5079 |
| U-238 | -5.85E-03 | U | 9.6E-03 | 9.7E-03 | 4.33E-02 | pCi/g | 93.01% | RICHRC5079 |

Number of Results: 3

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

# BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W02935 / 9673

LAB SAMPLE ID: D4JDP11B MATRIX: SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 0.00E+00 | U | 0.0E+00 | 0.0E+00 | 7.29E-05 | ug/g | | RICHRC5058 |

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

# BLANK RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDT11B | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR ( 2s) | TOTAL ERROR ( 2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| AM-241 | 8.90E-03 | U | 1.3E-02 | 1.3E-02 | 1.21E-02 | pCi/g | 87.04% | RICHRC5080 |

Number of Results: 1

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc
rptChemRadBlank; v3.41

Quanterra

# BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W02935 / 9673

LAB SAMPLE ID: D4JE113B MATRIX: SOIL

| ANALYTE | RESULT | Q | COUNTING ERROR ( 2s) | TOTAL ERROR ( 2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| AM-241 | 1.46E-02 | U | 1.4E-02 | 1.4E-02 | 2.06E-02 | pCi/g | | RICHRC5017 |
| CO-60 | 5.74E-03 | U | 7.3E-03 | 7.3E-03 | 1.39E-02 | pCi/g | | RICHRC5017 |
| CS-137 | 1.16E-03 | U | 7.9E-03 | 7.9E-03 | 1.38E-02 | pCi/g | | RICHRC5017 |
| EU-152 | 4.24E-03 | U | 2.2E-02 | 2.2E-02 | 3.80E-02 | pCi/g | | RICHRC5017 |
| EU-154 | -1.25E-03 | U | 2.1E-02 | 2.1E-02 | 3.72E-02 | pCi/g | | RICHRC5017 |
| EU-155 | -1.98E-04 | U | 1.7E-02 | 1.7E-02 | 2.93E-02 | pCi/g | | RICHRC5017 |
| RA-226 | 5.20E-02 | | 3.8E-02 | 3.8E-02 | 2.59E-02 | pCi/g | | RICHRC5017 |
| RA-228 | 6.14E-02 | U | 5.6E-02 | 5.6E-02 | 6.79E-02 | pCi/g | | RICHRC5017 |

Number of Results: 8

Quanterra

# BLANK RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JF611B | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR ( 2s) | TOTAL ERROR ( 2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| STRONTIUM | 3.86E-02 | U | 5.4E-02 | 5.5E-02 | 1.18E-01 | pCi/g | 95.10% | RICHRC5006 |

Number of Results: 1

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc
rptChemRadBlank; v3.41

Quanterra

# BLANK RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D788P11B | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2s) | TOTAL ERROR (2s) | MDA/IDL | REPORT UNIT | YIELD | METHOD NUMBER |
|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 0.00E+00 | U | 0.0E+00 | 0.0E+00 | 7.29E-05 | ug/g | | RICHRC5058 |

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Quanterra Analytical Services, Inc

rptChemRadBlank; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| **LAB NAME:** | QUANTERRA, Richland | **SDG: /RPT GRP:** | W02935 / 9673 |
| **LAB SAMPLE ID:** | D4JDD12S | **MATRIX:** | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| TH-230 | 1.13E+00 | J | 2.0E-01 | 3.4E-01 | 3.66E-02 | pCi/g | 59.41% | 1.14E+00 | 98.55% |

**Number of Results:** 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDG12S | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| PU239/40 | 2.87E+00 | | 3.8E-01 | 7.0E-01 | 5.66E-02 | pCi/g | 26.33% | 3.48E+00 | 82.58% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDH12S | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| U-234 | 7.70E-01 | J | 1.2E-01 | 1.8E-01 | 2.01E-02 | pCi/g | 86.46% | 8.69E-01 | 88.65% |
| U-235 | 6.34E-02 | J | 3.6E-02 | 3.8E-02 | 2.67E-02 | pCi/g | 86.46% | 3.96E-02 | 160.05% |
| U-238 | 7.84E-01 | J | 1.3E-01 | 1.8E-01 | 2.50E-02 | pCi/g | 86.46% | 9.10E-01 | 86.21% |

Number of Results: 3

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDP12S | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 2.00E-01 | J | 0.0E+00 | 3.2E-02 | 7.29E-05 | ug/g | | 2.02E-01 | 98.98% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JDT12S | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| AM-241 | 4.10E+00 | | 2.9E-01 | 7.6E-01 | 1.36E-02 | pCi/g | 79.19% | 4.81E+00 | 85.34% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JE112S | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| CS-137 | 3.25E-01 | | 4.9E-02 | 4.9E-02 | 3.75E-02 | pCi/g | | 3.09E-01 | 105.33% |
| K-40 | 1.94E+01 | | 2.1E+00 | 2.1E+00 | 2.49E-01 | pCi/g | | 1.95E+01 | 99.37% |
| RA-226 | 1.05E+00 | | 1.3E-01 | 1.3E-01 | 5.75E-02 | pCi/g | | 1.15E+00 | 90.91% |
| RA-228 | 2.12E+00 | | 2.8E-01 | 2.8E-01 | 1.13E-01 | pCi/g | | 1.87E+00 | 113.04% |
| U-238 | 1.15E+00 | | 1.4E-01 | 1.4E-01 | 5.91E-02 | pCi/g | | 1.05E+00 | 109.30% |

Number of Results: 5

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4JF612S | MATRIX: | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| STRONTIUM | 9.77E-01 | J | 1.2E-01 | 3.0E-01 | 1.16E-01 | pCi/g | 91.70% | 1.13E+00 | 86.43% |

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# LABORATORY CONTROL SAMPLE

| | | | |
|---|---|---|---|
| **LAB NAME:** | **QUANTERRA, Richland** | **SDG: /RPT GRP:** | W02935 / 9673 |
| **LAB SAMPLE ID:** | D788P12S | **MATRIX:** | SOIL |

| ANALYTE | RESULT | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/ IDL | REPORT UNIT | YIELD | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 1.08E+00 | | 0.0E+00 | 1.7E-01 | 7.29E-05 | ug/g | | 1.00E+01 | 10.76% |

**Number of Results:** 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadLcs; v3.41

Quanterra

# MATRIX SPIKE RESULTS

| | | | |
|---|---|---|---|
| LAB NAME: | QUANTERRA, Richland | SDG: /RPT GRP: | W02935 / 9673 |
| LAB SAMPLE ID: | D4E6M1AW | MATRIX: | SOIL |

| ANALYTE | SPIKE RESULT* | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/IDL | REPORT UNIT | SAMPLE RESULT | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 2.31E+00 | | 0.0E+00 | 3.7E-01 | 7.29E-05 | ug/g | 1.88E+00 | N/A | |

Number of Results: 1

*Spike Result Corrected For Sample Result

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadMatrixSpike; v3.41

Quanterra

# MATRIX SPIKE RESULTS

| | | | |
|---|---|---|---|
| **LAB NAME:** | QUANTERRA, Richland | **SDG: /RPT GRP:** | W02935 / 9673 |
| **LAB SAMPLE ID:** | D4E6M2AW | **MATRIX:** | SOIL |

| ANALYTE | SPIKE RESULT* | Q | COUNTING ERROR (2 s) | TOTAL ERROR (2 s) | MDA/IDL | REPORT UNIT | SAMPLE RESULT | EXPECTED | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL-URANIUM | 1.07E+01 | | 0.0E+00 | 2.6E+00 | 7.29E-05 | ug/g | 1.88E+00 | 1.01E+01 | 106.74% |

**Number of Results:** 1

*Spike Result Corrected For Sample Result

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Quanterra Analytical Services, Inc

rptChemRadMatrixSpike; v3.41

**Bechtel Hanford Inc.**

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

**B99-078-141**



| | | | |
|---|---|---|---|
| **Collector** Bowers/Trice | **Company Contact** Chris Cearlock | **Telephone No.** 372-9574 | **Project Coordinator** TRENT, SJ |
| **Price Code** 8N | **Data Turnaround** 45 Days | | |
| **Project Designation** 200 Area Source characterization - 200-CW-1 OU | **Sampling Location** 200 B pond | | **SAF No.** B99-078 |
| **Ice Chest No.** FRC 96 087 | **Field Logbook No.** EL-1511 | | **Method of Shipment** ~~FED EX~~ and Gov Vehicle RF 10-21-99 |
| **Shipped To** Quanterra Incorporated - RICH | **Offsite Property No.** N/A | | **Bill of Lading/Air Bill No.** N/A |
| | | | **COA** B22CW1 671C |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

Q-27038

**Special Handling and/or Storage**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Preservation** | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | | |
| **Type of Container** | aG | aG | aG | aG | aG | aG | aG | | | | |
| **No. of Container(s)** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| **Volume** | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | | |
| **SAMPLE ANALYSIS** | See item (1) in Special Instructions. | VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol) | Isotopic, Uranium | pH (Soil) - 9045 | See item (2) in Special Instructions. | Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082 | See item (3) in Special Instructions. | | | | |
| SDG W02935 | J9J210229 | | | | | | | | | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | |
| ~~BOWMM4~~ 10/20/99 BOWMM2 | Soil | 10/20/99 | 0907 | | | X | | | | X | | BOWGC2 |
| D4OCO | | | | | | | | | | | |

**CHAIN OF POSSESSION** — **Sign/Print Names**

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Catherine Shea | 10/20/99 1230 | Ref 3A | 10/20/99 1230 |
| REF 3A ~~Rick Rf~~ 10.21.99 | 10:21:99 / 0830 | Rikki Thoren / R Thoren | 10/21/99 / 083 |
| R Fobbs for R Thoren | 10-21-99 1405 | Kitt Schmeckell | 10/21/99 14:05 |
| Relinquished By | Date/Time | Received By | Date/Time 2100 CPM |

**SPECIAL INSTRUCTIONS**

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010

(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 – Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Samples not available to Rel.

**Matrix ***

Soil
Water
Vapor
Other Solid
Other Liquid

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

0047

**Bechtel Hanford Inc.**

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-142



| | | | |
|---|---|---|---|
| **Collector** Bowers/Trice | **Company Contact** Chris Cearlock | **Telephone No.** 372-9574 | **Project Coordinator** TRENT, SJ |
| **Price Code** 8N | **Data Turnaround** 45 Days | | |
| **Project Designation** 200 Area Source characterization - 200-CW-1 OU | **Sampling Location** 200 B pond | | **SAF No.** B99-078 |
| **Ice Chest No.** MAC 10 | **Field Logbook No.** EL-1511 | | **Method of Shipment** FED EX and Gov Vehicle |
| **Shipped To** Quanterra Incorporated Richland | **Offsite Property No.** NA | | **Bill of Lading/Air Bill No.** NA |
| | | | **COA** B20CW1 671C |

**POSSIBLE SAMPLE HAZARDS/REMARKS**

Q-27038

**Special Handling and/or Storage**

SDG W02935

**SAMPLE ANALYSIS** JA1220245

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Preservation** | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | |
| | | | **Type of Container** | aG | aG | aG | aG | aG | aG | aG | | | |
| | | | **No. of Container(s)** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | | | **Volume** | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | |
| | | | | See item (1) in Special Instructions. | VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol) | Isotopic Uranium | pH (Soil) - 9045 | See item (2) in Special Instructions. | Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D; PCBs - 8082 | See item (3) in Special Instructions. | | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | | |
| B0WMM6 D4265 | Soil | 10-21-99 | 1012 | | | X | | | | X | | B0W9T9 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

**CHAIN OF POSSESSION** — **Sign/Print Names**

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Doug Bowers | 10-21-99/1400 | Ref 3C | 10-21-99/1400 |
| Ref 3C | 10-22-99 1100 | R. Fahlberg / R. Fahlberg | 10-22-99 1100 |
| R. Fahlberg / R. Fahlberg | 10-22-99 1330 | Fed. Ex / TC | 10-22-99 |
| R. Fahlberg / R. Fahlberg | 10-22-99 1330 | [illegible] | 10-22-99 1330 |

**SPECIAL INSTRUCTIONS**

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010

(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

~~From non-pad area~~ 10-21-99

**Matrix ***

Soil
Water
Vapor
Other Solid
Other Liquid

**LABORATORY SECTION** Received By — Title: BOCHM — Date/Time

**FINAL SAMPLE DISPOSITION** Disposal Method — Disposed By — Date/Time

0050

| Bechtel Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | B99-078-143 | Page 1 of 1 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Collector: Bowers/Trice | Company Contact: Chris Cearlock | Telephone No.: 372-9574 | Project Coordinator: TRENT, SJ |
| Price Code: 8N | Data Turnaround: 45 Days | | |
| Project Designation: 200 Area Source characterization - 200-CW-1 OU | Sampling Location: 200 B pond | | SAF No.: B99-078 |
| Ice Chest No.: IC 001 | Field Logbook No.: EL-1511 | | Method of Shipment: FED EX and Gov Vehicle |
| Shipped To: Quanterra Incorporated Rich | Offsite Property No.: N/A | | Bill of Lading/Air Bill No.: NA |
| Q-27038 | | | COA: B20CW1 671C |

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SDG W02935

SAMPLE ANALYSIS J9J280225

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | | |
| | | | Type of Container | aG | aG | aG | aG | aG | aG | aG | | | |
| | | | No. of Container(s) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | | | Volume | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | | |
| | | | | See item (1) in Special Instructions. | VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol} | Isotopic Uranium ✓ | pH (Soil) - 9045 | See item (2) in Special Instructions. | Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082 | See item (3) in Special Instructions. | | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | | |
| B0WMM8 D4943 | Soil | 10-27-99 | 0856 | | | X | | | | X | | B0W8C1 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| CHAIN OF POSSESSION | Sign/Print Names | |
|---|---|---|
| Relinquished By: Doug Bowers | Date/Time: 10-27-99/1130 | Received By: Rich 3B 10-27-99/1130 |
| Relinquished By: Rich 3B | Date/Time: 10-28-99/0800 | Received By: Rikk Thoren R. Thoren 10-28-99/0800 |
| Relinquished By: Rikk Thoren R. Thoren | Date/Time: 10-28-99/1345 | Received By: K. Denley 10-28-99 1345 |
| Relinquished By: | Date/Time: | Received By: 2100CP |

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010

(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

0056

CX-21000 SPIT

| Bechtel Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | B99-078-141 | Page 1 of 1 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Collector: Bowers/Trice | Company Contact: Chris Cearlock | Telephone No.: 372-9574 | Project Coordinator: TRENT, SJ |
| Price Code: 8N | Data Turnaround: 45 Days | | |
| Project Designation: 200 Area Source characterization - 200-CW-1 OU | Sampling Location: 200 B pond | | SAF No.: B99-078 |
| Ice Chest No.: ERC 99020 | Field Logbook No.: EL-1511 | | Method of Shipment: FED EX and Gov Vehicle |
| Shipped To: Quanterra Incorporated Rich | Offsite Property No.: N/A | | Bill of Lading/Air Bill No.: N/A |
| | | | COA: B20CW1 671C |

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SDG W02935

SAMPLE ANALYSIS J9K010135

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation | | | | Cool 4C | Cool 4C | None | None | Cool 4C | Cool 4C | None | | |
| Type of Container | | | | aG | aG | aG | aG | aG | aG | aG | | |
| No. of Container(s) | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Volume | | | | 60mL | 60mL | 60mL | 60mL | 500mL | 500mL | 1000mL | | |
| | | | | See item (1) in Special Instructions. | VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol} | Isotopic Uranium | pH (Soil) - 9045 | See item (2) in Special Instructions. | Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082 | See item (3) in Special Instructions. | | |
| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | |
| B0WMM4 D4E6M | Soil | 10-28-99 | 0813 ~~0818~~ RT 10-28-99 | | | X | | | | X | | B0W8C1 |

CHAIN OF POSSESSION — Sign/Print Names

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Catherine J. Trice | 10/28/99 1430 | Ref 3B | 10/28/99 1430 |
| Ref 3B | 11.01.99/0800 | R. Thoren (Rikki Thoren) | 11.01.99/0800 |
| R. Thoren (Rikki Thoren) | 11.01.99/1150 | K. Schlenker | 11-1-99 1150 |
| | | | 1100 PM |

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.1; Total Cyanide - 9010

(3) Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

0059