0066041

SEVERN TRENT STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

# ANALYTICAL REPORT

PROJECT NO. 200-LW-1/LW-2

F03-025

Lot #: F5B230353
SDG #: W04523

Steve Trent

Fluor Hanford Inc
MSIN A0-21
PO Box 1000
Richland, WA 99352

MAR 2005
RECEIVED

SEVERN TRENT LABORATORIES, INC.

MARTI WARD
Project Manager

RECEIVED
AUG 22 2005
EDMC

March 29, 2005

**Case Narrative**
LOT NUMBER: F5B230353
SDG: **W04523**

This report contains the analytical results for the three samples received under chain of custody by STL St. Louis on February 23, 2005. These samples are associated with your F03-025 SAF.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by STL St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt. The samples were received with only one day remaining in the extraction hold time for several tests. Due to RAD levels, a minimum volume was accepted by the laboratory. Due to the volume limitation,matrix QC was not performed for the following tests on a sample from this SDG: PCBs, BNA, pH and oil and grease.

The laboratory does not perform analysis for ethylene glycol.

**Volatiles**

The MSE initial calibration, E050215C, % RSD is greater than 15 % for dichlorodifluotomethane, freon 114, chloromethane, bromomethane, acetone,iodomethane, acetonitrile, methyl acetate, 2-butoxy ethanol, 2-butanone, methacrylonitrile, 2-chloroethyl vinyl ether, tetrachloroethene, trans-1,4-dichloro-2-butene and penatchloroethane. In those instances where the % RSD exceeds 15%, the initial calibration is acceptable provided the mean % RSD for all analytes in the calibration is less than 15%. The mean % RSD for this initial calibration is 10.6. The average RSD approach will lead to greater uncertainty for those analyte for which the %RSD is greater than 15%. The data user should review the associated quality control results carefully, with particular attention to the matrix spike and laboratory control sample results to determine if the calibration linearity poses a significant concern. 2-Butoxy ethanol does not meet the minimum five point calibration criteria (only four points). This analyte will not be analyzed behind this calibration. The continuing calibration fails for two of the CCCs (>20%) - Vinyl Chloride (41.87% low) and 1,1,-Dichloroethene (25.7% high). Freon 114 is 95% high (>60%, samples ND). The affected samples were rerun outside hold time but behind an acceptable calibration.

Methylene chloride was observed in the method blank above the reporting limit in batch 5056052. Methylene chloride is recognized as a laboratory contaminant. Concentrations up to five times the level observed in the method blank, in associated laboratory samples, may be attributed to its presence in the laboratory.

The LCS recoveries in batch 5060035 are outside QC limits for less than 10% of the compounds spiked. Laboratory QC practices, based on federal guidance documents, allow for up to 10% of the spike compounds to be outside QC criteria without necessitating re-preparation/re-analysis. Sample purge efficiency and compliance is demonstrated by the remaining acceptable LCS recoveries.

Due to QC failure, 1-butanol could not be reported from the 8260 analysis.

**Case Narrative**
LOT NUMBER: F5B230353
SDG: **W04523**

**Semi-Volatiles**

There was insufficient sample provided to perform the analysis at the method specified amount. A reduced sample amount was prepared. The reporting limit has been elevated accordingly. There was insufficient volume to perform an MS/MSD.

**Metals**

The MS (MSD) recovery for Antimony is outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. No further action is required.

**Oil and Grease**

A dilution was performed for method 413.1 due to limited sample volume. Reporting limits were adjusted accordingly.

**Nitrate/Nitrite-N**

The MS recovery for Nitrate is outside the established QC limits. A matrix interference is evident in the sample. Method performance is demonstrated by acceptable LCS and LCS-Duplicate recoveries. No further action is required.

**Ammonia**

The MS recovery for Ammonia is outside the established QC limits. A matrix interference is physically evident in the sample. Method performance is demonstrated by acceptable LCS recovery. No further action is required.

**TPH-diesel/Kerosene**

The Method Blank surrogate recovery is outside acceptance limits. Samples, associated with this method blank, demonstrated acceptable surrogate recoveries indicating the surrogate excursion is isolated to the method blank and not indicative of the batch.

Samples were extracted out of hold. Samples were received with only one day remaining in the extraction holding time.
**Affected Samples:**
F5B230353 (1): B19404
F5B230353 (2): B19405

# SAMPLE SUMMARY

**F5B230353**

| WO # | SAMPLE# | CLIENT SAMPLE ID | SAMPLED DATE | SAMP TIME |
|---|---|---|---|---|
| G412N | 001 | B19404 | 02/10/05 | 12:45 |
| G414G | 002 | B19405 | 02/08/05 | 14:00 |
| G414M | 003 | B19406 | 02/14/05 | 14:00 |

**NOTE(S):**

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

# METHODS SUMMARY

**F5B230353**

| PARAMETER | ANALYTICAL METHOD | PREPARATION METHOD |
|---|---|---|
| Chloride | MCAWW 300.0A | MCAWW 300.0A |
| Extractable Petroleum Hydrocarbons | SW846 8015 MOD | SW846 3550 |
| Fluoride | MCAWW 300.0A | MCAWW 300.0A |
| Hexavalent Chromium | SW846 7196A | SW846 3060A |
| Mercury in Solid Waste (Manual Cold-Vapor) | SW846 7471A | SW846 7471A |
| Nitrate as N | MCAWW 300.0A | MCAWW 300.0A |
| Nitrate-Nitrite | MCAWW 353.1 | |
| Nitrite as N | MCAWW 300.0A | MCAWW 300.0A |
| Nitrogen, Ammonia | MCAWW 350.1 | MCAWW 350.1 |
| Oil & Grease (Gravimetric) | SW846 9071A | |
| Percent Moisture | MCAWW 160.3 MOD | MCAWW 160.3 MOD |
| Phosphate as P, Ortho | MCAWW 300.0A | MCAWW 300.0A |
| PCBs by SW-846 8082 | SW846 8082 | SW846 3550B/366 |
| Semivolatile Organic Compounds by GC/MS | SW846 8270C | SW846 3550B |
| Soil and Waste pH | SW846 9045C | SW846 DI-LEACHA |
| Sulfate | MCAWW 300.0A | MCAWW 300.0A |
| Sulfide | SW846 9030 | |
| Total Cyanide | SW846 9010A | SW846 9010A |
| Trace Inductively Coupled Plasma (ICP) Metals | SW846 6010B | SW846 3050B |
| Volatile Organics by GC/MS | SW846 8260B | SW846 5030B/826 |
| Volatile Petroleum Hydrocarbons | SW846 8015 MOD | SW846 5030 |

**References:**

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

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

| Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F03-025-178 | PAGE 1 OF 2 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| COLLECTOR: Pope/Pfister/Wiberg/Tyra | COMPANY CONTACT: TRENT, STEVE | TELEPHONE NO.: 373-5689 | PROJECT COORDINATOR: TRENT, SJ |
| SAMPLING LOCATION: 2216-Z-7; 225'-25.0' | PROJECT DESIGNATION: 200-LW-1/LW-2 Characterization - Soil | | SAF NO.: F03-025 |
| ICE CHEST NO.: GRP-03-006 | FIELD LOGBOOK NO.: | COA: 119143ES10 | METHOD OF SHIPMENT: Federal Express |
| SHIPPED TO: Severn Trent St. Louis | OFFSITE PROPERTY NO.: 2u R5R E0004 | | BILL OF LADING/AIR BILL NO.: 2u R5R E0004 |

PRICE CODE: 8N
AIR QUALITY: ☐
DATA TURNAROUND: 45 Days / 45 Days

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: ~~N/A~~ MAB 2/22/05 Rad tu to B19414

SPECIAL HANDLING AND/OR STORAGE: N/A

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRESERVATION | Cool 4C | | | | | | | | | | | | |
| TYPE OF CONTAINER | aGs* | | | | | | | | | | | | |
| NO. OF CONTAINER(S) | 3 | | | | | | | | | | | | |
| VOLUME | 40mL | | | | | | | | | | | | |
| SAMPLE ANALYSIS | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | | | | | | | | | | | | |

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B19403 | SOIL | 2/10/05 | 1245 | X | | | | | | | | | |
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| CHAIN OF POSSESSION | | SIGN/ PRINT NAMES | |
|---|---|---|---|
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
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| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Original COC attached to document chain of possession.

WO 4523

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|---|---|---|---|
| LABORATORY SECTION | RECEIVED BY: M Ward | TITLE | DATE/TIME: 2-23-05 0900 |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

4-6003-618(03/03)

STL ST. LOUIS

| Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | F03-025-178 | PAGE 2 OF 2 |
|---|---|---|---|---|---|
| COLLECTOR<br>Pope/Pfister/Wiberg/Tyra | COMPANY CONTACT<br>TRENT, STEVE | TELEPHONE NO.<br>373-5689 | PROJECT COORDINATOR<br>TRENT, SJ | PRICE CODE 8N | DATA TURNAROUND |
| SAMPLING LOCATION<br>216-Z-7; | PROJECT DESIGNATION<br>200-LW-1/LW-2 Characterization - Soil | | SAF NO.<br>F03-025 | AIR QUALITY ☐ | 45 Days |
| ICE CHEST NO. | FIELD LOGBOOK NO. | COA<br>119143ES10 | METHOD OF SHIPMENT<br>Federal Express | | |
| SHIPPED TO<br>Severn Trent St. Louis | OFFSITE PROPERTY NO.<br>See RSR E0004 | | BILL OF LADING/AIR BILL NO.<br>See RSR E0004 | | |

**SPECIAL INSTRUCTIONS**

FH acknowledges that the analytical holding time for NO2, NO3, PO4 by EPA Method 300.0 will not be met. Analyze pH within 24 hours of receipt, and report kerosene range organics from the WTPH-D. This sample transferred from WSCF.

(1)VOA - 8260A (TCL); Semi-VOA - 8270A (TCL) {Phenol} Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G; Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Ethylene glycol} PCBs - 8082; ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver} ICP Metals - 6010A (Supertrace Add-On) {Antimony, Beryllium, Bismuth, Copper, Nickel} Mercury - 7471 - (CV); Chromium Hex - 7196; NO2/NO3 - 353.1; Sulfides - 9030; Oil & Grease - 413.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Ammonia - 350.1; Total Cyanide - 9010; pH (Soil) - 9045; Activity Scan;

A-6003-618(03/03)

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W04523
STL ST. LOUIS

LOT # F5B230253

STL ST. LOUIS

| FLUOR Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F03-025-127 | PAGE 1 OF 2 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| COLLECTOR: Pope/Pfister/Tyra/Wiberg | COMPANY CONTACT: TRENT, STEVE | TELEPHONE NO.: 373-5689 | PROJECT COORDINATOR: TRENT, SJ |
| PRICE CODE: 8N | DATA TURNAROUND: 45 Days / 45 Days | AIR QUALITY: ☐ | |
| SAMPLING LOCATION: 216-Z-7; 12.5ft-20ft 225-25 BT 12/01/04 | PROJECT DESIGNATION: 200-LW-1/LW-2 Characterization - Soil | SAF NO.: F03-025 | |
| ICE CHEST NO.: | FIELD LOGBOOK NO.: HNF-N-356 1 | COA: 119143ES10 | METHOD OF SHIPMENT: Governement Vehicle |
| SHIPPED TO: Waste Sampling & Characterization | OFFSITE PROPERTY NO.: NA | | BILL OF LADING/AIR BILL NO.: NA |

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: ~~N/A~~ Radioactive Tie To: B19414

| PRESERVATION | Cool 4C | Cool 4C | Cool 4C | Cool 4C | None | None | None | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TYPE OF CONTAINER | Gs* | aG | aG | Gs* | P | aG | aG | | | |
| NO. OF CONTAINER(S) | 3 | 1 | 1 | 3 | 1 | 1 | 1 | | | |
| VOLUME | 40mL | 120mL | 120mL | 40mL | 500mL | 250mL | 120mL | | | |
| SAMPLE ANALYSIS | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | SEE ITEM (2) IN SPECIAL INSTRUCTIONS | PCBs - 8082; | SEE ITEM (3) IN SPECIAL INSTRUCTIONS | SEE ITEM (4) IN SPECIAL INSTRUCTIONS | SEE ITEM (5) IN SPECIAL INSTRUCTIONS | SEE ITEM (6) IN SPECIAL INSTRUCTIONS | | | |

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~B19403~~ | ~~SOIL~~ | ~~2/10/05~~ | ~~1245~~ | | | | | | | | | | | |
| B19404 ① | SOIL | 2/10/05 | 1245 | X | BT 2-18-0 | BT 2-18-0 | BT 2-18 | BT 2-18 | BT 2-18 | X | MAB 2/22/05 | | | |
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| CHAIN OF POSSESSION | | SIGN/ PRINT NAMES | |
|---|---|---|---|
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| Pfister/Pope | 2/10/05 1429 | SITE FRIG | 2/10/05 1429 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| Site Fridge | 2/18/05 1130 AM | David Tyra | 2/18/05 1130 AM |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| 2-7S to fridge | 2-22-05 0730 | Kevin Vickles | 2-22-05 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| Kevin Vickles | 0830 2-22-05 | David Tyra | 2/22/05 0800 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| David Tyra | 2/22/05 0830 | MO-026 Fridge #3 | 2/22/05 0830 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
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| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
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SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

① Sample number changed to B19403 MAB 2/22/05

0730

| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME |
|---|---|---|---|
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

W04523

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| FLUOR Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | F03-025-127 | PAGE 2 OF 2 |
|---|---|---|---|---|---|
| **COLLECTOR**<br>Pope/Pfister/Tyra/Wiberg | **COMPANY CONTACT**<br>TRENT, STEVE | **TELEPHONE NO.**<br>373-5689 | **PROJECT COORDINATOR**<br>TRENT, SJ | **PRICE CODE** 8N | **DATA TURNAROUND** |
| **SAMPLING LOCATION**<br>216-Z-7; ~~19.5ft-20ft~~ 22.5'-25' BT 12/01/04 | **PROJECT DESIGNATION**<br>200-LW-1/LW-2 Characterization - Soil | | **SAF NO.**<br>F03-025 | **AIR QUALITY** ☐ | **45 Days** |
| **ICE CHEST NO.** | **FIELD LOGBOOK NO.**<br>HNF-N-356 1 | **COA**<br>119143ES10 | **METHOD OF SHIPMENT**<br>Governement Vehicle | | |
| **SHIPPED TO**<br>Waste Sampling & Characterization | **OFFSITE PROPERTY NO.**<br>NA | | **BILL OF LADING/AIR BILL NO.**<br>NA | | |

**SPECIAL INSTRUCTIONS**

The lab is to analyze pH within 24 hours of sample receipt. The lab is to report kerosene range organics from the WTPH-D analysis. FH acknowledges that the analytical holding time for Nitrate, Nitrite and Phosphate by EPA Method 300.0 will not be met.

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol}
(2)Semi-VOA - 8270A (TCL) {Phenol} Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)Alcohols, Glycols, & Ketones - 8015 {Ethylene glycol}
(4)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Gamma Spec - ~~Add-on {Antimony-125, Cesium-134}~~ Isotopic Plutonium; Isotopic Uranium; Neptunium-237; Americium-241; TMOS 1/04
(5)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Mercury, Selenium, Uranium} ICP Metals - 6010A (Add-on) {Bismuth}
(6)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Cations (IC) - 300.7 {Nitrogen in ammonium} Cyanide (Total) - 335.2; pH (Soil) - 9045;

A-6003-618(03/03)



STL ST. LOUIS

| Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | F03-025-179 | PAGE 1 OF 2 |
|---|---|---|---|---|---|
| COLLECTOR<br>Pope/Pfister/Wiberg/Tyra | COMPANY CONTACT<br>TRENT, STEVE | TELEPHONE NO.<br>373-5689 | PROJECT COORDINATOR<br>TRENT, SJ | PRICE CODE 8N | DATA TURNAROUND |
| SAMPLING LOCATION<br>216-Z-7; 17.5'-20' | PROJECT DESIGNATION<br>200-LW-1/LW-2 Characterization - Soil | | SAF NO.<br>F03-025 | AIR QUALITY ☐ | 45 Days / 45 Days |
| ICE CHEST NO.<br>GRP-03-006 | FIELD LOGBOOK NO. | COA<br>119143ES10 | METHOD OF SHIPMENT<br>Federal Express | | |
| SHIPPED TO<br>Severn Trent St. Louis | OFFSITE PROPERTY NO.<br>See RSR E0004 | | BILL OF LADING/AIR BILL NO.<br>See RSR E0004 | | |

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: ~~N/A~~ 2/22/05 Rad Info B19415

SPECIAL HANDLING AND/OR STORAGE: N/A

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRESERVATION | Cool 4C | | | | | | | | | | | | |
| TYPE OF CONTAINER | aGa* | | | | | | | | | | | | |
| NO. OF CONTAINER(S) | 3 | | | | | | | | | | | | |
| VOLUME | 40mL | | | | | | | | | | | | |
| SAMPLE ANALYSIS | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | | | | | | | | | | | | |

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B19405 | SOIL | 2/8/05 | 1400 | X | | | | | | | | | |
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| CHAIN OF POSSESSION | | SIGN/ PRINT NAMES | |
|---|---|---|---|
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| M.G. Bucher 2/22/05 | 0850 | M.G. Bucher M.G. Bucher | 2/22/05 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| M.G. Bucher M.G. Bucher | 2/22/05 0850 | Fed Ex | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Original COC attached to document chain of possession

| | | | |
|---|---|---|---|
| LABORATORY SECTION | RECEIVED BY<br>M Ward | TITLE | DATE/TIME<br>2.23.05 9∞ |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

A-6003-618(03/03)

LOT # EB0225

WO 5523

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STL ST. LOUIS

| Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | F03-025-179 | PAGE 2 OF 2 |
|---|---|---|---|---|---|
| COLLECTOR<br>Pope/Pfister/Wiberg/Tyra | COMPANY CONTACT<br>TRENT, STEVE | TELEPHONE NO.<br>373-5689 | PROJECT COORDINATOR<br>TRENT, SJ | PRICE CODE 8N<br>AIR QUALITY ☐ | DATA TURNAROUND<br>45 Days |
| SAMPLING LOCATION<br>216-Z-7; | PROJECT DESIGNATION<br>200-LW-1/LW-2 Characterization - Soil | | SAF NO.<br>F03-025 | | |
| ICE CHEST NO. | FIELD LOGBOOK NO. | COA<br>119143ES10 | METHOD OF SHIPMENT<br>Federal Express | | |
| SHIPPED TO<br>Severn Trent St. Louis | OFFSITE PROPERTY NO.<br>SW RSR E0004 | | BILL OF LADING/AIR BILL NO.<br>SW RSR E0004 | | |

**SPECIAL INSTRUCTIONS**

FH acknowledges that the analytical holding time for NO2, NO3, PO4 by EPA Method 300.0 will not be met. Analyze pH within 24 hours of receipt, and report kerosene range organics from the WTPH-D. This sample transferred from WSCF.

(1)VOA - 8260A (TCL); Semi-VOA - 8270A (TCL) {Phenol} Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G; Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Ethylene glycol} PCBs - 8082; ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver} ICP Metals - 6010A (Supertrace Add-On) {Antimony, Beryllium, Bismuth, Copper, Nickel} Mercury - 7471 - (CV); Chromium Hex - 7196; NO2/NO3 - 353.1; Sulfides - 9030; Oil & Grease - 413.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Ammonia - 350.1; Total Cyanide - 9010; pH (Soil) - 9045; Activity Scan;

A-6003-618(03/03)

LOT # F03231251 -- W04523 11 of 104
STL ST. LOUIS

LOT # F5B230253

STL ST. LOUIS

| FLUOR Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F03-025-128 | PAGE 1 OF 2 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| COLLECTOR: Pope/Pfister/Tyra/Wiberg | COMPANY CONTACT: TRENT, STEVE | TELEPHONE NO.: 373-5689 | PROJECT COORDINATOR: TRENT, SJ |
| SAMPLING LOCATION: 216-Z-7; ~~22-5R-25ft~~ 17.5'-20' BT 12/01/04 | PROJECT DESIGNATION: 200-LW-1/LW-2 Characterization - Soil | | SAF NO.: F03-025 |
| ICE CHEST NO. | FIELD LOGBOOK NO.: HNF-N-356 1 | COA: 119143ES10 | METHOD OF SHIPMENT: Governement Vehicle |
| SHIPPED TO: Waste Sampling & Characterization | OFFSITE PROPERTY NO.: NA | | BILL OF LADING/AIR BILL NO.: NA |

PRICE CODE: 8N

AIR QUALITY: ☐

DATA TURNAROUND: 45 Days / 45 Days

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: ~~N/A~~ Radioactive Tie To: B19415

| PRESERVATION | Cool 4C | Cool 4C | Cool 4C | Cool 4C | None | None | None | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TYPE OF CONTAINER | Gs* | aG | aG | Gs* | P | aG | aG | | | |
| NO. OF CONTAINER(S) | 3 | 1 | 1 | 3 | 1 | 1 | 1 | | | |
| VOLUME | 40mL | 120mL | 120mL | 40mL | 500mL | 250mL | 120mL | | | |
| SAMPLE ANALYSIS | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | SEE ITEM (2) IN SPECIAL INSTRUCTIONS | PCBs - 8082; | SEE ITEM (3) IN SPECIAL INSTRUCTIONS | SEE ITEM (4) IN SPECIAL INSTRUCTIONS GEA | SEE ITEM (5) IN SPECIAL INSTRUCTIONS | SEE ITEM (6) IN SPECIAL INSTRUCTIONS | | | |

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B19405 | SOIL | 2-8-05 | 1400 | X | X | X | X | X | X | X | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
|---|---|---|---|
| JSMith/ASfer | 2-8-05 1500 | Z-7 RMA Fridge | 2-8-05 1500 |
| Z-7-SITE FAIG | 2-15-05 1340 | R.PFISTER/ | 2-15-05 1340 |
| R.PFISTER/ | 2-15-05 1435 | MO-026 FAIG #3 | 2-15-05 1435 |
| | | | |
| | | | |
| | | | |
| | | | |

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME |
|---|---|---|---|
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

W04523

| FLUOR Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | F03-025-128 | PAGE 2 OF 2 |
|---|---|---|---|---|---|
| COLLECTOR<br>Pope/Pfister/Tyra/Wiberg | COMPANY CONTACT<br>TRENT, STEVE | TELEPHONE NO.<br>373-5689 | PROJECT COORDINATOR<br>TRENT, SJ | PRICE CODE 8N | DATA TURNAROUND |
| SAMPLING LOCATION<br>216-Z-7; ~~22-SR-25R~~ 1715' ~ 20' ST 12/01/04 | PROJECT DESIGNATION<br>200-LW-1/LW-2 Characterization - Soil | | SAF NO.<br>F03-025 | AIR QUALITY ☐ | 45 Days |
| ICE CHEST NO. | FIELD LOGBOOK NO.<br>HNF-N-356 1 | COA<br>119143ES10 | METHOD OF SHIPMENT<br>Governement Vehicle | | |
| SHIPPED TO<br>Waste Sampling & Characterization | OFFSITE PROPERTY NO.<br>NA | | BILL OF LADING/AIR BILL NO.<br>NA | | |

**SPECIAL INSTRUCTIONS**

The lab is to analyze pH within 24 hours of sample receipt. The lab is to report kerosene range organics from the WTPH-D analysis. FH acknowledges that the analytical holding time for Nitrate, Nitrite and Phosphate by EPA Method 300.0 will not be met.

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol}
(2)Semi-VOA - 8270A (TCL) {Phenol} Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)Alcohols, Glycols, & Ketones - 8015 {Ethylene glycol}
(4)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Gamma Spec - ~~Add-on {Antimony-125, Cesium-134}~~ Isotopic Plutonium; Isotopic Uranium; Neptunium-237; Americium-241; TMD 8-11-04 / EXPEDITE GEA - 24 hr. turnaround.
(5)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Mercury, Selenium, Uranium} ICP Metals - 6010A (Add-on) {Bismuth}
(6)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Cations (IC) - 300.7 {Nitrogen in ammonium} Cyanide (Total) - 335.2; pH (Soil) - 9045;

A-6003-618(03/03)

| Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F03-025-180 | PAGE 1 OF 2 |
|---|---|---|---|

| COLLECTOR | COMPANY CONTACT | TELEPHONE NO. | PROJECT COORDINATOR | PRICE CODE 8N | DATA TURNAROUND |
|---|---|---|---|---|---|
| Pope/Pfister/Wiberg/Tyra | TRENT, STEVE | 373-5689 | TRENT, SJ | AIR QUALITY ☐ | 45 Days / 45 Days |
| SAMPLING LOCATION 216-Z-7; 27.5'-30.0' | PROJECT DESIGNATION 200-LW-1/LW-2 Characterization - Soil | | SAF NO. F03-025 | | |
| ICE CHEST NO. GRP-03-006 | FIELD LOGBOOK NO. | COA 119143ES10 | METHOD OF SHIPMENT Federal Express | | |
| SHIPPED TO Severn Trent St. Louis | OFFSITE PROPERTY NO. 2u RSR E0004 | | BILL OF LADING/AIR BILL NO. 2u RSR E0004 | | |

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: ~~N/A~~ MAG 2/20/05 Add tu to B19416

SPECIAL HANDLING AND/OR STORAGE: N/A

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | PRESERVATION | TYPE OF CONTAINER | NO. OF CONTAINER(S) | VOLUME | SAMPLE ANALYSIS |
|---|---|---|---|---|---|---|---|---|
| | | | | Cool 4C | aGs* | 3 | 40mL | SEE ITEM (1) IN SPECIAL INSTRUCTIONS |
| | | | | Cool 4C | aG | 1 | 120mL | SEE ITEM (2) IN SPECIAL INSTRUCTIONS |
| B19406 | SOIL | 2/14/05 | 1400 | X | X | | | |

| CHAIN OF POSSESSION | DATE/TIME | SIGN/ PRINT NAMES | DATE/TIME |
|---|---|---|---|
| RELINQUISHED BY/REMOVED FROM: MD-02 GRP 3 | 2/22/05 0855 | RECEIVED BY/STORED IN: M.G. Bauchle | 2/22/05 0855 |
| RELINQUISHED BY/REMOVED FROM: M.G. Bauchle | 2/22/05 | RECEIVED BY/STORED IN: FedEx | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Original COC attached to document chain of possession.

| LABORATORY SECTION | RECEIVED BY: M. Ward | TITLE | DATE/TIME: 2-23-05 09:00 |
|---|---|---|---|
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

FA-6003-618(03/03)

LOT # F03025

MOA 2 of 3

14 of 10

STL ST. LOUIS

LOT # F5B3C253

STL ST. LOUIS

| Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | | F03-025-180 | PAGE 2 OF 2 |
|---|---|---|---|---|---|
| COLLECTOR<br>Pope/Pfister/Wiberg/Tyra | COMPANY CONTACT<br>TRENT, STEVE | TELEPHONE NO.<br>373-5689 | PROJECT COORDINATOR<br>TRENT, SJ | PRICE CODE 8N | DATA TURNAROUND |
| SAMPLING LOCATION<br>216-Z-7; | PROJECT DESIGNATION<br>200-LW-1/LW-2 Characterization - Soil | | SAF NO.<br>F03-025 | AIR QUALITY ☐ | 45 Days |
| ICE CHEST NO. | FIELD LOGBOOK NO. | COA<br>119143ES10 | METHOD OF SHIPMENT<br>Federal Express | | |
| SHIPPED TO<br>Severn Trent St. Louis | OFFSITE PROPERTY NO.<br>See RSR E0004 | | BILL OF LADING/AIR BILL NO.<br>See RSR E0004 | | |

**SPECIAL INSTRUCTIONS**

FH acknowledges that the analytical holding time for NO2, NO3, PO4 by EPA Method 300.0 will not be met. Analyze pH within 24 hours of receipt, and report kerosene range organics from the WTPH-D. This sample transferred from WSCF.

(1)VOA - 8260A (TCL); Semi-VOA - 8270A (TCL) {Phenol} Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G; Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Ethylene glycol}

(2)PCBs - 8082; ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver} ICP Metals - 6010A (Supertrace Add-On) {Antimony, Beryllium, Bismuth, Copper, Nickel} Mercury - 7471 - (CV); Chromium Hex - 7196; NO2/NO3 - 353.1; Sulfides - 9030; Oil & Grease - 413.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Ammonia - 350.1; Total Cyanide - 9010; pH (Soil) - 9045; Activity Scan;

W04523

A-6003-618(03/03)

LOT # F5B230253

STL ST. LOUIS

| FLUOR Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F03-025-129 | PAGE 1 OF 2 |
|---|---|---|---|

| COLLECTOR | COMPANY CONTACT | TELEPHONE NO. | PROJECT COORDINATOR | PRICE CODE 8N | DATA TURNAROUND |
|---|---|---|---|---|---|
| Pope/Pfister/Tyra/Wiberg | TRENT, STEVE | 373-5689 | TRENT, SJ | AIR QUALITY ☐ | 45 Days / 45 Days |
| SAMPLING LOCATION: 216-Z-7; 27.5ft-30ft | PROJECT DESIGNATION: 200-LW-1/LW-2 Characterization - Soil | | SAF NO.: F03-025 | | |
| ICE CHEST NO. | FIELD LOGBOOK NO.: HNF-N-356 1 | COA: 119143ES10 | METHOD OF SHIPMENT: Governement Vehicle | | |
| SHIPPED TO: Waste Sampling & Characterization | OFFSITE PROPERTY NO.: NA | | BILL OF LADING/AIR BILL NO.: NA | | |

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie ID: B19416

| PRESERVATION | Cool 4C | Cool 4C | Cool 4C | Cool 4C | None | None | None | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TYPE OF CONTAINER | Gs* | aG | aG | Gs* | P | aG | aG | | | |
| NO. OF CONTAINER(S) | 3 | 1 | 1 | 3 | 1 | 1 | 1 | | | |
| VOLUME | 40mL | 120mL | 120mL | 40mL | 500mL | 250mL | 120mL | | | |
| SAMPLE ANALYSIS | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | SEE ITEM (2) IN SPECIAL INSTRUCTIONS | PCBs - 8082; | SEE ITEM (3) IN SPECIAL INSTRUCTIONS | SEE ITEM (4) IN SPECIAL INSTRUCTIONS | SEE ITEM (5) IN SPECIAL INSTRUCTIONS | SEE ITEM (6) IN SPECIAL INSTRUCTIONS | | | |

| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B19406 | SOIL | 2/14/05 | 1400 | X | X | X | X | X | X | X | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| CHAIN OF POSSESSION | | SIGN/ PRINT NAMES | |
|---|---|---|---|
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| Murrell/Murrell | 2/14/05 1445 | FRIDGE Z7 | 2/14/05 1445 |
| Fridge Z-7 / [illegible] | 2/15/05 0930 | [illegible] / David Tyra | 2/15/05 0930 |
| [illegible] / David Tyra | 2/15/05 1010 | Fridge Z7 | 2/15/05 1010 |
| ~~Site Fridge Z-7~~ | ~~2/18/05 1130 AM~~ | ~~David Tyra / [illegible]~~ | ~~2/18/05 1130 AM~~ |
| Z-7 site Fridge | 2/22/05 0730 | David Tyra / [illegible] | 2/22/05 0730 |
| David Tyra / [illegible] | 2/22/05 0830 | MO-026, Fridge #3 | 2/22/05 0830 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Expedite GEA - 24 hr turnaround 12/01/04

| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME |
|---|---|---|---|
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |

W04523

| FLUOR Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F03-025-129 | PAGE 2 OF 2 |
|---|---|---|---|---|
| COLLECTOR<br>Pope/Pfister/Tyra/Wiberg | COMPANY CONTACT<br>TRENT, STEVE | TELEPHONE NO.<br>373-5689 | PROJECT COORDINATOR<br>TRENT, SJ | PRICE CODE 8N<br>AIR QUALITY ☐ |
| SAMPLING LOCATION<br>216-Z-7; 27.5ft-30ft | PROJECT DESIGNATION<br>200-LW-1/LW-2 Characterization - Soil | | SAF NO.<br>F03-025 | DATA TURNAROUND<br>45 Days |
| ICE CHEST NO. | FIELD LOGBOOK NO.<br>HNF-N-356 1 | COA<br>119143ES10 | METHOD OF SHIPMENT<br>Governement Vehicle | |
| SHIPPED TO<br>Waste Sampling & Characterization | OFFSITE PROPERTY NO.<br>NA | | BILL OF LADING/AIR BILL NO.<br>NA | |

**SPECIAL INSTRUCTIONS**

The lab is to analyze pH within 24 hours of sample receipt. The lab is to report kerosene range organics from the WTPH-D analysis. FH acknowledges that the analytical holding time for Nitrate, Nitrite and Phosphate by EPA Method 300.0 will not be met.

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol}
(2)Semi-VOA - 8270A (TCL) {Phenol} Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range} TPH-Gasoline Range - WTPH-G;
(3)Alcohols, Glycols, & Ketones - 8015 {Ethylene glycol}
(4)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Gamma Spec - ~~Add-on {Antimony-125, Cesium-134}~~ JMT 8-11-04 Isotopic Plutonium; Isotopic Uranium; Neptunium-237; Americium-241;
(5)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Mercury, Selenium, Uranium} ICP Metals - 6010A (Add-on) {Bismuth}
(6)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Cations (IC) - 300.7 {Nitrogen in ammonium} Cyanide (Total) - 335.2; pH (Soil) - 9045;

A-6003-618(03/03)

SEVERN TRENT **STL**

Lot No: F5B230353
W04523

**Condition Upon Receipt Form**
**St. Louis Laboratory**

Client: Richland
Quote No: 56392
Shipper/No: 8474 3050 6234

Date: 2·23·05 Time: 0900
Initiated by: MCW
COC/RFA Numbers: ~~119143 ES10~~ MW 2.24.05
see below

**Condition/Variance (Circle "Y" for yes, "N" for no and "N/A" for not applicable):**

| | | | | | |
|---|---|---|---|---|---|
| 1. | Y N | Sample received in undamaged condition? | 7. | Y N | Sample received with Chain of Custody? |
| 2. | Y N | Sample received within 4°C ± 2°C* ? | 8. | Y N | Chain of Custody matches sample IDs on containers? |
| | | Record 2°C | 9. | Y N N/A | Custody seal received intact on cooler.? |
| 3. | Y N N/A | Sample received with proper pH [1]? | 10. | Y N N/A | Custody seal tamper evident on cooler.? |
| 4. | Y N | If N/A - Was pH taken by original STL lab? | 11. | Y N N/A | Custody seal on bottles received intact? |
| 5. | Y N | Sample received in proper containers? | 12. | Y N N/A | Custody seal tamper evident on bottles? |
| 6. | Y N | Sample volume sufficient for analysis? | 13. | Y N | Was CUR (equivalent) rec' d from original STL lab? |

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

**[1]For DOE-AL (Pantex, LANL, Sandia) sites, verify pH all containers received, except for VOA, TOX, and soils.**

Notes:
F03-025-178
F03-025-179
F03-025-180

**Corrective Action:**

☐ Client's Name: _____ Informed by: _____ By: _____

☐ Sample(s) processed "as is". _____

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

Project Management Review: MWard Date: 2·24·05

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

ADMIN-0004, Revised 2/17/04
5216 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev7.doc

STL St. Louis

# VOLATILE ORGANICS

F5B230353 W04523 19 05104

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N1AK **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/24/05 **Analysis Date..:** 02/24/05
**Prep Batch #...:** 5056052
**Dilution Factor:** 1
**% Moisture.....:** 3.4 **Method.....:** SW846 8260B

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | 0.96 |
| Bromomethane | ND | 10 | ug/kg | 0.66 |
| Chloroethane | ND | 10 | ug/kg | 0.58 |
| Acetone | ND | 21 | ug/kg | 1.3 |
| 1,1-Dichloroethene | ND | 5.2 | ug/kg | 0.69 |
| Acetonitrile | ND | 52 | ug/kg | 5.5 |
| **Methylene chloride** | **8.0 B** | **5.2** | **ug/kg** | **2.7** |
| Carbon disulfide | ND | 5.2 | ug/kg | 0.28 |
| 1,1-Dichloroethane | ND | 5.2 | ug/kg | 0.56 |
| 2-Butanone | ND | 21 | ug/kg | 1.1 |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | 0.63 |
| Chloroform | ND | 5.2 | ug/kg | 0.54 |
| 1,1,1-Trichloroethane | ND | 5.2 | ug/kg | 0.57 |
| Carbon tetrachloride | ND | 5.2 | ug/kg | 0.47 |
| 1,2-Dichloroethane | ND | 5.2 | ug/kg | 0.44 |
| Benzene | ND | 5.2 | ug/kg | 0.32 |
| Trichloroethene | ND | 5.2 | ug/kg | 0.46 |
| 1,2-Dichloropropane | ND | 5.2 | ug/kg | 0.48 |
| Bromodichloromethane | ND | 5.2 | ug/kg | 0.40 |
| 4-Methyl-2-pentanone | ND | 21 | ug/kg | 0.93 |
| cis-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.28 |
| Toluene | ND | 5.2 | ug/kg | 0.34 |
| trans-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.41 |
| 1,1,2-Trichloroethane | ND | 5.2 | ug/kg | 0.78 |
| 2-Hexanone | ND | 21 | ug/kg | 1.3 |
| Tetrachloroethene | ND | 5.2 | ug/kg | 0.57 |
| Dibromochloromethane | ND | 5.2 | ug/kg | 0.27 |
| Chlorobenzene | ND | 5.2 | ug/kg | 0.56 |
| Ethylbenzene | ND | 5.2 | ug/kg | 0.46 |
| Vinyl chloride | ND | 5.2 | ug/kg | 0.74 |
| Xylenes (total) | ND | 10 | ug/kg | 1.3 |
| Styrene | ND | 5.2 | ug/kg | 0.49 |
| Bromoform | ND | 5.2 | ug/kg | 0.64 |
| 1,1,2,2-Tetrachloroethane | ND | 5.2 | ug/kg | 0.76 |
| 1,2,4-Trimethylbenzene | ND | 5.2 | ug/kg | 0.59 |
| n-Hexane | ND | 10 | ug/kg | 0.87 |

(Continued on next page)

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N1AK **Matrix.....:** SOLID

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 98 | (80 - 130) |
| Dibromofluoromethane | 92 | (78 - 130) |
| 1,2-Dichloroethane-d4 | 105 | (72 - 134) |
| 4-Bromofluorobenzene | 86 | (68 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**FLUOR HANFORD IC**

**B19404**

**GC/MS Volatiles**

**Lot-Sample #:** F5B230353-001 **Work Order #:** G412N1AK **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Benzene, 1,2,3-trichloro- | 87-61-6 | 7.5 | Q | 25.235 | ug/kg |

**NOTE(S):**

Q: Result was quantitated against the response factor of a calibration standard.

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N2AK **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**Prep Date.....:** 03/01/05 **Analysis Date..:** 03/01/05
**Prep Batch #...:** 5061073
**Dilution Factor:** 1
**% Moisture.....:** 3.4 **Method.....:** SW846 8260B

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | 0.96 |
| Bromomethane | ND | 10 | ug/kg | 0.66 |
| Chloroethane | ND | 10 | ug/kg | 0.58 |
| Acetone | ND | 21 | ug/kg | 1.3 |
| 1,1-Dichloroethene | ND | 5.2 | ug/kg | 0.69 |
| Acetonitrile | ND | 52 | ug/kg | 5.5 |
| **Methylene chloride** | **24** | **5.2** | **ug/kg** | **2.7** |
| Carbon disulfide | ND | 5.2 | ug/kg | 0.28 |
| 1,1-Dichloroethane | ND | 5.2 | ug/kg | 0.56 |
| 2-Butanone | ND | 21 | ug/kg | 1.1 |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | 0.63 |
| Chloroform | ND | 5.2 | ug/kg | 0.54 |
| 1,1,1-Trichloroethane | ND | 5.2 | ug/kg | 0.57 |
| Carbon tetrachloride | ND | 5.2 | ug/kg | 0.47 |
| 1,2-Dichloroethane | ND | 5.2 | ug/kg | 0.44 |
| Benzene | ND | 5.2 | ug/kg | 0.32 |
| Trichloroethene | ND | 5.2 | ug/kg | 0.46 |
| 1,2-Dichloropropane | ND | 5.2 | ug/kg | 0.48 |
| Bromodichloromethane | ND | 5.2 | ug/kg | 0.40 |
| 4-Methyl-2-pentanone | ND | 21 | ug/kg | 0.93 |
| cis-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.28 |
| Toluene | ND | 5.2 | ug/kg | 0.34 |
| trans-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.41 |
| 1,1,2-Trichloroethane | ND | 5.2 | ug/kg | 0.78 |
| 2-Hexanone | ND | 21 | ug/kg | 1.3 |
| Tetrachloroethene | ND | 5.2 | ug/kg | 0.57 |
| Dibromochloromethane | ND | 5.2 | ug/kg | 0.27 |
| Chlorobenzene | ND | 5.2 | ug/kg | 0.56 |
| Ethylbenzene | ND | 5.2 | ug/kg | 0.46 |
| Vinyl chloride | ND | 5.2 | ug/kg | 0.74 |
| Xylenes (total) | ND | 10 | ug/kg | 1.3 |
| Styrene | ND | 5.2 | ug/kg | 0.49 |
| Bromoform | ND | 5.2 | ug/kg | 0.64 |
| 1,1,2,2-Tetrachloroethane | ND | 5.2 | ug/kg | 0.76 |
| 1,2,4-Trimethylbenzene | ND | 5.2 | ug/kg | 0.59 |
| n-Hexane | ND | 10 | ug/kg | 0.87 |

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**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N2AK **Matrix.....:** SOLID

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 98 | (80 - 130) |
| Dibromofluoromethane | 103 | (78 - 130) |
| 1,2-Dichloroethane-d4 | 94 | (72 - 134) |
| 4-Bromofluorobenzene | 86 | (68 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**B19404**

**GC/MS Volatiles**

**Lot-Sample #:** F5B230353-001 **Work Order #:** G412N2AK **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Unknown | | 7.3 | M | 25.917 | ug/kg |
| Unknown | | 6.0 | M | 26.3 | ug/kg |
| Unknown | | 5.4 | M | 27.049 | ug/kg |

**NOTE(S):**

M: Result was measured against nearest internal standard assuming a response factor of 1.

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G1A6 **Matrix.....:** SOLID
**Date Sampled...:** 02/08/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 02/28/05
**Prep Batch #...:** 5060035
**Dilution Factor:** 1
**% Moisture.....:** 4.6 **Method.....:** SW846 8260B

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | 0.98 |
| **Bromomethane** | **1.1 J** | **10** | **ug/kg** | **0.67** |
| Chloroethane | ND | 10 | ug/kg | 0.59 |
| Acetone | ND | 21 | ug/kg | 1.4 |
| 1,1-Dichloroethene | ND | 5.2 | ug/kg | 0.70 |
| Acetonitrile | ND | 52 | ug/kg | 5.6 |
| **Methylene chloride** | **4.3 J** | **5.2** | **ug/kg** | **2.8** |
| Carbon disulfide | ND | 5.2 | ug/kg | 0.28 |
| 1,1-Dichloroethane | ND | 5.2 | ug/kg | 0.57 |
| 2-Butanone | ND | 21 | ug/kg | 1.2 |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | 0.64 |
| Chloroform | ND | 5.2 | ug/kg | 0.55 |
| 1,1,1-Trichloroethane | ND | 5.2 | ug/kg | 0.58 |
| Carbon tetrachloride | ND | 5.2 | ug/kg | 0.47 |
| 1,2-Dichloroethane | ND | 5.2 | ug/kg | 0.44 |
| Benzene | ND | 5.2 | ug/kg | 0.33 |
| **Trichloroethene** | **2.0 J** | **5.2** | **ug/kg** | **0.46** |
| 1,2-Dichloropropane | ND | 5.2 | ug/kg | 0.48 |
| Bromodichloromethane | ND | 5.2 | ug/kg | 0.41 |
| 4-Methyl-2-pentanone | ND | 21 | ug/kg | 0.94 |
| cis-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.28 |
| Toluene | ND | 5.2 | ug/kg | 0.35 |
| trans-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.42 |
| 1,1,2-Trichloroethane | ND | 5.2 | ug/kg | 0.79 |
| 2-Hexanone | ND | 21 | ug/kg | 1.3 |
| Tetrachloroethene | ND | 5.2 | ug/kg | 0.58 |
| Dibromochloromethane | ND | 5.2 | ug/kg | 0.27 |
| Chlorobenzene | ND | 5.2 | ug/kg | 0.57 |
| Ethylbenzene | ND | 5.2 | ug/kg | 0.46 |
| Vinyl chloride | ND | 5.2 | ug/kg | 0.74 |
| Xylenes (total) | ND | 10 | ug/kg | 1.3 |
| Styrene | ND | 5.2 | ug/kg | 0.49 |
| Bromoform | ND | 5.2 | ug/kg | 0.65 |
| 1,1,2,2-Tetrachloroethane | ND | 5.2 | ug/kg | 0.77 |
| 1,2,4-Trimethylbenzene | ND | 5.2 | ug/kg | 0.60 |
| n-Hexane | ND | 10 | ug/kg | 0.88 |

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**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G1A6 **Matrix.....:** SOLID

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 95 | (80 - 130) |
| Dibromofluoromethane | 96 | (78 - 130) |
| 1,2-Dichloroethane-d4 | 92 | (72 - 134) |
| 4-Bromofluorobenzene | 86 | (68 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**B19405**

**GC/MS Volatiles**

**Lot-Sample #:** F5B230353-002 **Work Order #:** G414G1A6 **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | RETENTION TIME | UNITS |
|---|---|---|---|---|
| None | | | | ug/kg |

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M1A6 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 02/28/05
**Prep Batch #...:** 5060035
**Dilution Factor:** 1
**% Moisture.....:** 3.7 **Method.....:** SW846 8260B

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | 0.97 |
| Bromomethane | ND | 10 | ug/kg | 0.66 |
| Chloroethane | ND | 10 | ug/kg | 0.58 |
| Acetone | ND | 21 | ug/kg | 1.3 |
| 1,1-Dichloroethene | ND | 5.2 | ug/kg | 0.70 |
| Acetonitrile | ND | 52 | ug/kg | 5.5 |
| **Methylene chloride** | **3.1 J** | **5.2** | **ug/kg** | **2.7** |
| Carbon disulfide | ND | 5.2 | ug/kg | 0.28 |
| 1,1-Dichloroethane | ND | 5.2 | ug/kg | 0.56 |
| 2-Butanone | ND | 21 | ug/kg | 1.2 |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | 0.63 |
| Chloroform | ND | 5.2 | ug/kg | 0.54 |
| 1,1,1-Trichloroethane | ND | 5.2 | ug/kg | 0.57 |
| Carbon tetrachloride | ND | 5.2 | ug/kg | 0.47 |
| 1,2-Dichloroethane | ND | 5.2 | ug/kg | 0.44 |
| Benzene | ND | 5.2 | ug/kg | 0.32 |
| Trichloroethene | ND | 5.2 | ug/kg | 0.46 |
| 1,2-Dichloropropane | ND | 5.2 | ug/kg | 0.48 |
| Bromodichloromethane | ND | 5.2 | ug/kg | 0.40 |
| 4-Methyl-2-pentanone | ND | 21 | ug/kg | 0.93 |
| cis-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.28 |
| Toluene | ND | 5.2 | ug/kg | 0.34 |
| trans-1,3-Dichloropropene | ND | 5.2 | ug/kg | 0.42 |
| 1,1,2-Trichloroethane | ND | 5.2 | ug/kg | 0.78 |
| 2-Hexanone | ND | 21 | ug/kg | 1.3 |
| Tetrachloroethene | ND | 5.2 | ug/kg | 0.57 |
| Dibromochloromethane | ND | 5.2 | ug/kg | 0.27 |
| Chlorobenzene | ND | 5.2 | ug/kg | 0.56 |
| Ethylbenzene | ND | 5.2 | ug/kg | 0.46 |
| Vinyl chloride | ND | 5.2 | ug/kg | 0.74 |
| Xylenes (total) | ND | 10 | ug/kg | 1.3 |
| Styrene | ND | 5.2 | ug/kg | 0.49 |
| Bromoform | ND | 5.2 | ug/kg | 0.64 |
| 1,1,2,2-Tetrachloroethane | ND | 5.2 | ug/kg | 0.76 |
| 1,2,4-Trimethylbenzene | ND | 5.2 | ug/kg | 0.59 |
| n-Hexane | ND | 10 | ug/kg | 0.87 |

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**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**GC/MS Volatiles**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M1A6 **Matrix.....:** SOLID

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 96 | (80 - 130) |
| Dibromofluoromethane | 97 | (78 - 130) |
| 1,2-Dichloroethane-d4 | 94 | (72 - 134) |
| 4-Bromofluorobenzene | 85 | (68 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**B19406**

**GC/MS Volatiles**

**Lot-Sample #:** F5B230353-003 **Work Order #:** G414M1A6 **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Ethyl Acetate | 7.-05-6 | 5.5 | M | -14178 | ug/kg |

**NOTE(S):**

M: Result was measured against nearest internal standard assuming a response factor of 1.

## MATRIX SPIKE SAMPLE DATA REPORT

### GC/MS Volatiles

Client Lot #...: F5B230353 Work Order #...: G414M1CM-MS Matrix.....: SOLID
MS Lot-Sample #: F5B230353-003 G414M1CN-MSD
Date Sampled...: 02/14/05 Date Received..: 02/23/05
Prep Date.....: 02/28/05 Analysis Date..: 02/28/05
Prep Batch #...: 5060035
Dilution Factor: 1 % Moisture.....: 3.7

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| Chloromethane | ND | 52.3 | 33.3 | ug/kg | 64 | | SW846 8260B |
| | ND | 51.6 | 36.0 | ug/kg | 70 | 7.8 | SW846 8260B |
| Bromomethane | ND | 52.3 | 44.3 | ug/kg | 85 | | SW846 8260B |
| | ND | 51.6 | 43.4 | ug/kg | 84 | 2.1 | SW846 8260B |
| Chloroethane | ND | 52.3 | 48.6 | ug/kg | 93 | | SW846 8260B |
| | ND | 51.6 | 51.1 | ug/kg | 99 | 4.9 | SW846 8260B |
| Acetone | ND | 52.3 | 46.5 | ug/kg | 89 | | SW846 8260B |
| | ND | 51.6 | 55.6 | ug/kg | 108 | 18 | SW846 8260B |
| 1,1-Dichloroethene | ND | 52.3 | 45.1 | ug/kg | 86 | | SW846 8260B |
| | ND | 51.6 | 45.8 | ug/kg | 89 | 1.5 | SW846 8260B |
| Methylene chloride | 3.1 | 52.3 | 45.6 | ug/kg | 81 | | SW846 8260B |
| | 3.1 | 51.6 | 44.4 | ug/kg | 80 | 2.6 | SW846 8260B |
| Carbon disulfide | ND | 52.3 | 44.3 | ug/kg | 85 | | SW846 8260B |
| | ND | 51.6 | 46.8 | ug/kg | 91 | 5.5 | SW846 8260B |
| 1,1-Dichloroethane | ND | 52.3 | 49.0 | ug/kg | 94 | | SW846 8260B |
| | ND | 51.6 | 49.9 | ug/kg | 97 | 1.9 | SW846 8260B |
| 2-Butanone | ND | 52.3 | 59.9 | ug/kg | 114 | | SW846 8260B |
| | ND | 51.6 | 61.4 | ug/kg | 119 | 2.4 | SW846 8260B |
| 1,2-Dichloroethene (total) | ND | 105 | 98.7 | ug/kg | 94 | | SW846 8260B |
| | ND | 103 | 97.4 | ug/kg | 94 | 1.4 | SW846 8260B |
| Chloroform | ND | 52.3 | 50.2 | ug/kg | 96 | | SW846 8260B |
| | ND | 51.6 | 50.9 | ug/kg | 99 | 1.3 | SW846 8260B |
| 1,1,1-Trichloroethane | ND | 52.3 | 52.1 | ug/kg | 100 | | SW846 8260B |
| | ND | 51.6 | 52.6 | ug/kg | 102 | 0.89 | SW846 8260B |
| Carbon tetrachloride | ND | 52.3 | 52.8 | ug/kg | 101 | | SW846 8260B |
| | ND | 51.6 | 49.8 | ug/kg | 96 | 5.9 | SW846 8260B |
| 1,2-Dichloroethane | ND | 52.3 | 49.4 | ug/kg | 94 | | SW846 8260B |
| | ND | 51.6 | 50.8 | ug/kg | 98 | 2.8 | SW846 8260B |
| Benzene | ND | 52.3 | 50.8 | ug/kg | 97 | | SW846 8260B |
| | ND | 51.6 | 48.8 | ug/kg | 95 | 4.0 | SW846 8260B |
| Trichloroethene | ND | 52.3 | 55.6 | ug/kg | 106 | | SW846 8260B |
| | ND | 51.6 | 54.5 | ug/kg | 106 | 2.0 | SW846 8260B |
| 1,2-Dichloropropane | ND | 52.3 | 51.7 | ug/kg | 99 | | SW846 8260B |
| | ND | 51.6 | 53.1 | ug/kg | 103 | 2.6 | SW846 8260B |
| Bromodichloromethane | ND | 52.3 | 50.1 | ug/kg | 96 | | SW846 8260B |
| | ND | 51.6 | 51.1 | ug/kg | 99 | 2.0 | SW846 8260B |
| 4-Methyl-2-pentanone | ND | 52.3 | 33.5 | ug/kg | 64 | | SW846 8260B |
| | ND | 51.6 | 34.0 | ug/kg | 66 | 1.5 | SW846 8260B |

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## MATRIX SPIKE SAMPLE DATA REPORT

### GC/MS Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G414M1CM-MS G414M1CN-MSD **Matrix.....:** SOLID
**MS Lot-Sample #:** F5B230353-003

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND | 52.3 | 51.3 | ug/kg | 98 | | SW846 8260B |
| | ND | 51.6 | 52.3 | ug/kg | 101 | 2.0 | SW846 8260B |
| Toluene | ND | 52.3 | 49.7 | ug/kg | 95 | | SW846 8260B |
| | ND | 51.6 | 50.3 | ug/kg | 97 | 1.1 | SW846 8260B |
| trans-1,3-Dichloropropene | ND | 52.3 | 53.7 | ug/kg | 103 | | SW846 8260B |
| | ND | 51.6 | 57.1 | ug/kg | 111 | 6.1 | SW846 8260B |
| 1,1,2-Trichloroethane | ND | 52.3 | 50.4 | ug/kg | 96 | | SW846 8260B |
| | ND | 51.6 | 52.7 | ug/kg | 102 | 4.4 | SW846 8260B |
| 2-Hexanone | ND | 52.3 | 45.5 | ug/kg | 87 | | SW846 8260B |
| | ND | 51.6 | 48.5 | ug/kg | 94 | 6.3 | SW846 8260B |
| Tetrachloroethene | ND | 52.3 | 50.4 | ug/kg | 96 | | SW846 8260B |
| | ND | 51.6 | 49.0 | ug/kg | 95 | 2.8 | SW846 8260B |
| Dibromochloromethane | ND | 52.3 | 51.5 | ug/kg | 98 | | SW846 8260B |
| | ND | 51.6 | 49.5 | ug/kg | 96 | 3.9 | SW846 8260B |
| Chlorobenzene | ND | 52.3 | 50.2 | ug/kg | 96 | | SW846 8260B |
| | ND | 51.6 | 51.7 | ug/kg | 100 | 2.8 | SW846 8260B |
| Ethylbenzene | ND | 52.3 | 47.7 | ug/kg | 91 | | SW846 8260B |
| | ND | 51.6 | 50.1 | ug/kg | 97 | 5.0 | SW846 8260B |
| Vinyl chloride | ND | 52.3 | 44.8 | ug/kg | 86 | | SW846 8260B |
| | ND | 51.6 | 48.0 | ug/kg | 93 | 7.0 | SW846 8260B |
| Styrene | ND | 52.3 | 52.2 | ug/kg | 100 | | SW846 8260B |
| | ND | 51.6 | 50.1 | ug/kg | 97 | 4.0 | SW846 8260B |
| Bromoform | ND | 52.3 | 53.4 | ug/kg | 102 | | SW846 8260B |
| | ND | 51.6 | 57.3 | ug/kg | 111 | 7.1 | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | ND | 52.3 | 50.5 | ug/kg | 96 | | SW846 8260B |
| | ND | 51.6 | 53.9 | ug/kg | 104 | 6.5 | SW846 8260B |
| n-Hexane | ND | 52.3 | 39.2 | ug/kg | 75 | | SW846 8260B |
| | ND | 51.6 | 40.4 | ug/kg | 78 | 3.0 | SW846 8260B |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 93 | (80 - 130) |
| | 96 | (80 - 130) |
| Dibromofluoromethane | 97 | (78 - 130) |
| | 96 | (78 - 130) |
| 1,2-Dichloroethane-d4 | 92 | (72 - 134) |
| | 89 | (72 - 134) |
| 4-Bromofluorobenzene | 96 | (68 - 150) |
| | 99 | (68 - 150) |

**NOTE(S):**

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

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

## METHOD BLANK REPORT

### GC/MS Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G44471AA **Matrix.....:** SOLID
**MB Lot-Sample #:** F5B250000-052

**Prep Date.....:** 02/24/05
**Analysis Date..:** 02/24/05 **Prep Batch #...:** 5056052
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | SW846 8260B |
| Bromomethane | ND | 10 | ug/kg | SW846 8260B |
| Chloroethane | ND | 10 | ug/kg | SW846 8260B |
| Acetone | ND | 20 | ug/kg | SW846 8260B |
| 1,1-Dichloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| Acetonitrile | ND | 50 | ug/kg | SW846 8260B |
| **Methylene chloride** | **6.0** | **5.0** | **ug/kg** | **SW846 8260B** |
| Carbon disulfide | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1-Dichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 2-Butanone | ND | 20 | ug/kg | SW846 8260B |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | SW846 8260B |
| Chloroform | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,1-Trichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| Carbon tetrachloride | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2-Dichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| Benzene | ND | 5.0 | ug/kg | SW846 8260B |
| Trichloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2-Dichloropropane | ND | 5.0 | ug/kg | SW846 8260B |
| Bromodichloromethane | ND | 5.0 | ug/kg | SW846 8260B |
| 4-Methyl-2-pentanone | ND | 20 | ug/kg | SW846 8260B |
| cis-1,3-Dichloropropene | ND | 5.0 | ug/kg | SW846 8260B |
| Toluene | ND | 5.0 | ug/kg | SW846 8260B |
| trans-1,3-Dichloropropene | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,2-Trichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 2-Hexanone | ND | 20 | ug/kg | SW846 8260B |
| Tetrachloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| Dibromochloromethane | ND | 5.0 | ug/kg | SW846 8260B |
| Chlorobenzene | ND | 5.0 | ug/kg | SW846 8260B |
| Ethylbenzene | ND | 5.0 | ug/kg | SW846 8260B |
| Vinyl chloride | ND | 5.0 | ug/kg | SW846 8260B |
| Xylenes (total) | ND | 10 | ug/kg | SW846 8260B |
| Styrene | ND | 5.0 | ug/kg | SW846 8260B |
| Bromoform | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2,4-Trimethylbenzene | ND | 5.0 | ug/kg | SW846 8260B |
| n-Hexane | ND | 10 | ug/kg | SW846 8260B |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 86 | (80 - 130) |

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**METHOD BLANK REPORT**

**GC/MS Volatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G44471AA **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Dibromofluoromethane | 98 | (78 - 130) | | |
| 1,2-Dichloroethane-d4 | 97 | (72 - 134) | | |
| 4-Bromofluorobenzene | 82 | (68 - 150) | | |

**NOTE(S):**

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

**FLUOR HANFORD IC**

**Method Blank Report**

**GC/MS Volatiles**

**Lot-Sample #:** F5B250000-052 B **Work Order #:** G44471AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Benzene, 1,2,3,-trichloro- | 87-61-6 | 6.9 | Q | 25.221 | ug/kg |

**NOTE(S):**

Q: Result was quantitated against the response factor of a calibration standard.

**METHOD BLANK REPORT**

**GC/MS Volatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G49NJ1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** F5C010000-035

**Prep Date.....:** 02/28/05
**Analysis Date..:** 02/28/05 **Prep Batch #...:** 5060035
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | SW846 8260B |
| Bromomethane | ND | 10 | ug/kg | SW846 8260B |
| Chloroethane | ND | 10 | ug/kg | SW846 8260B |
| Acetone | ND | 20 | ug/kg | SW846 8260B |
| 1,1-Dichloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| Acetonitrile | ND | 50 | ug/kg | SW846 8260B |
| Methylene chloride | ND | 5.0 | ug/kg | SW846 8260B |
| Carbon disulfide | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1-Dichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 2-Butanone | ND | 20 | ug/kg | SW846 8260B |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | SW846 8260B |
| Chloroform | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,1-Trichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| Carbon tetrachloride | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2-Dichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| Benzene | ND | 5.0 | ug/kg | SW846 8260B |
| Trichloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2-Dichloropropane | ND | 5.0 | ug/kg | SW846 8260B |
| Bromodichloromethane | ND | 5.0 | ug/kg | SW846 8260B |
| 4-Methyl-2-pentanone | ND | 20 | ug/kg | SW846 8260B |
| cis-1,3-Dichloropropene | ND | 5.0 | ug/kg | SW846 8260B |
| Toluene | ND | 5.0 | ug/kg | SW846 8260B |
| trans-1,3-Dichloropropene | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,2-Trichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 2-Hexanone | ND | 20 | ug/kg | SW846 8260B |
| Tetrachloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| Dibromochloromethane | ND | 5.0 | ug/kg | SW846 8260B |
| Chlorobenzene | ND | 5.0 | ug/kg | SW846 8260B |
| Ethylbenzene | ND | 5.0 | ug/kg | SW846 8260B |
| Vinyl chloride | ND | 5.0 | ug/kg | SW846 8260B |
| Xylenes (total) | ND | 10 | ug/kg | SW846 8260B |
| Styrene | ND | 5.0 | ug/kg | SW846 8260B |
| Bromoform | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2,4-Trimethylbenzene | ND | 5.0 | ug/kg | SW846 8260B |
| n-Hexane | ND | 10 | ug/kg | SW846 8260B |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 100 | (80 - 130) |

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**METHOD BLANK REPORT**

**GC/MS Volatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G49NJ1AA **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Dibromofluoromethane | 96 | (78 - 130) | | |
| 1,2-Dichloroethane-d4 | 91 | (72 - 134) | | |
| 4-Bromofluorobenzene | 82 | (68 - 150) | | |

**NOTE(S):**

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

**FLUOR HANFORD IC**

**Method Blank Report**

**GC/MS Volatiles**

**Lot-Sample #:** F5C010000-035 B **Work Order #:** G49NJ1AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | RETENTION TIME | UNITS |
|---|---|---|---|---|
| None | | | | ug/kg |

**METHOD BLANK REPORT**

**GC/MS Volatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G5CVX1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** F5C020000-073

**Prep Date.....:** 03/01/05
**Analysis Date..:** 03/01/05 **Prep Batch #...:** 5061073
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Chloromethane | ND | 10 | ug/kg | SW846 8260B |
| **Bromomethane** | **1.3 J** | **10** | **ug/kg** | **SW846 8260B** |
| Chloroethane | ND | 10 | ug/kg | SW846 8260B |
| Acetone | ND | 25 | ug/kg | SW846 8260B |
| 1,1-Dichloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| Acetonitrile | ND | 50 | ug/kg | SW846 8260B |
| Methylene chloride | ND | 5.0 | ug/kg | SW846 8260B |
| Carbon disulfide | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1-Dichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 2-Butanone | ND | 20 | ug/kg | SW846 8260B |
| 1,2-Dichloroethene (total) | ND | 10 | ug/kg | SW846 8260B |
| Chloroform | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,1-Trichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| Carbon tetrachloride | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2-Dichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| Benzene | ND | 5.0 | ug/kg | SW846 8260B |
| Trichloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2-Dichloropropane | ND | 5.0 | ug/kg | SW846 8260B |
| Bromodichloromethane | ND | 5.0 | ug/kg | SW846 8260B |
| 4-Methyl-2-pentanone | ND | 20 | ug/kg | SW846 8260B |
| cis-1,3-Dichloropropene | ND | 5.0 | ug/kg | SW846 8260B |
| Toluene | ND | 5.0 | ug/kg | SW846 8260B |
| trans-1,3-Dichloropropene | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,2-Trichloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 2-Hexanone | ND | 20 | ug/kg | SW846 8260B |
| Tetrachloroethene | ND | 5.0 | ug/kg | SW846 8260B |
| Dibromochloromethane | ND | 5.0 | ug/kg | SW846 8260B |
| Chlorobenzene | ND | 5.0 | ug/kg | SW846 8260B |
| Ethylbenzene | ND | 5.0 | ug/kg | SW846 8260B |
| Vinyl chloride | ND | 5.0 | ug/kg | SW846 8260B |
| Xylenes (total) | ND | 10 | ug/kg | SW846 8260B |
| Styrene | ND | 5.0 | ug/kg | SW846 8260B |
| Bromoform | ND | 5.0 | ug/kg | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 | ug/kg | SW846 8260B |
| 1,2,4-Trimethylbenzene | ND | 5.0 | ug/kg | SW846 8260B |
| n-Hexane | ND | 12 | ug/kg | SW846 8260B |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 98 | (80 - 130) |

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**METHOD BLANK REPORT**

**GC/MS Volatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G5CVX1AA **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Dibromofluoromethane | 98 | (78 - 130) | | |
| 1,2-Dichloroethane-d4 | 95 | (72 - 134) | | |
| 4-Bromofluorobenzene | 95 | (68 - 150) | | |

**NOTE(S):**

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

J Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**Method Blank Report**

**GC/MS Volatiles**

**Lot-Sample #:** F5C020000-073 B **Work Order #:** G5CVX1AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | RETENTION TIME | UNITS |
|---|---|---|---|---|
| None | | | | ug/kg |

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC/MS Volatiles

Client Lot #...: F5B230353 Work Order #...: G44471AC Matrix.....: SOLID
LCS Lot-Sample#: F5B250000-052
Prep Date.....: 02/24/05 Analysis Date..: 02/24/05
Prep Batch #...: 5056052
Dilution Factor: 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| Chloromethane | 50.0 | 29.3 | ug/kg | 59 | SW846 8260B |
| Bromomethane | 50.0 | 39.2 | ug/kg | 78 | SW846 8260B |
| Chloroethane | 50.0 | 47.7 | ug/kg | 95 | SW846 8260B |
| Acetone | 50.0 | 38.3 | ug/kg | 77 | SW846 8260B |
| 1,1-Dichloroethene | 50.0 | 47.4 | ug/kg | 95 | SW846 8260B |
| Methylene chloride | 50.0 | 29.9 | ug/kg | 60 | SW846 8260B |
| Carbon disulfide | 50.0 | 44.6 | ug/kg | 89 | SW846 8260B |
| 1,1-Dichloroethane | 50.0 | 41.4 | ug/kg | 83 | SW846 8260B |
| 2-Butanone | 50.0 | 25.7 | ug/kg | 51 | SW846 8260B |
| 1,2-Dichloroethene (total) | 100 | 93.3 | ug/kg | 93 | SW846 8260B |
| Chloroform | 50.0 | 45.4 | ug/kg | 91 | SW846 8260B |
| 1,1,1-Trichloroethane | 50.0 | 46.1 | ug/kg | 92 | SW846 8260B |
| Carbon tetrachloride | 50.0 | 52.2 | ug/kg | 104 | SW846 8260B |
| 1,2-Dichloroethane | 50.0 | 45.7 | ug/kg | 91 | SW846 8260B |
| Benzene | 50.0 | 48.6 | ug/kg | 97 | SW846 8260B |
| Trichloroethene | 50.0 | 46.7 | ug/kg | 93 | SW846 8260B |
| 1,2-Dichloropropane | 50.0 | 44.1 | ug/kg | 88 | SW846 8260B |
| Bromodichloromethane | 50.0 | 51.6 | ug/kg | 103 | SW846 8260B |
| 4-Methyl-2-pentanone | 50.0 | 47.1 | ug/kg | 94 | SW846 8260B |
| cis-1,3-Dichloropropene | 50.0 | 55.7 | ug/kg | 111 | SW846 8260B |
| Toluene | 50.0 | 44.4 | ug/kg | 89 | SW846 8260B |
| trans-1,3-Dichloropropene | 50.0 | 46.5 | ug/kg | 93 | SW846 8260B |
| 1,1,2-Trichloroethane | 50.0 | 45.3 | ug/kg | 91 | SW846 8260B |
| 2-Hexanone | 50.0 | 37.6 | ug/kg | 75 | SW846 8260B |
| Tetrachloroethene | 50.0 | 35.7 | ug/kg | 71 | SW846 8260B |
| Dibromochloromethane | 50.0 | 48.3 | ug/kg | 97 | SW846 8260B |
| Chlorobenzene | 50.0 | 50.6 | ug/kg | 101 | SW846 8260B |
| Ethylbenzene | 50.0 | 50.8 | ug/kg | 102 | SW846 8260B |
| Vinyl chloride | 50.0 | 57.1 | ug/kg | 114 | SW846 8260B |
| Styrene | 50.0 | 55.6 | ug/kg | 111 | SW846 8260B |
| Bromoform | 50.0 | 51.8 | ug/kg | 104 | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | 50.0 | 52.8 | ug/kg | 106 | SW846 8260B |
| n-Hexane | 50.0 | 41.9 | ug/kg | 84 | SW846 8260B |

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## LABORATORY CONTROL SAMPLE DATA REPORT

### GC/MS Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G44471AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5B250000-052

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 94 | (88 - 115) |
| Dibromofluoromethane | 100 | (84 - 120) |
| 1,2-Dichloroethane-d4 | 103 | (78 - 122) |
| 4-Bromofluorobenzene | 88 | (80 - 120) |

**NOTE(S):**

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

Bold print denotes control parameters

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC/MS Volatiles

Client Lot #...: F5B230353 Work Order #...: G49NJ1AC Matrix.....: SOLID
LCS Lot-Sample#: F5C010000-035
Prep Date.....: 02/28/05 Analysis Date..: 02/28/05
Prep Batch #...: 5060035
Dilution Factor: 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| Chloromethane | 50.0 | 39.9 | ug/kg | 80 | SW846 8260B |
| Bromomethane | 50.0 | 55.9 | ug/kg | 112 | SW846 8260B |
| Chloroethane | 50.0 | 69.6 | ug/kg | 139 | SW846 8260B |
| Acetone | 50.0 | 60.7 | ug/kg | 121 | SW846 8260B |
| 1,1-Dichloroethene | 50.0 | 58.5 | ug/kg | 117 | SW846 8260B |
| Methylene chloride | 50.0 | 60.2 a | ug/kg | 120 | SW846 8260B |
| Carbon disulfide | 50.0 | 61.0 | ug/kg | 122 | SW846 8260B |
| 1,1-Dichloroethane | 50.0 | 62.6 a | ug/kg | 125 | SW846 8260B |
| 2-Butanone | 50.0 | 74.7 a | ug/kg | 149 | SW846 8260B |
| 1,2-Dichloroethene (total) | 100 | 117 | ug/kg | 117 | SW846 8260B |
| Chloroform | 50.0 | 49.1 | ug/kg | 98 | SW846 8260B |
| 1,1,1-Trichloroethane | 50.0 | 49.7 | ug/kg | 99 | SW846 8260B |
| Carbon tetrachloride | 50.0 | 50.0 | ug/kg | 100 | SW846 8260B |
| 1,2-Dichloroethane | 50.0 | 48.0 | ug/kg | 96 | SW846 8260B |
| Benzene | 50.0 | 49.8 | ug/kg | 100 | SW846 8260B |
| Trichloroethene | 50.0 | 50.5 | ug/kg | 101 | SW846 8260B |
| 1,2-Dichloropropane | 50.0 | 49.9 | ug/kg | 100 | SW846 8260B |
| Bromodichloromethane | 50.0 | 47.1 | ug/kg | 94 | SW846 8260B |
| 4-Methyl-2-pentanone | 50.0 | 30.7 | ug/kg | 61 | SW846 8260B |
| cis-1,3-Dichloropropene | 50.0 | 49.9 | ug/kg | 100 | SW846 8260B |
| Toluene | 50.0 | 46.9 | ug/kg | 94 | SW846 8260B |
| trans-1,3-Dichloropropene | 50.0 | 51.5 | ug/kg | 103 | SW846 8260B |
| 1,1,2-Trichloroethane | 50.0 | 47.1 | ug/kg | 94 | SW846 8260B |
| 2-Hexanone | 50.0 | 44.0 | ug/kg | 88 | SW846 8260B |
| Tetrachloroethene | 50.0 | 48.1 | ug/kg | 96 | SW846 8260B |
| Dibromochloromethane | 50.0 | 48.8 | ug/kg | 98 | SW846 8260B |
| Chlorobenzene | 50.0 | 50.0 | ug/kg | 100 | SW846 8260B |
| Ethylbenzene | 50.0 | 45.2 | ug/kg | 90 | SW846 8260B |
| Vinyl chloride | 50.0 | 55.6 | ug/kg | 111 | SW846 8260B |
| Styrene | 50.0 | 51.6 | ug/kg | 103 | SW846 8260B |
| Bromoform | 50.0 | 53.4 | ug/kg | 107 | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | 50.0 | 53.0 | ug/kg | 106 | SW846 8260B |
| n-Hexane | 50.0 | 54.0 | ug/kg | 108 | SW846 8260B |

(Continued on next page)

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC/MS Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G49NJ1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5C010000-035

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 91 | (88 - 115) |
| Dibromofluoromethane | 99 | (84 - 120) |
| 1,2-Dichloroethane-d4 | 90 | (78 - 122) |
| 4-Bromofluorobenzene | 94 | (80 - 120) |

**NOTE(S):**

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

# LABORATORY CONTROL SAMPLE DATA REPORT

## GC/MS Volatiles

Client Lot #...: F5B230353 Work Order #...: G5CVX1AC Matrix.....: SOLID
LCS Lot-Sample#: F5C020000-073
Prep Date.....: 03/01/05 Analysis Date..: 03/01/05
Prep Batch #...: 5061073
Dilution Factor: 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| Chloromethane | 50.0 | 38.7 | ug/kg | 77 | SW846 8260B |
| Bromomethane | 50.0 | 52.1 | ug/kg | 104 | SW846 8260B |
| Chloroethane | 50.0 | 61.1 | ug/kg | 122 | SW846 8260B |
| Acetone | 50.0 | 45.3 | ug/kg | 91 | SW846 8260B |
| 1,1-Dichloroethene | 50.0 | 40.7 | ug/kg | 81 | SW846 8260B |
| Methylene chloride | 50.0 | 38.6 | ug/kg | 77 | SW846 8260B |
| Carbon disulfide | 50.0 | 41.3 | ug/kg | 83 | SW846 8260B |
| 1,1-Dichloroethane | 50.0 | 44.9 | ug/kg | 90 | SW846 8260B |
| 2-Butanone | 50.0 | 54.2 | ug/kg | 108 | SW846 8260B |
| 1,2-Dichloroethene (total) | 100 | 89.6 | ug/kg | 90 | SW846 8260B |
| Chloroform | 50.0 | 46.8 | ug/kg | 94 | SW846 8260B |
| 1,1,1-Trichloroethane | 50.0 | 47.1 | ug/kg | 94 | SW846 8260B |
| Carbon tetrachloride | 50.0 | 45.8 | ug/kg | 92 | SW846 8260B |
| 1,2-Dichloroethane | 50.0 | 45.9 | ug/kg | 92 | SW846 8260B |
| Benzene | 50.0 | 44.6 | ug/kg | 89 | SW846 8260B |
| Trichloroethene | 50.0 | 46.4 | ug/kg | 93 | SW846 8260B |
| 1,2-Dichloropropane | 50.0 | 48.3 | ug/kg | 97 | SW846 8260B |
| Bromodichloromethane | 50.0 | 46.7 | ug/kg | 93 | SW846 8260B |
| 4-Methyl-2-pentanone | 50.0 | 31.3 | ug/kg | 63 | SW846 8260B |
| cis-1,3-Dichloropropene | 50.0 | 48.5 | ug/kg | 97 | SW846 8260B |
| Toluene | 50.0 | 46.8 | ug/kg | 94 | SW846 8260B |
| trans-1,3-Dichloropropene | 50.0 | 53.5 | ug/kg | 107 | SW846 8260B |
| 1,1,2-Trichloroethane | 50.0 | 47.9 | ug/kg | 96 | SW846 8260B |
| 2-Hexanone | 50.0 | 42.0 | ug/kg | 84 | SW846 8260B |
| Tetrachloroethene | 50.0 | 49.9 | ug/kg | 100 | SW846 8260B |
| Dibromochloromethane | 50.0 | 47.7 | ug/kg | 95 | SW846 8260B |
| Chlorobenzene | 50.0 | 51.1 | ug/kg | 102 | SW846 8260B |
| Ethylbenzene | 50.0 | 49.4 | ug/kg | 99 | SW846 8260B |
| Vinyl chloride | 50.0 | 55.0 | ug/kg | 110 | SW846 8260B |
| Styrene | 50.0 | 50.7 | ug/kg | 101 | SW846 8260B |
| Bromoform | 50.0 | 56.3 | ug/kg | 113 | SW846 8260B |
| 1,1,2,2-Tetrachloroethane | 50.0 | 54.4 | ug/kg | 109 | SW846 8260B |
| n-Hexane | 50.0 | 37.9 | ug/kg | 76 | SW846 8260B |

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## LABORATORY CONTROL SAMPLE DATA REPORT

### GC/MS Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G5CVX1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5C020000-073

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Toluene-d8 | 99 | (88 - 115) |
| Dibromofluoromethane | 90 | (84 - 120) |
| 1,2-Dichloroethane-d4 | 83 | (78 - 122) |
| 4-Bromofluorobenzene | 87 | (80 - 120) |

**NOTE(S):**

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

Bold print denotes control parameters

STL St. Louis

# SEMI-VOLATILE ORGANICS

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC/MS Semivolatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N1AP **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/12/05
**Prep Batch #...:** 5059555
**Dilution Factor:** 1
**% Moisture.....:** 3.4 **Method.....:** SW846 8270C

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Tributyl phosphate | ND | 420 | ug/kg | 340 |
| Phenol | ND | 420 | ug/kg | 90 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 2-Fluorophenol | 73 | (40 - 103) |
| Phenol-d5 | 72 | (36 - 105) |
| Nitrobenzene-d5 | 76 | (45 - 114) |
| 2-Fluorobiphenyl | 78 | (49 - 120) |
| 2,4,6-Tribromophenol | 66 | (39 - 114) |
| Terphenyl-d14 | 63 | (42 - 108) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**B19404**

**GC/MS Semivolatiles**

**Lot-Sample #:** F5B230353-001 **Work Order #:** G412N1AP **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Unknown aldol condensate | | 9200 | M | 3.577 | ug/kg |

**NOTE(S):**

M: Result was measured against nearest internal standard assuming a response factor of 1.

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**GC/MS Semivolatiles**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G1CD **Matrix.....:** SOLID
**Date Sampled...:** 02/08/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/12/05
**Prep Batch #...:** 5059555
**Dilution Factor:** 1
**% Moisture.....:** 4.6 **Method.....:** SW846 8270C

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Tributyl phosphate | ND | 830 | ug/kg | 350 |
| Phenol | ND | 830 | ug/kg | 91 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 2-Fluorophenol | 73 | (40 - 103) |
| Phenol-d5 | 73 | (36 - 105) |
| Nitrobenzene-d5 | 75 | (45 - 114) |
| 2-Fluorobiphenyl | 77 | (49 - 120) |
| 2,4,6-Tribromophenol | 67 | (39 - 114) |
| Terphenyl-d14 | 61 | (42 - 108) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**B19405**

**GC/MS Semivolatiles**

**Lot-Sample #:** F5B230353-002 **Work Order #:** G414G1CD **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Unknown aldol condensate | | 19000 | M | 3.576 | ug/kg |

**NOTE(S):**

M: Result was measured against nearest internal standard assuming a response factor of 1.

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**GC/MS Semivolatiles**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M1CD **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/12/05
**Prep Batch #...:** 5059555
**Dilution Factor:** 1
**% Moisture.....:** 3.7 **Method.....:** SW846 8270C

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Tributyl phosphate | ND | 340 | ug/kg | 340 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 2-Fluorophenol | 72 | (40 - 103) |
| Phenol-d5 | 72 | (36 - 105) |
| Nitrobenzene-d5 | 74 | (45 - 114) |
| 2-Fluorobiphenyl | 77 | (49 - 120) |
| 2,4,6-Tribromophenol | 72 | (39 - 114) |
| Terphenyl-d14 | 66 | (42 - 108) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**B19406**

**GC/MS Semivolatiles**

**Lot-Sample #:** F5B230353-003 **Work Order #:** G414M1CD **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Unknown aldol condensate | | 6500 | M | 3.559 | ug/kg |

**NOTE(S):**

M: Result was measured against nearest internal standard assuming a response factor of 1.

**METHOD BLANK REPORT**

**GC/MS Semivolatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G49HC1AD **Matrix.....:** SOLID
**MB Lot-Sample #:** F5B280000-555
**Prep Date.....:** 02/28/05
**Analysis Date..:** 03/12/05 **Prep Batch #...:** 5059555
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Phenol | ND | 400 | ug/kg | SW846 8270C |
| Tributyl phosphate | ND | 330 | ug/kg | SW846 8270C |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 2-Fluorophenol | 74 | (40 - 103) |
| Phenol-d5 | 75 | (36 - 105) |
| Nitrobenzene-d5 | 76 | (45 - 114) |
| 2-Fluorobiphenyl | 79 | (49 - 120) |
| 2,4,6-Tribromophenol | 68 | (39 - 114) |
| Terphenyl-d14 | 62 | (42 - 108) |

**NOTE(S):**

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

**FLUOR HANFORD IC**

**Method Blank Report**

**GC/MS Semivolatiles**

**Lot-Sample #:** F5B280000-555 B **Work Order #:** G49HC1AD **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

| PARAMETER | CAS # | ESTIMATED RESULT | | RETENTION TIME | UNITS |
|---|---|---|---|---|---|
| Unknown aldol condensate | | 5700 | M | 3.57 | ug/kg |

**NOTE(S):**

M: Result was measured against nearest internal standard assuming a response factor of 1.

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC/MS Semivolatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G49HC1AE-LCS **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5B280000-555 G49HC1AF-LCSD
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/12/05
**Prep Batch #...:** 5059555
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | RPD | METHOD |
|---|---|---|---|---|---|---|
| **Phenol** | **3330** | **2330** | **ug/kg** | **70** | | **SW846 8270C** |
| | **3330** | **2260** | **ug/kg** | **68** | **3.1** | **SW846 8270C** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 2-Fluorophenol | 73 | (50 - 98) |
| | 70 | (50 - 98) |
| Phenol-d5 | 73 | (51 - 95) |
| | 71 | (51 - 95) |
| Nitrobenzene-d5 | 76 | (50 - 111) |
| | 74 | (50 - 111) |
| 2-Fluorobiphenyl | 78 | (57 - 117) |
| | 76 | (57 - 117) |
| 2,4,6-Tribromophenol | 75 | (53 - 108) |
| | 73 | (53 - 108) |
| Terphenyl-d14 | 59 | (49 - 107) |
| | 58 | (49 - 107) |

**NOTE(S):**

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

Bold print denotes control parameters

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC Volatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N1AR **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/24/05 **Analysis Date..:** 02/24/05
**Prep Batch #...:** 5056081
**Dilution Factor:** 1
**% Moisture.....:** 3.4 **Method.....:** SW846 8015 MOD

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Volatile Petroleum Hydrocarbons | ND | 0.10 | mg/kg | 0.021 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Trifluorotoluene | 84 | (28 - 124) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**GC Volatiles**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G1A9 **Matrix.....:** SOLID
**Date Sampled...:** 02/08/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/24/05 **Analysis Date..:** 02/24/05
**Prep Batch #...:** 5056081
**Dilution Factor:** 1
**% Moisture.....:** 4.6 **Method.....:** SW846 8015 MOD

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Volatile Petroleum Hydrocarbons | ND | 0.10 | mg/kg | 0.021 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Trifluorotoluene | 82 | (28 - 124) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**GC Volatiles**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M1A9 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/24/05 **Analysis Date..:** 02/24/05
**Prep Batch #...:** 5056081
**Dilution Factor:** 1
**% Moisture.....:** 3.7 **Method.....:** SW846 8015 MOD

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Volatile Petroleum Hydrocarbons | ND | 0.10 | mg/kg | 0.021 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Trifluorotoluene | 78 | (28 - 124) |

## MATRIX SPIKE SAMPLE DATA REPORT

### GC Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G414M1CU-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** F5B230353-003 G414M1CV-MSD
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/24/05 **Analysis Date..:** 02/24/05
**Prep Batch #...:** 5056081
**Dilution Factor:** 1 **% Moisture.....:** 3.7

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| **Volatile Petroleum Hydrocarbons** | ND | 1.04 | 0.954 | mg/kg | 92 | | SW846 8015 MOD |
| | ND | 1.04 | 1.08 | mg/kg | 104 | 13 | SW846 8015 MOD |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Trifluorotoluene | 93 | (28 - 124) |
| | 90 | (28 - 124) |

**NOTE(S):**

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

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

## METHOD BLANK REPORT

### GC Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G446K1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** F5B250000-081

**Prep Date.....:** 02/24/05
**Analysis Date..:** 02/24/05 **Prep Batch #...:** 5056081
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Volatile Petroleum Hydrocarbons | ND | 0.10 | mg/kg | SW846 8015 MOD |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Trifluorotoluene | 85 | (28 - 124) |

**NOTE(S):**

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

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC Volatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G446K1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5B250000-081
**Prep Date.....:** 02/24/05 **Analysis Date..:** 02/24/05
**Prep Batch #...:** 5056081
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| **Volatile Petroleum Hydrocarbons** | **1.00** | **1.03** | **mg/kg** | **103** | **SW846 8015 MO** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Trifluorotoluene | 97 | (85 - 108) |

**NOTE(S):**

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

Bold print denotes control parameters

# GC
# TPH

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**GC Semivolatiles**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N1CF **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/10/05
**Prep Batch #...:** 5059552
**Dilution Factor:** 1
**% Moisture.....:** 3.4 **Method.....:** SW846 8015 MOD

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Kerosene | ND | 26 | mg/kg | 26 |
| TPH - Diesel Range - WTPH-D | ND | 26 | mg/kg | 0.97 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| o-Terphenyl | 40 | (10 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**GC Semivolatiles**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G1CE **Matrix.....:** SOLID
**Date Sampled...:** 02/08/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/10/05
**Prep Batch #...:** 5059552
**Dilution Factor:** 1
**% Moisture.....:** 4.6 **Method.....:** SW846 8015 MOD

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Kerosene | ND | 26 | mg/kg | 26 |
| TPH - Diesel Range - WTPH-D | ND | 26 | mg/kg | 0.99 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| o-Terphenyl | 45 | (10 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**GC Semivolatiles**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M1CA **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/10/05
**Prep Batch #...:** 5059552
**Dilution Factor:** 1
**% Moisture.....:** 3.7 **Method.....:** SW846 8015 MOD

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Kerosene | ND | 26 | mg/kg | 26 |
| TPH - Diesel Range - WTPH-D | ND | 26 | mg/kg | 0.98 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| o-Terphenyl | 43 | (10 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

## MATRIX SPIKE SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G414M1EF-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** F5B230353-003 G414M1EG-MSD
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/10/05
**Prep Batch #...:** 5059552
**Dilution Factor:** 1 **% Moisture.....:** 3.7

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| **TPH - Diesel Range - WTPH** | **ND** | **85.1** | **82.7** | **mg/kg** | **97 a** | | **SW846 8015 MOD** |
| | **ND** | **84.8** | **74.1** | **mg/kg** | **87 a** | **11** | **SW846 8015 MOD** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| o-Terphenyl | 72 | (10 - 150) |
| | 63 | (10 - 150) |

**NOTE(S):**

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

## METHOD BLANK REPORT

### GC Semivolatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G49FP1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** F5B280000-552

**Prep Date.....:** 02/28/05
**Analysis Date..:** 03/10/05 **Prep Batch #...:** 5059552
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Kerosene | ND | 25 | mg/kg | SW846 8015 MOD |
| TPH - Diesel Range - WTPH | ND | 25 | mg/kg | SW846 8015 MOD |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| o-Terphenyl | 77 * | (78 - 150) |

**NOTE(S):**

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

* Surrogate recovery is outside stated control limits.

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G49FP1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5B280000-552
**Prep Date.....:** 02/28/05 **Analysis Date..:** 03/10/05
**Prep Batch #...:** 5059552
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| **TPH - Diesel Range - WTPH** | **83.3** | **77.1** | **mg/kg** | **93** | **SW846 8015 MO** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| o-Terphenyl | 129 | (78 - 150) |

**NOTE(S):**

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

Bold print denotes control parameters

STL St. Louis

# GC
# PCB

F5B230253

WG4523

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**GC Semivolatiles**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M1A7 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**Prep Date.....:** 03/18/05 **Analysis Date..:** 03/20/05
**Prep Batch #...:** 5077250
**Dilution Factor:** 1
**% Moisture.....:** 3.7 **Method.....:** SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | MDL |
|---|---|---|---|---|
| Aroclor 1016 | ND | 78 | ug/kg | 4.9 |
| Aroclor 1221 | ND | 78 | ug/kg | 4.9 |
| Aroclor 1232 | ND | 78 | ug/kg | 4.9 |
| Aroclor 1242 | ND | 78 | ug/kg | 4.9 |
| Aroclor 1248 | ND | 78 | ug/kg | 4.9 |
| Aroclor 1254 | ND | 78 | ug/kg | 5.0 |
| Aroclor 1260 | ND | 78 | ug/kg | 5.0 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Decachlorobiphenyl | 98 | (10 - 150) |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

**METHOD BLANK REPORT**

**GC Semivolatiles**

**Client Lot #...:** F5B230353 **Work Order #...:** G6H061AA **Matrix.....:** SOLID
**MB Lot-Sample #:** F5C180000-250

**Prep Date.....:** 03/18/05
**Analysis Date..:** 03/20/05 **Prep Batch #...:** 5077250
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Aroclor 1016 | ND | 75 | ug/kg | SW846 8082 |
| Aroclor 1221 | ND | 75 | ug/kg | SW846 8082 |
| Aroclor 1232 | ND | 75 | ug/kg | SW846 8082 |
| Aroclor 1242 | ND | 75 | ug/kg | SW846 8082 |
| Aroclor 1248 | ND | 75 | ug/kg | SW846 8082 |
| Aroclor 1254 | ND | 75 | ug/kg | SW846 8082 |
| Aroclor 1260 | ND | 75 | ug/kg | SW846 8082 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Decachlorobiphenyl | 111 | (30 - 150) |

**NOTE(S):**

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

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** F5B230353 **Work Order #...:** G6H061AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** F5C180000-250
**Prep Date.....:** 03/18/05 **Analysis Date..:** 03/20/05
**Prep Batch #...:** 5077250
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **167** | **173** | **ug/kg** | **104** | **SW846 8082** |
| **Aroclor 1260** | **167** | **186** | **ug/kg** | **111** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Decachlorobiphenyl | 94 | (73 - 150) |

**NOTE(S):**

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

Bold print denotes control parameters

# METALS

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**TOTAL Metals**

**Lot-Sample #...:** F5B230353-001 **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**% Moisture.....:** 3.4

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 5061047 | | | | | | |
| **Antimony** | 1.3 | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G412N1AV |
| | | Dilution Factor: 1 | | MDL.....: 0.21 | | |
| **Arsenic** | 1.5 | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G412N1AW |
| | | Dilution Factor: 1 | | MDL.....: 0.19 | | |
| **Barium** | 69.1 ~~J~~ | 20.7 | mg/kg | SW846 6010B | 03/02/05 | G412N1AX |
| | | Dilution Factor: 1 | | MDL.....: 0.046 | | |
| **Beryllium** | 0.16 B | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G412N1A0 |
| | | Dilution Factor: 1 | | MDL.....: 0.039 | | |
| Cadmium | ND | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G412N1A1 |
| | | Dilution Factor: 1 | | MDL.....: 0.023 | | |
| **Chromium** | 47.2 | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G412N1A2 |
| | | Dilution Factor: 1 | | MDL.....: 0.58 | | |
| **Copper** | 18.2 | 2.6 | mg/kg | SW846 6010B | 03/02/05 | G412N1A3 |
| | | Dilution Factor: 1 | | MDL.....: 0.39 | | |
| **Lead** | 2.2 | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G412N1A4 |
| | | Dilution Factor: 1 | | MDL.....: 0.21 | | |
| **Nickel** | 6.9 ~~J~~ | 4.1 | mg/kg | SW846 6010B | 03/02/05 | G412N1A5 |
| | | Dilution Factor: 1 | | MDL.....: 0.14 | | |
| Selenium | ND | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G412N1A6 |
| | | Dilution Factor: 1 | | MDL.....: 0.31 | | |
| Silver | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G412N1A7 |
| | | Dilution Factor: 1 | | MDL.....: 0.60 | | |
| **Bismuth** | 108 | 20.7 | mg/kg | SW846 6010B | 03/02/05 | G412N1A8 |
| | | Dilution Factor: 1 | | MDL.....: 2.1 | | |
| **Boron** | 3.0 B, ~~J~~ C | 20.7 | mg/kg | SW846 6010B | 03/02/05 | G412N1A9 |
| | | Dilution Factor: 1 | | MDL.....: 0.59 | | |
| **Prep Batch #...:** 5075584 | | | | | | |
| **Mercury** | 0.81 | 0.034 | mg/kg | SW846 7471A | 03/16-03/23/05 | G412N1AU |
| | | Dilution Factor: 1 | | MDL.....: 0.0075 | | |

(Continued on next page)

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**TOTAL Metals**

**Lot-Sample #...:** F5B230353-001 **Matrix.....:** SOLID

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

C1 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**TOTAL Metals**

**Lot-Sample #...:** F5B230353-002 **Matrix.....:** SOLID
**Date Sampled...:** 02/08/05 **Date Received..:** 02/23/05
**% Moisture.....:** 4.6

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 5061047 | | | | | | |
| **Antimony** | **2.8** | **1.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AE** |
| | | Dilution Factor: 1 | | MDL.....: 0.21 | | |
| **Arsenic** | **3.1** | **1.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AF** |
| | | Dilution Factor: 1 | | MDL.....: 0.19 | | |
| **Barium** | **71.9** ~~J~~ | **21.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AG** |
| | | Dilution Factor: 1 | | MDL.....: 0.046 | | |
| **Beryllium** | **0.071 B** | **0.52** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AH** |
| | | Dilution Factor: 1 | | MDL.....: 0.040 | | |
| Cadmium | ND | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G414G1AJ |
| | | Dilution Factor: 1 | | MDL.....: 0.023 | | |
| **Chromium** | **193** | **1.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AK** |
| | | Dilution Factor: 1 | | MDL.....: 0.59 | | |
| **Copper** | **16.0** | **2.6** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AL** |
| | | Dilution Factor: 1 | | MDL.....: 0.39 | | |
| **Lead** | **14.3** | **0.52** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AM** |
| | | Dilution Factor: 1 | | MDL.....: 0.21 | | |
| **Nickel** | **6.8** ~~J~~ | **4.2** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AN** |
| | | Dilution Factor: 1 | | MDL.....: 0.14 | | |
| Selenium | ND | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G414G1AP |
| | | Dilution Factor: 1 | | MDL.....: 0.32 | | |
| Silver | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G414G1AQ |
| | | Dilution Factor: 1 | | MDL.....: 0.61 | | |
| **Bismuth** | **116** | **21.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AR** |
| | | Dilution Factor: 1 | | MDL.....: 2.1 | | |
| **Boron** | **2.6 B** ~~J~~ C | **21.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414G1AT** |
| | | Dilution Factor: 1 | | MDL.....: 0.59 | | |
| **Prep Batch #...:** 5075584 | | | | | | |
| **Mercury** | **5.6** | **0.35** | **mg/kg** | **SW846 7471A** | **03/16-03/24/05** | **G414G1AD** |
| | | Dilution Factor: 10 | | MDL.....: 0.075 | | |

MW 3.29.05

(Continued on next page)

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**TOTAL Metals**

**Lot-Sample #...:** F5B230353-002 **Matrix.....:** SOLID

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

C Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**TOTAL Metals**

**Lot-Sample #...:** F5B230353-003 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**% Moisture.....:** 3.7

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 5061047 | | | | | | |
| **Antimony** | **0.54 B** | **1.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AE** |
| | | Dilution Factor: 1 | | MDL.....: 0.21 | | |
| **Arsenic** | **1.3** | **1.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AF** |
| | | Dilution Factor: 1 | | MDL.....: 0.19 | | |
| **Barium** | **55.0** | **20.8** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AG** |
| | | Dilution Factor: 1 | | MDL.....: 0.046 | | |
| **Beryllium** | **0.21 B** | **0.52** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AH** |
| | | Dilution Factor: 1 | | MDL.....: 0.039 | | |
| Cadmium | ND | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G414M1AJ |
| | | Dilution Factor: 1 | | MDL.....: 0.023 | | |
| **Chromium** | **6.2** | **1.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AK** |
| | | Dilution Factor: 1 | | MDL.....: 0.58 | | |
| **Copper** | **13.4** | **2.6** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AL** |
| | | Dilution Factor: 1 | | MDL.....: 0.39 | | |
| **Lead** | **1.8** | **0.52** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AM** |
| | | Dilution Factor: 1 | | MDL.....: 0.21 | | |
| **Nickel** | **5.8** | **4.2** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AN** |
| | | Dilution Factor: 1 | | MDL.....: 0.14 | | |
| Selenium | ND | 0.52 | mg/kg | SW846 6010B | 03/02/05 | G414M1AP |
| | | Dilution Factor: 1 | | MDL.....: 0.31 | | |
| Silver | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G414M1AQ |
| | | Dilution Factor: 1 | | MDL.....: 0.60 | | |
| **Bismuth** | **123** | **20.8** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AR** |
| | | Dilution Factor: 1 | | MDL.....: 2.1 | | |
| **Boron** | **3.1 B,** C | **20.8** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G414M1AT** |
| | | Dilution Factor: 1 | | MDL.....: 0.59 | | |
| **Prep Batch #...:** 5075584 | | | | | | |
| **Mercury** | **0.037** | **0.035** | **mg/kg** | **SW846 7471A** | **03/16-03/23/05** | **G414M1AD** |
| | | Dilution Factor: 1 | | MDL.....: 0.0075 | | |

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**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**TOTAL Metals**

**Lot-Sample #...:** F5B230353-003 **Matrix.....:** SOLID

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

## MATRIX SPIKE SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05

**MS Lot-Sample #:** F5B230353-003 **Prep Batch #...:** 5061047
**% Moisture.....:** 3.7

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| | 0.54 | 51.9 | 32.8 N | mg/kg | 62 | | SW846 6010B | 03/02/05 | G414M1C1 |
| | 0.54 | 51.9 | 31.0 N | mg/kg | 59 | 5.4 | SW846 6010B | 03/02/05 | G414M1C2 |
| | | | Dilution Factor: 1 | | | | | | |
| Arsenic | | | | | | | | | |
| | 1.3 | 208 | 201 | mg/kg | 96 | | SW846 6010B | 03/02/05 | G414M1C3 |
| | 1.3 | 208 | 201 | mg/kg | 96 | 0.05 | SW846 6010B | 03/02/05 | G414M1C4 |
| | | | Dilution Factor: 1 | | | | | | |
| Barium | | | | | | | | | |
| | 55.0 | 208 | 249 | mg/kg | 94 | | SW846 6010B | 03/02/05 | G414M1C5 |
| | 55.0 | 208 | 271 | mg/kg | 104 | 8.3 | SW846 6010B | 03/02/05 | G414M1C6 |
| | | | Dilution Factor: 1 | | | | | | |
| Beryllium | | | | | | | | | |
| | 0.21 | 5.19 | 5.46 | mg/kg | 101 | | SW846 6010B | 03/02/05 | G414M1C7 |
| | 0.21 | 5.19 | 5.49 | mg/kg | 102 | 0.43 | SW846 6010B | 03/02/05 | G414M1C8 |
| | | | Dilution Factor: 1 | | | | | | |
| Cadmium | | | | | | | | | |
| | ND | 5.19 | 4.01 | mg/kg | 77 | | SW846 6010B | 03/02/05 | G414M1C9 |
| | ND | 5.19 | 3.91 | mg/kg | 75 | 2.6 | SW846 6010B | 03/02/05 | G414M1DA |
| | | | Dilution Factor: 1 | | | | | | |
| Chromium | | | | | | | | | |
| | 6.2 | 20.8 | 24.0 | mg/kg | 86 | | SW846 6010B | 03/02/05 | G414M1DC |
| | 6.2 | 20.8 | 26.5 | mg/kg | 98 | 10 | SW846 6010B | 03/02/05 | G414M1DD |
| | | | Dilution Factor: 1 | | | | | | |
| Copper | | | | | | | | | |
| | 13.4 | 26.0 | 36.8 | mg/kg | 90 | | SW846 6010B | 03/02/05 | G414M1DE |
| | 13.4 | 26.0 | 38.7 | mg/kg | 98 | 4.9 | SW846 6010B | 03/02/05 | G414M1DF |
| | | | Dilution Factor: 1 | | | | | | |
| Lead | | | | | | | | | |
| | 1.8 | 51.9 | 49.9 | mg/kg | 93 | | SW846 6010B | 03/02/05 | G414M1DG |
| | 1.8 | 51.9 | 50.2 | mg/kg | 93 | 0.54 | SW846 6010B | 03/02/05 | G414M1DH |
| | | | Dilution Factor: 1 | | | | | | |

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## MATRIX SPIKE SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Nickel | | | | | | | | | |
| | 5.8 | 51.9 | 53.8 | mg/kg | 93 | | SW846 6010B | 03/02/05 | G414M1DJ |
| | 5.8 | 51.9 | 55.9 | mg/kg | 97 | 3.8 | SW846 6010B | 03/02/05 | G414M1DK |
| | | | Dilution Factor: 1 | | | | | | |
| Selenium | | | | | | | | | |
| | ND | 208 | 195 | mg/kg | 94 | | SW846 6010B | 03/02/05 | G414M1DL |
| | ND | 208 | 195 | mg/kg | 94 | 0.09 | SW846 6010B | 03/02/05 | G414M1DM |
| | | | Dilution Factor: 1 | | | | | | |
| Silver | | | | | | | | | |
| | ND | 5.19 | 4.80 | mg/kg | 93 | | SW846 6010B | 03/02/05 | G414M1DN |
| | ND | 5.19 | 4.77 | mg/kg | 92 | 0.67 | SW846 6010B | 03/02/05 | G414M1DP |
| | | | Dilution Factor: 1 | | | | | | |
| Bismuth | | | | | | | | | |
| | 123 | 208 | 308 | mg/kg | 89 | | SW846 6010B | 03/02/05 | G414M1DQ |
| | 123 | 208 | 330 | mg/kg | 99 | 6.7 | SW846 6010B | 03/02/05 | G414M1DR |
| | | | Dilution Factor: 1 | | | | | | |
| Boron | | | | | | | | | |
| | 3.1 | 208 | 196 | mg/kg | 93 | | SW846 6010B | 03/02/05 | G414M1DT |
| | 3.1 | 208 | 196 | mg/kg | 93 | 0.01 | SW846 6010B | 03/02/05 | G414M1DU |
| | | | Dilution Factor: 1 | | | | | | |

**MS Lot-Sample #:** F5B230353-003 **Prep Batch #...:** 5075584
**% Moisture.....:** 3.7

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | | | | | | | | | |
| | 0.037 | 0.173 | 0.183 | mg/kg | 85 | | SW846 7471A | 03/16-03/23/05 | G414M1CX |
| | 0.037 | 0.173 | 0.196 | mg/kg | 92 | 6.4 | SW846 7471A | 03/16-03/23/05 | G414M1C0 |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

**METHOD BLANK REPORT**

**TOTAL Metals**

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **MB Lot-Sample #:** F5C020000-047 **Prep Batch #...:** 5061047 | | | | | | |
| Antimony | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AA |
| | | Dilution Factor: 1 | | | | |
| Arsenic | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AC |
| | | Dilution Factor: 1 | | | | |
| **Barium** | **0.062 B** | **20.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G5CRH1AD** |
| | | Dilution Factor: 1 | | | | |
| Beryllium | ND | 0.50 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AE |
| | | Dilution Factor: 1 | | | | |
| Cadmium | ND | 0.50 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AF |
| | | Dilution Factor: 1 | | | | |
| Chromium | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AG |
| | | Dilution Factor: 1 | | | | |
| Copper | ND | 2.5 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AH |
| | | Dilution Factor: 1 | | | | |
| Lead | ND | 0.50 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AJ |
| | | Dilution Factor: 1 | | | | |
| **Nickel** | **0.24 B** | **4.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G5CRH1AK** |
| | | Dilution Factor: 1 | | | | |
| Selenium | ND | 0.50 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AL |
| | | Dilution Factor: 1 | | | | |
| Silver | ND | 1.0 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AM |
| | | Dilution Factor: 1 | | | | |
| Bismuth | ND | 20.0 | mg/kg | SW846 6010B | 03/02/05 | G5CRH1AN |
| | | Dilution Factor: 1 | | | | |
| **Boron** | **4.7 B** | **20.0** | **mg/kg** | **SW846 6010B** | **03/02/05** | **G5CRH1AP** |
| | | Dilution Factor: 1 | | | | |

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## METHOD BLANK REPORT

### TOTAL Metals

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **MB Lot-Sample #:** F5C160000-584 **Prep Batch #...:** 5075584 | | | | | | |
| Mercury | ND | 0.033 | mg/kg | SW846 7471A | 03/16-03/23/05 | G6DW81AA |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

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

B Estimated result. Result is less than RL.

## LABORATORY CONTROL SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **LCS Lot-Sample#:** F5C020000-047 **Prep Batch #...:** 5061047 | | | | | | | |
| Antimony | 60.9 | 40.7 | mg/kg | 67 | SW846 6010B | 03/02/05 | G5CRH1AQ |
| | | | Dilution Factor: 1 | | | | |
| Arsenic | 161 | 144 | mg/kg | 90 | SW846 6010B | 03/02/05 | G5CRH1AR |
| | | | Dilution Factor: 1 | | | | |
| Barium | 252 | 221 | mg/kg | 88 | SW846 6010B | 03/02/05 | G5CRH1AT |
| | | | Dilution Factor: 1 | | | | |
| Beryllium | 94.4 | 91.0 | mg/kg | 96 | SW846 6010B | 03/02/05 | G5CRH1AU |
| | | | Dilution Factor: 1 | | | | |
| Cadmium | 128 | 121 | mg/kg | 95 | SW846 6010B | 03/02/05 | G5CRH1AV |
| | | | Dilution Factor: 1 | | | | |
| Chromium | 69.5 | 59.4 | mg/kg | 85 | SW846 6010B | 03/02/05 | G5CRH1AW |
| | | | Dilution Factor: 1 | | | | |
| Copper | 148 | 139 | mg/kg | 94 | SW846 6010B | 03/02/05 | G5CRH1AX |
| | | | Dilution Factor: 1 | | | | |
| Lead | 142 | 123 | mg/kg | 86 | SW846 6010B | 03/02/05 | G5CRH1A0 |
| | | | Dilution Factor: 1 | | | | |
| Nickel | 147 | 136 | mg/kg | 93 | SW846 6010B | 03/02/05 | G5CRH1A1 |
| | | | Dilution Factor: 1 | | | | |
| Selenium | 64.2 | 56.8 | mg/kg | 89 | SW846 6010B | 03/02/05 | G5CRH1A2 |
| | | | Dilution Factor: 1 | | | | |
| Silver | 130 | 127 | mg/kg | 97 | SW846 6010B | 03/02/05 | G5CRH1A3 |
| | | | Dilution Factor: 1 | | | | |
| Bismuth | 200 | 191 | mg/kg | 95 | SW846 6010B | 03/02/05 | G5CRH1A4 |
| | | | Dilution Factor: 1 | | | | |
| Boron | 97.4 | 87.3 | mg/kg | 90 | SW846 6010B | 03/02/05 | G5CRH1A5 |
| | | | Dilution Factor: 1 | | | | |

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## LABORATORY CONTROL SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **LCS Lot-Sample#:** F5C160000-584 **Prep Batch #...:** 5075584 | | | | | | | |
| Mercury | 4.04 | 3.87 | mg/kg | 96 | SW846 7471A | 03/16-03/23/05 | G6DW81AC |
| | | | Dilution Factor: 5 | | | | |

**NOTE(S):**

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

STL St. Louis

# WET CHEMISTRY

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**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**General Chemistry**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N **Matrix.....:** SOLID
**Date Sampled...:** 02/10/05 **Date Received..:** 02/23/05
**% Moisture.....:** 3.4

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Phosphate as P, Ortho** | **13.0** | **5.2** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056211** |
| | | Dilution Factor: 1 | | MDL.....: 0.52 | | |
| **pH (solid)** | **9.0** | **0.10** | **No Units** | **SW846 9045C** | **03/08/05** | **5067377** |
| | | Dilution Factor: 1 | | MDL.....: | | |
| **Chloride** | **1.0 B** | **2.1** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056207** |
| | | Dilution Factor: 1 | | MDL.....: 0.45 | | |
| **Fluoride** | **0.26 B** | **1.0** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056208** |
| | | Dilution Factor: 1 | | MDL.....: 0.10 | | |
| **Hexavalent Chromium** | **0.73** | **0.40** | **mg/kg** | **SW846 7196A** | **03/10-03/11/05** | **5070038** |
| | | Dilution Factor: 1 | | MDL.....: 0.25 | | |
| **Nitrate** | **1.0** | **0.21** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056209** |
| | | Dilution Factor: 1 | | MDL.....: 0.041 | | |
| Nitrate/Nitrite as N | ND | 0.50 | mg/kg | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | Dilution Factor: 1 | | MDL.....: 0.027 | | |
| Nitrite | ND | 0.21 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056210 |
| | | Dilution Factor: 1 | | MDL.....: 0.041 | | |
| Nitrogen, as Ammonia | ND | 0.52 | mg/kg | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | Dilution Factor: 1 | | MDL.....: 0.060 | | |
| Oil and Grease (Gravimetric) | ND | 621 | mg/kg | SW846 9071A | 03/07/05 | 5067192 |
| | | Dilution Factor: 3 | | MDL.....: 257 | | |
| **Percent Moisture** | **3.4** | **0.10** | **%** | **MCAWW 160.3 MOD** | **02/27-03/03/05** | **5060219** |
| | | Dilution Factor: 1 | | MDL.....: | | |
| **Sulfate** | **3.2 B** | **5.2** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056212** |
| | | Dilution Factor: 1 | | MDL.....: 1.2 | | |
| Total Cyanide | ND | 0.52 | mg/kg | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | Dilution Factor: 1 | | MDL.....: 0.13 | | |

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MW 3.29.05

**FLUOR HANFORD IC**

**Client Sample ID: B19404**

**General Chemistry**

**Lot-Sample #...:** F5B230353-001 **Work Order #...:** G412N **Matrix.....:** SOLID

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Total Sulfide | ND | 10.4 | mg/kg | SW846 9030 | 02/28/05 | 5059429 |
| | | Dilution Factor: 1 | | MDL.....: 7.5 | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

C1 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**General Chemistry**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G **Matrix.....:** SOLID
**Date Sampled...:** 02/08/05 **Date Received..:** 02/23/05
**% Moisture.....:** 4.6

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Phosphate as P, Ortho** | **7.1 ≠ C** | **5.2** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056211** |
| | | Dilution Factor: 1 | | MDL.....: 0.52 | | |
| **pH (solid)** | **8.8** | **0.10** | **No Units** | **SW846 9045C** | **03/08/05** | **5067377** |
| | | Dilution Factor: 1 | | MDL..... | | |
| **Chloride** | **1.1 B** | **2.1** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056207** |
| | | Dilution Factor: 1 | | MDL.....: 0.46 | | |
| Fluoride | ND | 1.0 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056208 |
| | | Dilution Factor: 1 | | MDL.....: 0.10 | | |
| **Hexavalent Chromium** | **0.73** | **0.40** | **mg/kg** | **SW846 7196A** | **03/10-03/11/05** | **5070038** |
| | | Dilution Factor: 1 | | MDL.....: 0.25 | | |
| **Nitrate** | **1.2** | **0.21** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056209** |
| | | Dilution Factor: 1 | | MDL.....: 0.042 | | |
| Nitrate/Nitrite as N | ND | 0.50 | mg/kg | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | Dilution Factor: 1 | | MDL.....: 0.027 | | |
| Nitrite | ND | 0.21 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056210 |
| | | Dilution Factor: 1 | | MDL.....: 0.042 | | |
| Nitrogen, as Ammonia | ND | 0.52 | mg/kg | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | Dilution Factor: 1 | | MDL.....: 0.061 | | |
| Oil and Grease (Gravimetric) | ND | 336 | mg/kg | SW846 9071A | 03/07/05 | 5067192 |
| | | Dilution Factor: 1.6 | | MDL.....: 139 | | |
| **Percent Moisture** | **4.6** | **0.10** | **%** | **MCAWW 160.3 MOD** | **02/27-03/03/05** | **5060219** |
| | | Dilution Factor: 1 | | MDL..... | | |
| **Sulfate** | **3.1 B** | **5.2** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056212** |
| | | Dilution Factor: 1 | | MDL.....: 1.3 | | |

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3-29-05

**FLUOR HANFORD IC**

**Client Sample ID: B19405**

**General Chemistry**

**Lot-Sample #...:** F5B230353-002 **Work Order #...:** G414G **Matrix.....:** SOLID

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Total Cyanide | ND | 0.52 | mg/kg | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | Dilution Factor: 1 | | MDL.....: 0.13 | | |
| Total Sulfide | ND | 10.5 | mg/kg | SW846 9030 | 02/28/05 | 5059429 |
| | | Dilution Factor: 1 | | MDL.....: 7.6 | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

C Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**General Chemistry**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05
**% Moisture.....:** 3.7

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Phosphate as P, Ortho | ND | 5.2 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056211 |
| | | Dilution Factor: 1 | | MDL.....: 0.52 | | |
| **pH (solid)** | **9.0** | **0.20** | **No Units** | **SW846 9045C** | **02/24/05** | **5056410** |
| | | Dilution Factor: 2 | | MDL.....: | | |
| Chloride | ND | 2.1 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056207 |
| | | Dilution Factor: 1 | | MDL.....: 0.45 | | |
| Fluoride | ND | 1.0 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056208 |
| | | Dilution Factor: 1 | | MDL.....: 0.10 | | |
| Hexavalent Chromium | ND | 0.40 | mg/kg | SW846 7196A | 03/10-03/11/05 | 5070038 |
| | | Dilution Factor: 1 | | MDL.....: 0.25 | | |
| **Nitrate** | **0.55** | **0.21** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056209** |
| | | Dilution Factor: 1 | | MDL.....: 0.041 | | |
| Nitrate/Nitrite as N | ND | 0.50 | mg/kg | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | Dilution Factor: 1 | | MDL.....: 0.027 | | |
| Nitrite | ND | 0.21 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056210 |
| | | Dilution Factor: 1 | | MDL.....: 0.042 | | |
| Nitrogen, as Ammonia | ND | 0.52 | mg/kg | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | Dilution Factor: 1 | | MDL.....: 0.060 | | |
| Oil and Grease (Gravimetric) | ND | 395 | mg/kg | SW846 9071A | 03/02/05 | 5061497 |
| | | Dilution Factor: 1.9 | | MDL.....: 163 | | |
| **Percent Moisture** | **3.7** | **0.10** | **%** | **MCAWW 160.3 MOD** | **02/27-03/03/05** | **5060219** |
| | | Dilution Factor: 1 | | MDL.....: | | |
| Sulfate | ND | 5.2 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056212 |
| | | Dilution Factor: 1 | | MDL.....: 1.2 | | |

(Continued on next page)

**FLUOR HANFORD IC**

**Client Sample ID: B19406**

**General Chemistry**

**Lot-Sample #...:** F5B230353-003 **Work Order #...:** G414M **Matrix.....:** SOLID

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Total Cyanide | ND | 0.52 | mg/kg | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | Dilution Factor: 1 | | MDL.....: 0.13 | | |
| Total Sulfide | ND | 10.4 | mg/kg | SW846 9030 | 02/28/05 | 5059429 |
| | | Dilution Factor: 1 | | MDL.....: 7.5 | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** F5B230353 **Work Order #...:** G414M-SMP G414M-DUP **Matrix.....:** SOLID

**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05

**% Moisture.....:** 3.7

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Nitrate/Nitrite as N | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | ND | mg/kg | 0 | (0-30) | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | | Dilution Factor: 1 | | | | | |
| Chloride | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | 1.1 B | mg/kg | 200 | (0-30) | MCAWW 300.0A | 02/24-02/25/05 | 5056207 |
| | | | Dilution Factor: 1 | | | | | |
| Fluoride | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | ND | mg/kg | 0 | (0-30) | MCAWW 300.0A | 02/24-02/25/05 | 5056208 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrate | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | 0.55 | 0.19 B | mg/kg | 99 | (0-30) | MCAWW 300.0A | 02/24-02/25/05 | 5056209 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrite | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | ND | mg/kg | 0 | (0-30) | MCAWW 300.0A | 02/24-02/25/05 | 5056210 |
| | | | Dilution Factor: 1 | | | | | |
| Phosphate as P, Ortho | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | 2.5 B | mg/kg | 200 | (0-30) | MCAWW 300.0A | 02/24-02/25/05 | 5056211 |
| | | | Dilution Factor: 1 | | | | | |
| Sulfate | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | 1.5 B | mg/kg | 200 | (0-30) | MCAWW 300.0A | 02/24-02/25/05 | 5056212 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrogen, as Ammonia | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | ND | mg/kg | 0 | (0-30) | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | | Dilution Factor: 1 | | | | | |
| Total Cyanide | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | ND | mg/kg | 0 | (0-30) | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | | Dilution Factor: 1 | | | | | |
| Total Sulfide | | | | | | SD Lot-Sample #: | F5B230353-003 | |
| | ND | ND | mg/kg | 0 | (0-30) | SW846 9030 | 02/28/05 | 5059429 |
| | | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

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

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

## MATRIX SPIKE SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID
**Date Sampled...:** 02/03/05 **Date Received..:** 02/18/05

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | % Moisture.....: 3.7 | |
| Hexavalent Chromium | | | WO#: G414M1CH-MS/G414M1CJ-MSD | | | | MS Lot-Sample #: F5B230353-003 | | |
| | ND | 40.0 | 38.0 | mg/kg | 95 | | SW846 7196A | 03/10-03/11/05 | 5070038 |
| | ND | 40.0 | 38.0 | mg/kg | 95 | 0.0 | SW846 7196A | 03/10-03/11/05 | 5070038 |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

## MATRIX SPIKE SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05

**Percnt Moisture:** 14

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chloride | | | Work Order #...: | | G414M1EA | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 20.8 | 20.2 | mg/kg | 97 | MCAWW 300.0A | 02/24-02/25/05 | 5056207 |
| | | | Dilution Factor: 1 | | | | | |
| Fluoride | | | Work Order #...: | | G414M1EC | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 20.8 | 19.5 | mg/kg | 94 | MCAWW 300.0A | 02/24-02/25/05 | 5056208 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrate | | | Work Order #...: | | G414M1ED | | MS Lot-Sample #: | F5B230353-003 |
| | 0.55 | 4.15 | 4.28 | mg/kg | 90 | MCAWW 300.0A | 02/24-02/25/05 | 5056209 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrate/Nitrite as N | | | Work Order #...: | | G414M1D9 | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 5.00 | 6.16 N | mg/kg | 123 | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrite | | | Work Order #...: | | G414M1EE | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 1.04 | 0.839 | mg/kg | 81 | MCAWW 300.0A | 02/24-02/25/05 | 5056210 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrogen, as Ammonia | | | Work Order #...: | | G414M1D6 | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 5.19 | 7.16 N | mg/kg | 138 | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | | Dilution Factor: 1 | | | | | |
| Oil and Grease (Gravimetric) | | | Work Order #...: | | G4PH11AF | | MS Lot-Sample #: | F5B180204-001 |
| | 101 | 3470 | 2910 | mg/kg | 81 | SW846 9071A | 03/02/05 | 5061497 |
| | | | Dilution Factor: 1 | | | | | |
| Oil and Grease (Gravimetric) | | | Work Order #...: | | G4PH11AK | | MS Lot-Sample #: | F5B180204-001 |
| | 101 | 3470 | 2910 | mg/kg | 81 | SW846 9071A | 03/02/05 | 5061497 |
| | | | Dilution Factor: 1 | | | | | |
| Phosphate as P, Ortho | | | Work Order #...: | | G414M1D4 | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 41.5 | 40.6 | mg/kg | 98 | MCAWW 300.0A | 02/24-02/25/05 | 5056211 |
| | | | Dilution Factor: 1 | | | | | |
| Sulfate | | | Work Order #...: | | G414M1D5 | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 41.5 | 47.2 | mg/kg | 114 | MCAWW 300.0A | 02/24-02/25/05 | 5056212 |
| | | | Dilution Factor: 1 | | | | | |

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## MATRIX SPIKE SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID
**Date Sampled...:** 02/14/05 **Date Received..:** 02/23/05

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Total Cyanide | | | Work Order #...: | | G414M1D7 | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 5.19 | 4.51 | mg/kg | 87 | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | | Dilution Factor: 1 | | | | | |
| Total Sulfide | | | Work Order #...: | | G414M1D8 | | MS Lot-Sample #: | F5B230353-003 |
| | ND | 104 | 99.7 | mg/kg | 96 | SW846 9030 | 02/28/05 | 5059429 |
| | | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

**METHOD BLANK REPORT**

**General Chemistry**

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chloride | | Work Order #: G45HN1AA | | MB Lot-Sample #: | F5B250000-207 | |
| | ND | 2.0 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056207 |
| | | Dilution Factor: 1 | | | | |
| Fluoride | | Work Order #: G45HR1AA | | MB Lot-Sample #: | F5B250000-208 | |
| | ND | 1.0 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056208 |
| | | Dilution Factor: 1 | | | | |
| Hexavalent Chromium | | Work Order #: G51NP1AA | | MB Lot-Sample #: | F5C110000-038 | |
| | ND | 0.40 | mg/kg | SW846 7196A | 03/10-03/11/05 | 5070038 |
| | | Dilution Factor: 1 | | | | |
| Nitrate | | Work Order #: G45HV1AA | | MB Lot-Sample #: | F5B250000-209 | |
| | ND | 0.20 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056209 |
| | | Dilution Factor: 1 | | | | |
| Nitrate/Nitrite as N | | Work Order #: G5HA21AA | | MB Lot-Sample #: | F5C030000-427 | |
| | ND | 0.50 | mg/kg | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | Dilution Factor: 1 | | | | |
| Nitrite | | Work Order #: G45HW1AA | | MB Lot-Sample #: | F5B250000-210 | |
| | ND | 0.20 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056210 |
| | | Dilution Factor: 1 | | | | |
| Nitrogen, as Ammonia | | Work Order #: G5TP01AA | | MB Lot-Sample #: | F5C090000-247 | |
| | ND | 0.50 | mg/kg | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | Dilution Factor: 1 | | | | |
| Oil and Grease (Gravimetric) | | Work Order #: G5E041AA | | MB Lot-Sample #: | F5C020000-497 | |
| | ND | 200 | mg/kg | SW846 9071A | 03/02/05 | 5061497 |
| | | Dilution Factor: 1 | | | | |
| Oil and Grease (Gravimetric) | | Work Order #: G5P6D1AA | | MB Lot-Sample #: | F5C080000-192 | |
| | ND | 200 | mg/kg | SW846 9071A | 03/07/05 | 5067192 |
| | | Dilution Factor: 1 | | | | |
| **Phosphate as P, Ortho** | | Work Order #: G45H21AA | | MB Lot-Sample #: | F5B250000-211 | |
| | **2.3 B** | **5.0** | **mg/kg** | **MCAWW 300.0A** | **02/24/05** | **5056211** |
| | | Dilution Factor: 1 | | | | |

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## METHOD BLANK REPORT

### General Chemistry

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Sulfate | | Work Order #: G45H41AA | | MB Lot-Sample #: | F5B250000-212 | |
| | ND | 5.0 | mg/kg | MCAWW 300.0A | 02/24/05 | 5056212 |
| | | Dilution Factor: 1 | | | | |
| Total Cyanide | | Work Order #: G470C1AA | | MB Lot-Sample #: | F5B270000-072 | |
| | ND | 0.50 | mg/kg | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | Dilution Factor: 1 | | | | |
| Total Sulfide | | Work Order #: G48151AA | | MB Lot-Sample #: | F5B280000-429 | |
| | ND | 10.0 | mg/kg | SW846 9030 | 02/28/05 | 5059429 |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

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

B Estimated result. Result is less than RL.

## LABORATORY CONTROL SAMPLE DATA REPORT

### General Chemistry

**Lot-Sample #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chloride | | | WO#:G45HN1AC-LCS/G45HN1AD-LCSD | | | | LCS Lot-Sample#: F5B250000-207 | |
| | 10.0 | 9.84 | mg/kg | 98 | | MCAWW 300.0A | 02/24/05 | 5056207 |
| | 10.0 | 9.71 | mg/kg | 97 | 1.3 | MCAWW 300.0A | 02/24/05 | 5056207 |
| | | | Dilution Factor: 1 | | | | | |
| Fluoride | | | WO#:G45HR1AC-LCS/G45HR1AD-LCSD | | | | LCS Lot-Sample#: F5B250000-208 | |
| | 5.00 | 4.95 | mg/kg | 99 | | MCAWW 300.0A | 02/24/05 | 5056208 |
| | 5.00 | 5.03 | mg/kg | 101 | 1.5 | MCAWW 300.0A | 02/24/05 | 5056208 |
| | | | Dilution Factor: 1 | | | | | |
| Hexavalent Chromium | | | WO#:G51NP1AC-LCS/G51NP1AD-LCSD | | | | LCS Lot-Sample#: F5C110000-038 | |
| | 2.00 | 1.86 | mg/kg | 93 | | SW846 7196A | 03/10-03/11/05 | 5070038 |
| | 2.00 | 1.91 | mg/kg | 96 | 2.6 | SW846 7196A | 03/10-03/11/05 | 5070038 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrate | | | WO#:G45HV1AC-LCS/G45HV1AD-LCSD | | | | LCS Lot-Sample#: F5B250000-209 | |
| | 2.00 | 1.97 | mg/kg | 98 | | MCAWW 300.0A | 02/24/05 | 5056209 |
| | 2.00 | 1.97 | mg/kg | 98 | 0.02 | MCAWW 300.0A | 02/24/05 | 5056209 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrate/Nitrite as N | | | WO#:G5HA21AC-LCS/G5HA21AD-LCSD | | | | LCS Lot-Sample#: F5C030000-427 | |
| | 4.00 | 4.13 | mg/kg | 103 | | MCAWW 353.1 | 03/03/05 | 5062427 |
| | 4.00 | 4.06 | mg/kg | 102 | 1.7 | MCAWW 353.1 | 03/03/05 | 5062427 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrite | | | WO#:G45HW1AC-LCS/G45HW1AD-LCSD | | | | LCS Lot-Sample#: F5B250000-210 | |
| | 0.800 | 0.757 | mg/kg | 95 | | MCAWW 300.0A | 02/24/05 | 5056210 |
| | 0.800 | 0.808 | mg/kg | 101 | 6.6 | MCAWW 300.0A | 02/24/05 | 5056210 |
| | | | Dilution Factor: 1 | | | | | |
| Nitrogen, as Ammonia | | | WO#:G5TP01AC-LCS/G5TP01AD-LCSD | | | | LCS Lot-Sample#: F5C090000-247 | |
| | 4.00 | 4.14 | mg/kg | 104 | | MCAWW 350.1 | 03/08/05 | 5068247 |
| | 4.00 | 4.14 | mg/kg | 104 | 0.0 | MCAWW 350.1 | 03/08/05 | 5068247 |
| | | | Dilution Factor: 1 | | | | | |
| Oil and Grease (Gravimetric) | | | WO#:G5E041AC-LCS/G5E041AD-LCSD | | | | LCS Lot-Sample#: F5C020000-497 | |
| | 3330 | 2700 | mg/kg | 81 | | SW846 9071A | 03/02/05 | 5061497 |
| | 3330 | 2700 | mg/kg | 81 | 0.0 | SW846 9071A | 03/02/05 | 5061497 |
| | | | Dilution Factor: 1 | | | | | |

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## LABORATORY CONTROL SAMPLE DATA REPORT

### General Chemistry

**Lot-Sample #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|---|
| Oil and Grease (Gravimetric) | | | WO#:G5P6D1AC-LCS/G5P6D1AD-LCSD | | | | LCS Lot-Sample#: F5C080000-192 | | |
| | 3330 | 2700 | | mg/kg | 81 | | SW846 9071A | 03/07/05 | 5067192 |
| | 3330 | 2600 | N | mg/kg | 78 | 3.8 | SW846 9071A | 03/07/05 | 5067192 |
| | | | Dilution Factor: 1 | | | | | | |
| Phosphate as P, Ortho | | | WO#:G45H21AC-LCS/G45H21AD-LCSD | | | | LCS Lot-Sample#: F5B250000-211 | | |
| | 40.0 | 43.8 | | mg/kg | 110 | | MCAWW 300.0A | 02/24/05 | 5056211 |
| | 40.0 | 43.0 | | mg/kg | 108 | 1.8 | MCAWW 300.0A | 02/24/05 | 5056211 |
| | | | Dilution Factor: 1 | | | | | | |
| Sulfate | | | WO#:G45H41AC-LCS/G45H41AD-LCSD | | | | LCS Lot-Sample#: F5B250000-212 | | |
| | 40.0 | 36.1 | | mg/kg | 90 | | MCAWW 300.0A | 02/24/05 | 5056212 |
| | 40.0 | 38.8 | | mg/kg | 97 | 7.1 | MCAWW 300.0A | 02/24/05 | 5056212 |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

## LABORATORY CONTROL SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** F5B230353 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| pH (solid) | | | Work Order #: | G46J91AA | LCS Lot-Sample#: | F5B250000-410 | |
| | 7.00 | 7.02 | No Units | 100 | SW846 9045C | 02/24/05 | 5056410 |
| | | | Dilution Factor: 1 | | | | |
| pH (solid) | | | Work Order #: | G5Q851AA | LCS Lot-Sample#: | F5C080000-377 | |
| | 7.00 | 7.02 | No Units | 100 | SW846 9045C | 03/08/05 | 5067377 |
| | | | Dilution Factor: 1 | | | | |
| Total Cyanide | | | Work Order #: | G470C1AC | LCS Lot-Sample#: | F5B270000-072 | |
| | 5.00 | 4.94 | mg/kg | 99 | SW846 9010A | 02/24-02/25/05 | 5058072 |
| | | | Dilution Factor: 1 | | | | |
| Total Sulfide | | | Work Order #: | G48151AC | LCS Lot-Sample#: | F5B280000-429 | |
| | 100 | 96.0 | mg/kg | 96 | SW846 9030 | 02/28/05 | 5059429 |
| | | | Dilution Factor: 1 | | | | |

**NOTE(S):**

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