**Gannett Fleming**

**GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.**
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**Tel: (516) 671-8440**
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# TRANSMITTAL FORM

| TO: Timothy LeBarron | DATE: 11/1/01 | GF JOB NO. 38939.002 |
|---|---|---|
| | CLIENT JOB NO. | |
| | RE: Site Located at 425 Merrick Ave., Westbury, NY Site ID# 130061 | |

X ATTACHED ARE ____ UNDER SEPARATE COVER (VIA _____) THE FOLLOWING ITEMS:

____ SHOP DRAWINGS ____ PLANS ____ SAMPLES ____ SPECIFICATIONS ____ CHANGE ORDER

____ COPY OF LETTER ____ PRINTS ____ _____

| COPIES | DATED | DESCRIPTION |
|---|---|---|
| 1 | 10/17/01 | DUSR for SI/IRM Report Addendum (Gannett Fleming August 2001). |

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NOV 5 2001
Hazardous Waste Remediation
NYSDEC Region 1

*THE ABOVE LISTED ARE TRANSMITTED AS CHECKED BELOW:*

____ FOR APPROVAL ____ CONFORMS AS SUBMITTED ____ RESUBMIT _____ COPIES FOR REVIEW

____ FOR YOUR USE ____ CONFORMS WITH NOTATIONS ____ SUBMIT _____ COPIES FOR DISTRIBUTION

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X FOR REVIEW & COMMENT ____ FOR BIDS DUE _____ ____ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

COPY TO: Girish Desai _____

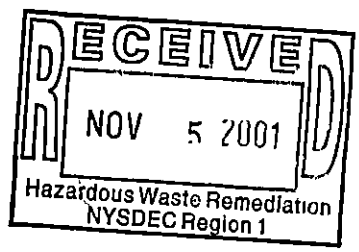
_____ _____

SIGNED _____
Gregory Ernst

FORM DATE 4/98

# Data Validation Report

GANNETT FLEMING
425 Merrick Ave
SDG #: AOK220123, A1012, A1269,
A1395 and A1684



**HEARTLAND**
**ENVIRONMENTAL SERVICES, INC.**

# Data Validation Report

| | |
|---|---|
| SDG#: | AOK220123 |
| Date: | October 17, 2001 |
| Client Name: | Gannett Fleming |
| Project/Site Name: | 425 Merrick Ave |
| Date Sampled: | November 21, 2000 |
| Number of Samples: | 7 Non-Aqueous Sample(s) with 0 MS/MSD(s) |
| Laboratory: | STL |
| Validation Guidance: | National Functional Guidelines for Organic and Inorganic Data |
| QA/QC Level: | NYSDEC ASP Category B |
| Method(s) Utilized: | SW846 Third Edition |
| Analytical Fractions: | PCBs, Metals, Mercury, Cadmium and Chromium |

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Simpson
Paul B. Humburg, President

10-17-01.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(636) 936-1332 • Fax (636) 936-1335

**SDG# A0K220123**

## Samples and Fractions Reviewed

Sample Identifications Analytical Fraction

| GANNETT FLEMING ID | MATRIX | PCB | | MET | | Hg | | Cd | | Cr | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MR-1 | SOIL | | X | | | | X | | | | |
| MR-2 | SOIL | | X | | | | X | | X | | X |
| MR-3 | SOIL | | X | | X | | | | | | |
| MR-4 | SOIL | | X | | | | X | | | | X |
| MR-5 | SOIL | | X | | | | X | | | | X |
| MR-6 | SOIL | | X | | | | X | | | | |
| MR-7 | SOIL | | X | | | | X | | | | |
| Total Billable Samples (Water/Soil) | | 0 | 7 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 3 |

PCB= PCBs
MET= Metals
Hg= Mercury
Cd= Cadmium
Cr= Chromium

# DATA ASSESSMENT NARRATIVES

# DATA ASSESSMENT NARRATIVE

## PCBs

### General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8082; the National Functional Guidelines for Organic Data Review, October 1999, as applicable; and NYSDEC ASP Category B requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

### SDG # A0K220123

A validation was performed on the PCB Data from SDG A0K220123. The data was evaluated based on the following parameters:

| | | |
|---|---|---|
| * | • | Data Completeness |
| * | • | Holding Times |
| * | • | GC Performance |
| * | • | Calibration |
| * | • | Blanks |
| * | • | Surrogate Recoveries |
| * | • | Matrix Spike/Matrix Spike Duplicates |
| * | • | Field Duplicates |
| * | • | Compound Identification |
| * | • | Compound Quantitation |

* - All criteria were met for this parameter.

### Surrogates

The sample listed below exhibited a low TCX recovery. The positive results are qualified as estimated, J, and the non-detect results are qualified as estimated, UJ.

MR-4

### System Performance and Overall Assessment

The data required qualifications.

# GLOSSARY OF DATA QUALIFIERS

## QUALIFICATION CODES

**U** = Not detected

**J** = Estimated value

**UJ** = Reported quantitation limit is qualified as estimated

**R** = Result is rejected and unusable

**NJ** = Presumptive evidence for the presence of the material at an estimated value

**K** = Result is biased high

**L** = Result is biased low

**D** = Result value is based on dilution analysis

## BLANK QUALIFICATION CODES

**CRQL** = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

**U** = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

**No Action** = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

# SUMMARY OF DATA QUALIFICATIONS

| SAMPLE ID | COMPOUND ID | DL | QL |
|---|---|---|---|
| MR-4 | ALL | +/- | J/UJ |

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

# DATA ASSESSMENT NARRATIVE
# METALS

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 methods for Metals and the Functional Guidelines for Inorganic Data Validation, February 1994 requirements and NYSDEC ASP Category B. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

## SDGs # A0K220132

A validation was performed on the Metals Data from SDG A0K220132. The data was evaluated based on the following parameters.

| | | |
|---|---|---|
| * | ● | Data Completeness |
| * | ● | Holding Times |
| * | ● | Calibrations |
| * | ● | Blanks |
| * | ● | Interferences |
| | ● | Matrix Spike Recovery |
| * | ● | Matrix Duplicates |
| * | ● | Field Duplicates |
| * | ● | Laboratory Control Samples |
| * | ● | Serial Dilutions |

* - All criteria were met for this parameter.

## Matrix Spike Recovery results

1. The matrix spike recovery results for soils for Chromium (29%) was below 30%. All positive results are qualified as estimated, "J" and non-detect results are rejected.

2. The matrix spike recovery results for soils for Antimony (56%), Calcium (69%), Copper (63%) and Manganese (43%) were below the lower control limits (>30% but <75%). All positive and non-detect results are qualified as estimated, "J" or "UJ".

# SUMMARY OF DATA QUALIFICATIONS

| Sample ID | Analyte | DL | QL |
|---|---|---|---|
| 1.all soil samples | Cr. | + | J |
| | | U | UJ |
| 2.all soil samples | Sb, Ca, Cu and Mn. | +/U | J/UJ |

ANNOTATED FORM Is

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 001

Sample WT/Vol: 30.08 / g
Work Order: DQAHE1AA
Dilution factor: 1
Moisture %:15

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q |
|---|---|---|---|
| 12674-11-2 | PCB-1016 | 39 | U |
| 11104-28-2 | PCB-1221 | 39 | U |
| 11141-16-5 | PCB-1232 | 39 | U |
| 53469-21-9 | PCB-1242 | 39 | U |
| 12672-29-6 | PCB-1248 | 39 | U |
| 11097-69-1 | PCB-1254 | 72 | |
| 11096-82-5 | PCB-1260 | 39 | U |

EVK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 002

Sample WT/Vol: 30.16 / g
Work Order: DQAHH1AA
Dilution factor: 1
Moisture %:4.0

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-2

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q |
|---|---|---|---|
| 12674-11-2 | PCB-1016 | 34 | U |
| 11104-28-2 | PCB-1221 | 34 | U |
| 11141-16-5 | PCB-1232 | 34 | U |
| 53469-21-9 | PCB-1242 | 34 | U |
| 12672-29-6 | PCB-1248 | 34 | U |
| 11097-69-1 | PCB-1254 | 34 | U |
| 11096-82-5 | PCB-1260 | 34 | U |

EAK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 003

Sample WT/Vol: 30 / g
Work Order: DQAHK1AA
Dilution factor: 1
Moisture %:5.2

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-3

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q |
|---|---|---|---|
| 12674-11-2 | PCB-1016 | 35 | U |
| 11104-28-2 | PCB-1221 | 35 | U |
| 11141-16-5 | PCB-1232 | 35 | U |
| 53469-21-9 | PCB-1242 | 35 | U |
| 12672-29-6 | PCB-1248 | 35 | U |
| 11097-69-1 | PCB-1254 | 35 | U |
| 11096-82-5 | PCB-1260 | 35 | U |

EJK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 004

Sample WT/Vol: 30.15 / g
Work Order: DQAHL1AA
Dilution factor: 1
Moisture %:8.4

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-4

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q | |
|---|---|---|---|---|
| 12674-11-2 | PCB-1016 | 36 | U | UJ |
| 11104-28-2 | PCB-1221 | 36 | U | |
| 11141-16-5 | PCB-1232 | 36 | U | |
| 53469-21-9 | PCB-1242 | 36 | U | |
| 12672-29-6 | PCB-1248 | 36 | U | |
| 11097-69-1 | PCB-1254 | 77 | | J |
| 11096-82-5 | PCB-1260 | 36 | U | UJ |

EAK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 005

Sample WT/Vol: 30 / g
Work Order: DQAHN1AA
Dilution factor: 1
Moisture %:3.7

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-5

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q |
|---|---|---|---|
| 12674-11-2 | PCB-1016 | 34 | U |
| 11104-28-2 | PCB-1221 | 34 | U |
| 11141-16-5 | PCB-1232 | 34 | U |
| 53469-21-9 | PCB-1242 | 34 | U |
| 12672-29-6 | PCB-1248 | 34 | U |
| 11097-69-1 | PCB-1254 | 34 | U |
| 11096-82-5 | PCB-1260 | 34 | U |

EDK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 006

Sample WT/Vol: 30.09 / g
Work Order: DQAHP1AA
Dilution factor: 1
Moisture %:2.4

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-6

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q |
|---|---|---|---|
| 12674-11-2 | PCB-1016 | 34 | U |
| 11104-28-2 | PCB-1221 | 34 | U |
| 11141-16-5 | PCB-1232 | 34 | U |
| 53469-21-9 | PCB-1242 | 34 | U |
| 12672-29-6 | PCB-1248 | 35 | |
| 11097-69-1 | PCB-1254 | 34 | U |
| 11096-82-5 | PCB-1260 | 34 | U |

EKK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) SO
Method: SW846 8082
PCBs (8082)

Lab Sample ID:A0K220123 007

Sample WT/Vol: 30.03 / g
Work Order: DQAHW1AA
Dilution factor: 1
Moisture %:3.9

Date Received: 11/22/00
Date Extracted:11/22/00
Date Analyzed: 12/05/00

QC Batch: 0327217

Client Sample Id: MR-7

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg | Q |
|---|---|---|---|
| 12674-11-2 | PCB-1016 | 34 | U |
| 11104-28-2 | PCB-1221 | 34 | U |
| 11141-16-5 | PCB-1232 | 34 | U |
| 53469-21-9 | PCB-1242 | 34 | U |
| 12672-29-6 | PCB-1248 | 34 | U |
| 11097-69-1 | PCB-1254 | 34 | U |
| 11096-82-5 | PCB-1260 | 34 | U |

EKK
10/12/01

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-1

TOTAL Metals

Lot-Sample #...: A0K220123-001 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/27-11/28/00 | DQAHE1AC |
| | | Dilution Factor: 1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

PBH 10/4/01

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-2

TOTAL Metals

Lot-Sample #...: A0K220123-002 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 4.0

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Cadmium | ND | 0.52 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHH1A |
| | | Dilution Factor: 1 | | | | |
| Chromium | 6.5 | 1.0 | mg/kg J1 | SW846 6010B | 11/27-11/29/00 | DQAHH1A |
| | | Dilution Factor: 1 | | | | |
| Mercury | ND | 0.10 | mg/kg PBW | SW846 7471A | 11/27-11/28/00 | DQAHH1A |
| | | Dilution Factor: 1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

PBW 10/4/01

016

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-3

TOTAL Metals

Lot-Sample #...: A0K220123-003 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 5.2

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Aluminum | 3280 | 21.1<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Arsenic | 1.5 | 1.1<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Lead | 7.5 | 0.32<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Antimony | ND | 6.3<br>Dilution Factor: 1 | mg/kg UJ2 | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Barium | ND | 21.1<br>Dilution Factor: 1 | mg/kg PBU | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Selenium | ND | 0.53<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Beryllium | ND | 0.53<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Thallium | ND | 1.1<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Cadmium | ND | 0.53<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Calcium | 1400 | 528<br>Dilution Factor: 1 | mg/kg J2 PBU | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Chromium | 3.3 | 1.1<br>Dilution Factor: 1 | mg/kg J1 PBU | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Cobalt | ND | 5.3<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Copper | 2.8 | 2.6<br>Dilution Factor: 1 | mg/kg J2 PBU | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| Iron | 3570 | 10.6<br>Dilution Factor: 1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |

(Continued on next page)

PBU 10/4/01

017

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-3

TOTAL Metals

Lot-Sample #...: A0K220123-003 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Magnesium | ND | 528 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Manganese | 72.8 | 1.6 | mg/kg J2 | SW846 6010B PBW | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Nickel | ND | 4.2 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Potassium | ND | 528 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Silver | ND | 1.1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Sodium | ND | 528 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Vanadium | ND | 5.3 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Zinc | 11.5 | 2.1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |
| Mercury | ND | 0.11 | mg/kg | SW846 7471A | 11/27-11/28/00 | DQAHK1A |
| | | Dilution Factor: 1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

PBW 10/4/01

018

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-4

TOTAL Metals

Lot-Sample #...: A0K220123-004 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 8.4

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Chromium | 8.1 | 1.1 | mg/kg | SW846 6010B | 11/27-11/29/00 | DQAHL1AC |
| | | Dilution Factor: 1 | | | | |
| Mercury | 3.9 | 0.55 | mg/kg | SW846 7471A | 11/27-11/28/00 | DQAHL1AC |
| | | Dilution Factor: 5 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J1
PBW

PBW 10/4/01

019

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-5

TOTAL Metals

Lot-Sample #...: A0K220123-005 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 3.7

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Chromium | 4.8 | 1.0 | mg/kg J1 | SW846 6010B | 11/27-11/29/00 | DQAHN1A |
| | | Dilution Factor: 1 | | | | |
| Mercury | ND | 0.10 | mg/kg | SW846 7471A | 11/27-11/28/00 | DQAHN1A |
| | | Dilution Factor: 1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

10/4/01

020

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-6

TOTAL Metals

Lot-Sample #...: A0K220123-006 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 2.4

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Mercury | ND | 0.10 | mg/kg | SW846 7471A | 11/27-11/28/00 | DQAHP1AC |
| | | Dilution Factor: 1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

PBW 10/4/01

021

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: MR-7

TOTAL Metals

Lot-Sample #...: A0K220123-007 Matrix.....: SO
Date Sampled...: 11/21/00 Date Received..: 11/22/00
% Moisture.....: 3.9

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 0332111 | | | | | | |
| Mercury | ND | 0.10 | mg/kg | SW846 7471A | 11/27-11/28/00 | DQAHW1A |
| | Dilution Factor: 1 | | | | | |

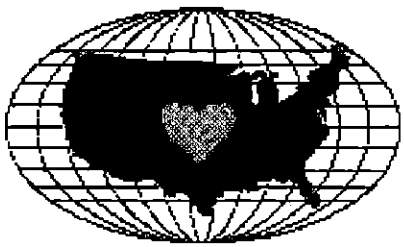
NOTE(S):

Results and reporting limits have been adjusted for dry weight.

10/4/01

022

# DATA VALIDATION WORKSHEETS



**HEARTLAND**
**ENVIRONMENTAL SERVICES, INC.**

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

| | |
|---|---|
| **CASE/SDG NUMBER:** | **A0K220123** |
| **LABORATORY:** | **STL North Canton** |
| **CLIENT:** | **Gannett Fleming** |
| **PROJECT:** | **425 Merrick Ave** |
| **REVIEWER:** | **Erica K. Ketcham** |
| **DATE:** | **October 12, 2001** |
| **QA/QC LEVEL:** | **NYSDEC ASP Category B** |
| **STATEMENT OF WORK:** | **SW-846 Method 8082** |
| **ANALYSIS MODIFICATIONS:** | **none** |
| **NUMBER OF SAMPLES:** | **7** |
| **SAMPLE MATRIX:** | **soil** |
| **NUMBER OF MS/MSDs:** | **0** |

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## HOLDING TIMES

| | Water | Soil | Analysis |
|---|---|---|---|
| CLP: | 7 days from sampling | 14 days from sampling | 40 days from extract. |
| SW846: | 7 days from sampling | 14 days from sampling | 40 days from extract. |
| Region I: | 7 days from sampling | 7 days from sampling | 40 days from extract. |
| Region II: | 7 days from sampling | 7 days from sampling | 40 days from extract. |
| Region III: | 7 days from sampling | 7 days from sampling | 40 days from extract. |
| NYSDEC: | 5 days from VTSR | 5 days from VTSR | 40 days from extract. |

DA - The number of days that the holding time was exceeded.

| | |
|---|---|
| DA ≤ 5: | Qualify all positive results as estimated (J). |
| DA > 5 ≤ 15: | Qualify all positive results as estimated (J) and all non detects as estimated (UJ). |
| DA > 15: | Qualify all positive results as estimated (J) and reject (R) all non detects. |

**Soils:** **s - 11/21/00 VTSR - 11/22/00 e - 11/22/00 a - 12/05/00**

**All associated samples met holding time requirements for extraction and/or analysis. No qualifications are required.**

Report Date: 07-Dec-2000 13:02

## Calibration History

Method : \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\HP2PCBF.m
Start Cal Date: 12-AUG-2000 01:28
End Cal Date : 01-DEC-2000 08:25
Last Cal Level: 5
Last Cal Type : Initial Calibration

Initial Calibration

| Injection Date | Sublist | Calibration File |
|---|---|---|
| Cal Level: 1 , Cal Amount: 0.1000 | | |
| 01-DEC-2000 07:19 | 1-AR1232 | 024F2401.D |
| 01-DEC-2000 05:56 | 2-AR1242 | 019F1901.D |
| 01-DEC-2000 04:33 | 3-AR1248 | 014F1401.D |
| 01-DEC-2000 03:10 | 9-AR2154 | 009F0901.D |
| 01-DEC-2000 01:47 | 12-AR1660td | 004F0401.D |
| Cal Level: 2 , Cal Amount: 0.2000 | | |
| 01-DEC-2000 07:35 | 1-AR1232 | 025F2501.D |
| 01-DEC-2000 06:12 | 2-AR1242 | 020F2001.D |
| 01-DEC-2000 04:50 | 3-AR1248 | 015F1501.D |
| 01-DEC-2000 03:26 | 9-AR2154 | 010F1001.D |
| 01-DEC-2000 02:04 | 12-AR1660td | 005F0501.D |
| Cal Level: 3 , Cal Amount: 0.5000 | | |
| 01-DEC-2000 07:52 | 1-AR1232 | 026F2601.D |
| 01-DEC-2000 06:29 | 2-AR1242 | 021F2101.D |
| 01-DEC-2000 05:06 | 3-AR1248 | 016F1601.D |
| 01-DEC-2000 03:43 | 9-AR2154 | 011F1101.D |
| 01-DEC-2000 02:20 | 12-AR1660td | 006F0601.D |
| Cal Level: 4 , Cal Amount: 1.000 | | |
| 01-DEC-2000 08:08 | 1-AR1232 | 027F2701.D |
| 01-DEC-2000 06:45 | 2-AR1242 | 022F2201.D |
| 01-DEC-2000 05:23 | 3-AR1248 | 017F1701.D |
| 01-DEC-2000 04:00 | 9-AR2154 | 012F1201.D |
| 01-DEC-2000 02:37 | 12-AR1660td | 007F0701.D |
| Cal Level: 5 , Cal Amount: 2.000 | | |
| 01-DEC-2000 08:25 | 1-AR1232 | 028F2801.D |
| 01-DEC-2000 07:02 | 2-AR1242 | 023F2301.D |
| 01-DEC-2000 05:39 | 3-AR1248 | 018F1801.D |
| 01-DEC-2000 04:16 | 9-AR2154 | 013F1301.D |
| 01-DEC-2000 02:53 | 12-AR1660td | 008F0801.D |

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Continuing Calibration

| | | |
|---|---|---|
| 01-DEC-2000 07:52 | 1-AR1232 | 026F2601.D |
| 01-DEC-2000 06:29 | 2-AR1242 | 021F2101.D |
| 01-DEC-2000 05:06 | 3-AR1248 | 016F1601.D |
| 01-DEC-2000 03:43 | 9-AR2154 | 011F1101.D |
| 01-DEC-2000 02:20 | 12-AR1660td | 006F0601.D |

Report Date : 07-Dec-2000 13:02

STL - North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 12-AUG-2000 01:28
End Cal Date : 01-DEC-2000 08:25
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\HP2PCBF.m
Cal Date : 07-Dec-2000 10:30 salmonsr
Curve Type : Average

Calibration File Names:
Level 1: \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\024F2401.D
Level 2: \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\025F2501.D
Level 3: \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\026F2601.D
Level 4: \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\027F2701.D
Level 5: \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\028F2801.D

| Compound | 0.10000 Level 1 | 0.20000 Level 2 | 0.50000 Level 3 | 1.000 Level 4 | 2.000 Level 5 | RRF | % RSD |
|---|---|---|---|---|---|---|---|
| 2 AROCLOR-1221(1) | 348330 | 330785 | 304480 | 298600 | 285732 | 313585 | 8.109 |
| (2) | 251930 | 233540 | 212698 | 201536 | 189432 | 217827 | 11.495 |
| (3) | 881810 | 803260 | 748870 | 743120 | 721045 | 779621 | 8.291 |
| 3 AROCLOR-1016(1) | 654280 | 581935 | 543026 | 535261 | 521204 | 567161 | 9.463 |
| (2) | 1058790 | 913540 | 886016 | 877507 | 844043 | 915979 | 9.126 |
| (3) | 1688140 | 1555430 | 1620760 | 1686376 | 1695236 | 1649188 | 3.666 |
| (4) | 1021120 | 906035 | 910568 | 924268 | 914334 | 935265 | 5.182 |
| (5) | 715090 | 650395 | 650002 | 676607 | 678880 | 675787 | 3.713 |
| 4 AROCLOR-1232(1) | 738320 | 687660 | 647818 | 630435 | 592345 | 659316 | 8.478 |
| (2) | 442080 | 419720 | 388192 | 369579 | 341848 | 392284 | 10.124 |
| (3) | 695040 | 655845 | 661638 | 663773 | 648932 | 665046 | 2.666 |
| (4) | 423720 | 408490 | 391632 | 377550 | 360285 | 392335 | 6.362 |
| (5) | 303360 | 295410 | 284712 | 268179 | 251293 | 280591 | 7.492 |
| 5 AROCLOR-1242(1) | 511240 | 492850 | 445132 | 434087 | 411053 | 458866 | 9.109 |
| (2) | 798680 | 738930 | 686066 | 666899 | 638138 | 705743 | 9.019 |
| (3) | 1246980 | 1213040 | 1203902 | 1236499 | 1230096 | 1226103 | 1.426 |
| (4) | 758640 | 722780 | 675574 | 673654 | 663495 | 698829 | 5.801 |
| (5) | 622550 | 588048 | 540520 | 536459 | 521866 | 561888 | 7.482 |
| 6 AROCLOR-1248(1) | 421500 | 394630 | 360136 | 332886 | 323215 | 366473 | 11.301 |
| (2) | 744680 | 706975 | 704080 | 689371 | 701806 | 709376 | 2.936 |
| (3) | 1081340 | 1010670 | 1026002 | 1002250 | 1024502 | 1028953 | 3.003 |
| (4) | 790600 | 728585 | 726218 | 708379 | 713921 | 733535 | 4.497 |
| (5) | 549470 | 516025 | 504926 | 484136 | 487098 | 508331 | 5.204 |
| 7 AROCLOR-1254(1) | 676080 | 613035 | 561582 | 550904 | 539403 | 588201 | 9.625 |
| (2) | 1260720 | 1159315 | 1120024 | 1124290 | 1133481 | 1159566 | 5.051 |
| (3) | 1650520 | 1565700 | 1575140 | 1623586 | 1647385 | 1612460 | 2.475 |
| (4) | 1187180 | 1102450 | 1089280 | 1119062 | 1132493 | 1126093 | 3.363 |
| (5) | 1031070 | 932200 | 903140 | 901963 | 906840 | 935043 | 5.891 |

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Report Date : 07-Dec-2000 13:02

## STL - North Canton

## INITIAL CALIBRATION DATA

Start Cal Date : 12-AUG-2000 01:28
End Cal Date : 01-DEC-2000 08:25
Quant Method : ESTD
Origin : Disabled
Target Version : 4.04
Integrator : Falcon
Method file : \\qcanoh04\dd\chem\GCS\a2hp2.i\01201IC-1.b\HP2PCBF.m
Cal Date : 07-Dec-2000 10:30 salmonsr
Curve Type : Average

| Compound | 0.10000 Level 1 | 0.20000 Level 2 | 0.50000 Level 3 | 1.000 Level 4 | 2.000 Level 5 | RRF | % RSD | |
|---|---|---|---|---|---|---|---|---|
| 8 AROCLOR-1260(1) | 1320620 | 1151075 | 1160970 | 1179386 | 1168579 | 1196126 | 5.883 | |
| (2) | 1857210 | 1672470 | 1715328 | 1753935 | 1751338 | 1750056 | 3.909 | |
| (3) | 1539220 | 1446330 | 1464256 | 1588392 | 1627078 | 1533055 | 5.073 | |
| (4) | 2069970 | 1953445 | 2084862 | 2146163 | 2176275 | 2086143 | 4.123 | |
| (5) | 1194870 | 1094680 | 1133022 | 1135154 | 1160646 | 1143674 | 3.241 | |
| 10 AROCLOR-1262(1) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (2) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (3) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (4) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (5) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| 12 AROCLOR-1268(1) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (2) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (3) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (4) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| (5) | ***** | ***** | ***** | ***** | ***** | ***** | ***** | <- |
| $ 1 TCMX | 33393600 | 30041700 | 31924160 | 33468120 | 34937080 | 32552932 | 5.591 | |
| $ 9 DCB | 21669200 | 19532700 | 19147160 | 18610320 | 18605880 | 19513052 | 6.493 | |

029

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## GC INITIAL MASS CALIBRATION

**Date of Calibration:** **12/01/00**

**Instrument ID:** **a2hp2.i**

**Calculations:**

Calculate the CF of one of the compounds used in the initial calibration. Enter the compound name and the reported CF.

Compound Name: Aroclor-1254

Lab Value: 676080

| | |
|---|---|
| Area of Compound | 67608 |
| Conc. of Compound | 0.1 |
| Calculated CF | 676080 |

Calculate the %RSD of one of the compounds used in the initial calibration. Enter the compound name and the reported %RSD.

Compound Name: Aroclor-1248 (peak 5)

Lab Value: 5.204

| | |
|---|---|
| CF of L1 STD | 549470 |
| CF of L2 STD | 516025 |
| CF of L3 STD | 504926 |
| CF of L4 STD | 484136 |
| CF of L5 STD | 487098 |
| % RSD | 5.204 |

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: STL - NORTH CANTON Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: A0K220123

GC Column: DB-5.625 ID: 0.32 (mm) Init. Calib. Date(s): 08/12/00 12/01/00

Instrument ID: A2HP2

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

| | MEAN SURROGATE RT FROM INITIAL CALIBRATION | | | | | |
|---|---|---|---|---|---|---|
| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | RT # | RT # |
| 01 | | 1232 | 12/04/00 | 1602 | | |
| 02 | | 1242 | 12/04/00 | 1619 | | |
| 03 | | 1248 | 12/04/00 | 1636 | | |
| 04 | | 2154 | 12/04/00 | 1652 | | |
| 05 | | 1660 | 12/05/00 | 0746 | | |
| 06 | DQAJ0BLK | DQAJ01AA | 12/05/00 | 1104 | | |
| 07 | DQAJ0CHK | DQAJ01AC | 12/05/00 | 1121 | | |
| 08 | | 1660 | 12/05/00 | 1227 | | |
| 09 | MR-1 | DQAHE1AA | 12/05/00 | 1603 | | |
| 10 | MR-2 | DQAHH1AA | 12/05/00 | 1620 | | |
| 11 | MR-3 | DQAHK1AA | 12/05/00 | 1636 | | |
| 12 | MR-4 | DQAHL1AA | 12/05/00 | 1653 | | |
| 13 | MR-5 | DQAHN1AA | 12/05/00 | 1709 | | |
| 14 | MR-6 | DQAHP1AA | 12/05/00 | 1726 | | |
| 15 | MR-7 | DQAHW1AA | 12/05/00 | 1743 | | |
| 16 | | 1660 | 12/05/00 | 1816 | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
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| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |

QC LIMITS

# Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: \\qcanoh04\dd\chem\GCS\a2hp2.i\01204A-1.b\059F5901.D
Report Date: 05-Dec-2000 12:09

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 059F5901.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\01204A-1.b\HP2PCBF.m

Injection Date: 05-DEC-2000 07:46
Init. Cal. Date(s): 12-AUG-2000 01-DEC-2000
Init. Cal. Times: 01:28 08:25
Quant Type: ESTD

| | COMPOUND | RRF | RF1 | MIN RRF | %D | MAX %D | |
|---|---|---|---|---|---|---|---|
| $ | 1 TCMX | 32552932 | 37635960 | 0.010 | 15.6 | 15.0 | <- NA |
| | 3 AROCLOR-1016 (1) | 567141 | 631984 | 0.010 | 11.4 | 15.0 | |
| | (2) | 915979 | 1016876 | 0.010 | 11.0 | 15.0 | |
| | (3) | 1649188 | 1903468 | 0.010 | 15.4 | 15.0 | <- OK |
| | (4) | 935265 | 1057690 | 0.010 | 13.1 | 15.0 | |
| | (5) | 675787 | 761540 | 0.010 | 12.7 | 15.0 | |
| | 8 AROCLOR-1260 (1) | 1196126 | 1325264 | 0.010 | 10.8 | 15.0 | |
| | (2) | 1750056 | 1959308 | 0.010 | 12.0 | 15.0 | |
| | (3) | 1533055 | 1577996 | 0.010 | 2.9 | 15.0 | OK |
| | (4) | 2086143 | 2405542 | 0.010 | 15.3 | 15.0 | <- |
| | (5) | 1143674 | 1290270 | 0.010 | 12.8 | 15.0 | |
| $ | 9 DCB | 19513052 | 22512880 | 0.010 | 15.4 | 15.0 | <- NA |

032

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## GC CONTINUING MASS CALIBRATION

**Standard ID:** **1660 (12/05/00 07:46)**

**Calculations:**

Calculate the CF of one of the compounds used in the continuing calibration. Enter the compound name and the reported CF.

Compound Name: Aroclor-1016 (peak 4)

Lab Value: 1057690

| | |
|---|---|
| Area of Compound | 528845 |
| Conc. of Compound | 0.5 |
| Calculated CF | 1057690 |

Calculate the %D of one of the compounds used in the continuing calculation. Enter the compound name and the reported %D.

Compound Name: Aroclor-1260 (peak 3)

Lab Value: 2.9

| | |
|---|---|
| Average CF | 1533055 |
| CF of Calibration Check | 1577996 |
| % D | -2.9 |

Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\01204A-1.b\076F7601.D
Report Date: 06-Dec-2000 08:15

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 076F7601.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\01204A-1.b\HP2PCBF.m

Injection Date: 05-DEC-2000 12:27
Init. Cal. Date(s): 12-AUG-2000 01-DEC-2000
Init. Cal. Times: 01:28 08:25
Quant Type: ESTD

| | COMPOUND | RRF | RF1 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|---|
| $ | 1 TCMX | 32552932 | 33567160 | 0.010 | 3.1 | 15.0 |
| | 3 AROCLOR-1016 (1) | 567141 | 569408 | 0.010 | 0.4 | 15.0 |
| | (2) | 915979 | 930726 | 0.010 | 1.6 | 15.0 |
| | (3) | 1649188 | 1726006 | 0.010 | 4.7 | 15.0 |
| | (4) | 935265 | 960116 | 0.010 | 2.7 | 15.0 |
| | (5) | 675787 | 696366 | 0.010 | 3.0 | 15.0 |
| | 8 AROCLOR-1260 (1) | 1196126 | 1255676 | 0.010 | 5.0 | 15.0 |
| | (2) | 1750056 | 1861220 | 0.010 | 6.4 | 15.0 |
| | (3) | 1533055 | 1504628 | 0.010 | -1.9 | 15.0 |
| | (4) | 2086143 | 2329858 | 0.010 | 11.7 | 15.0 |
| | (5) | 1143674 | 1269408 | 0.010 | 11.0 | 15.0 |
| $ | 9 DCB | 19513052 | 21919680 | 0.010 | 12.3 | 15.0 |

034

Data File: \\QCANOH04\DD\chem\GCS\a2hp2.i\01204A-1.b\097F9701.D
Report Date: 06-Dec-2000 08:24

STL - North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp2.i
Lab File ID: 097F9701.D
Analysis Type:
Lab Sample ID: 1660
Method: \\QCANOH04\DD\chem\GCS\a2hp2.i\01204A-1.b\HP2PCBF.m

Injection Date: 05-DEC-2000 18:16
Init. Cal. Date(s): 12-AUG-2000 01-DEC-2000
Init. Cal. Times: 01:28 08:25
Quant Type: ESTD

| | COMPOUND | RRF | RF1 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|---|
| $ | 1 TCMX | 32552932 | 33037160 | 0.010 | 1.5 | 15.0 |
| | 3 AROCLOR-1016(1) | 567141 | 561208 | 0.010 | -1.0 | 15.0 |
| | (2) | 915979 | 910140 | 0.010 | -0.6 | 15.0 |
| | (3) | 1649188 | 1697520 | 0.010 | 2.9 | 15.0 |
| | (4) | 935265 | 952836 | 0.010 | 1.9 | 15.0 |
| | (5) | 675787 | 688136 | 0.010 | 1.8 | 15.0 |
| | 8 AROCLOR-1260(1) | 1196126 | 1258010 | 0.010 | 5.2 | 15.0 |
| | (2) | 1750056 | 1848306 | 0.010 | 5.6 | 15.0 |
| | (3) | 1533055 | 1553224 | 0.010 | 1.3 | 15.0 |
| | (4) | 2086143 | 2340462 | 0.010 | 12.2 | 15.0 |
| | (5) | 1143674 | 1274906 | 0.010 | 11.5 | 15.0 |
| $ | 9 DCB | 19513052 | 22397480 | 0.010 | 14.8 | 15.0 |

035

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION
## BLANK SUMMARY

1. Blank qualification guidelines:

   a) If a compound is found in the blank but not in the sample, no action is taken.

   b) Any compound detected in the sample, which was also detected in the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.

   c) The reviewer should take note that the blank analysis may not involve the same weights, volumes or dilution factors as associated samples. These factors must be taken into consideration when applying the 5X and 10X criteria.

   d) In addition, the reviewer must review the trip blanks, rinseate blanks and field blanks (if they were submitted with the data package) and all associated samples. Apply the same data validation guidelines used in assessing the method blanks.

   e) Qualification/Action codes:

      U - The sample result is greater than the CRQL and less than five times (5X) the blank value. Cross out the "B" flag and qualify the sample result with a "U".

      CRQL - The sample result is less than the CRQL and less than five times (5X) the blank value. Reject the sample result, cross out the "B" flag, and report the CRQL.

      No Action - The sample result is greater than the CRQL and greater than five times (5X) the blank value.

SW846 8082 METHOD BLANK SUMMARY

BLANK WORKORDER NO.: DQAJ01AA

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLCAN

SDG Number:

Lab File ID: 071F7101.

Lot Number: A0K220123

Matrix: SOLID

Extraction Method: 3550

Date Extracted: 11/22/00

Date Analyzed(1): 12/05/00

Date Analyzed(2): N/A

Time Analyzed(1): 11:04

Time Analyzed(2): N/A

Instrument ID(1): P2

Instrument ID(2): N/A

GC Column(1): N/A ID: N/A GC Column(2): N/A ID: N/A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

| | CLIENT ID. | SAMPLE WORK ORDER # | DATE ANALYZED(1) | DATE ANALYZED(2) |
|---|---|---|---|---|
| 01 | INTRA-LAB QC | DQACF1AC | 12/05/00 | N/A |
| 02 | LAB MS/MSD | DQACF1AD S | 12/05/00 | N/A |
| 03 | LAB MS/MSD | DQACF1AE D | 12/05/00 | N/A |
| 04 | INTRA-LAB QC | DQAFX1AC | 12/05/00 | N/A |
| 05 | LAB MS/MSD | DQAFX1AF S | 12/05/00 | N/A |
| 06 | LAB MS/MSD | DQAFX1AG D | 12/05/00 | N/A |
| 07 | MR-1 | DQAHE1AA | 12/05/00 | N/A |
| 08 | MR-2 | DQAHH1AA | 12/05/00 | N/A |
| 09 | MR-3 | DQAHK1AA | 12/05/00 | N/A |
| 10 | MR-4 | DQAHL1AA | 12/05/00 | N/A |
| 11 | MR-5 | DQAHN1AA | 12/05/00 | N/A |
| 12 | MR-6 | DQAHP1AA | 12/05/00 | N/A |
| 13 | MR-7 | DQAHW1AA | 12/05/00 | N/A |
| 14 | CHECK SAMPLE | DQAJ01AC C | 12/05/00 | N/A |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |

MENTS: No Contamination

037

FORM IV

## SW846 8082 SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ARCADIS GERAGHTY & MILLER INC

Code: STLCAN SDG No:

Lot #: A0K220123

| | CLIENT ID. | SRG01 | SRG02 | TOT OUT |
|---|---|---|---|---|
| 01 | INTRA-LAB QC | 84 | 109 | 00 |
| 02 | INTRA-LAB QC | 88 D | 123D | 00 |
| 03 | MR-1 | 84 | 90 | 00 |
| 04 | MR-2 | 82 | 98 | 00 |
| 05 | MR-3 | 106 | 118 | 00 |
| 06 | MR-4 | 27 * | 78 | 01 |
| 07 | MR-5 | 96 | 101 | 00 |
| 08 | MR-6 | 103 | 110 | 00 |
| 09 | MR-7 | 94 | 99 | 00 |
| 10 | METHOD BLK. DQAJ01AA | 112 | 123 | 00 |
| 11 | LCS DQAJ01AC | 113 | 127 | 00 |
| 12 | LAB MS/MSD D | 91 | 100 | 00 |
| 13 | LAB MS/MSD D | 94 D | 126D | 00 |
| 14 | LAB MS/MSD S | 104 | 113 | 00 |
| 15 | LAB MS/MSD S | 94 D | 128D | 00 |

J/UJ

| SURROGATES | | QC LIMITS |
|---|---|---|
| SRG01 | = Tetrachloro-m-xylene | ( 31-127) |
| SRG02 | = Decachlorobiphenyl | ( 23-141) |

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

038

SW846 8082 CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ARCADIS GERAGHTY & MILLER INC

Lab Code: STLCAN SDG No:

Lot #: A0K220000 WO #: DQAJ01AC
BATCH: 0327217

| COMPOUND | SPIKE ADDED (ug/kg) | SAMPLE CONCENT. (ug/kg) | % REC | QC LIMITS REC | QUAL |
|---|---|---|---|---|---|
| PCB-1016 | 330 | 370 | 112 | 49- 122 | |
| PCB-1260 | 330 | 380 | 113 | 51- 127 | |

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

## SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ARCADIS GERAGHTY & MILLER INC

Code: STLCAN SDG No:

Matrix Spike ID: LAB MS/MSD Level: (low/med) LOW

Lot #: A0K220107 WO #: DQACF1AD
BATCH: 0327217

| COMPOUND | SPIKE ADDED (ug/kg) | SAMPLE CONCENT. (ug/kg) | MS CONCENT. (ug/kg) | MS % REC | LIMITS REC | QUAL |
|---|---|---|---|---|---|---|
| PCB-1016 | 350 | ND | 350 | 100 | 26- 144 | |
| PCB-1260 | 350 | ND | 330 | 94 | 37- 138 | |

NOTES (S):

Results and reporting limits have been adjusted for dry weight.

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

MENTS:

## SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ARCADIS GERAGHTY & MILLER INC

Code: STLCAN SDG No:

Matrix Spike ID: LAB MS/MSD Level: (low/med) LOW

Lot #: A0K220107 WO #: DQACF1AE
BATCH: 0327217

| COMPOUND | SPIKE ADDED (ug/kg) | MSD CONCENT. (ug/kg) | MSD % REC | % RPD | QC LIMITS RPD | QC LIMITS REC | QUAL |
|---|---|---|---|---|---|---|---|
| PCB-1016 | 350 | 290 | 83 | 19 | 39 | 26- 144 | |
| PCB-1260 | 350 | 290 | 83 | 13 | 33 | 37- 138 | |

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

## SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: ARCADIS GERAGHTY & MILLER INC

Lab Code: STLCAN SDG No:

Matrix Spike ID: LAB MS/MSD Level: (low/med) LOW

Lot #: A0K220107 WO #: DQAFX1AG
BATCH: 0327217

| COMPOUND | SPIKE ADDED (ug/kg) | MSD CONCENT. (ug/kg) | MSD % REC | % RPD | QC LIMITS RPD | QC LIMITS REC | QUAL | |
|---|---|---|---|---|---|---|---|---|
| PCB-1016 | 360 | 2200 | 599* | 1.6 | 39 | 26- 144 | DIL a | NA |
| PCB-1260 | 360 | 670 | 186* | 2.3 | 33 | 37- 138 | DIL a | NA |

NOTES(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 2 out of 2 outside limits

COMMENTS:

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION
## FIELD DUPLICATE SAMPLE SUMMARY

**Sample ID:** NONE **Duplicate Sample ID:**

**Water:** RPD > 30% **Soil:** RPD > 50%

| Compound | Sample Conc. | Dup. Sample Conc. | RPD |
|---|---|---|---|
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
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| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |

**Comments:**

**HEARTLAND ESI GC** **HESI96.1**

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## SAMPLE CALCULATION

**SAMPLE ID:** **MR-1**

**STANDARD ID:** **ICAL 12/01/00**

**COMPOUND NAME:** **Aroclor 1254**

**CONCENTRATION:** **72 µg/Kg**

**MATRIX:** **SOIL**

| | **Soil (µg/Kg)** |
|---|---|
| Area of Compound | 131814 |
| Calibration Factor | 588201 |
| Final Volume | 10000 |
| Dilution Factor | 1 |
| GPC Factor | NA |
| Injection Volume | NA |
| Weight of Sample | 30.08 |
| Volume of Sample | NA |
| % Moisture | 0.85 |
| Concentration | 87.6473970773 |

| | |
|---|---|
| Conc. Peak 1 | 87.65 |
| Conc. Peak 2 | 82.56 |
| Conc. Peak 3 | 66.07 |
| Conc. Peak 4 | 69.47 |
| Conc. Peak 5 | 54.71 |
| **Average Conc. (µg/Kg)** | **72.09** |

**HEARTLAND ESI GC** **HESI96.1**

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## SAMPLE RESULT VERIFICATION

1. Were the sample results reported within the calibration range (YES/NO)? YES

2. Was the percent moisture reported for all soil samples (YES/NO/NA)? YES

3. Was the data reported on a dry weight basis (YES/NO/NA)? YES

4. Did the GC chromatograms exhibit interferences, off scale peaks or elevated baseline (YES/NO)? NO

5. Did the data contain elevated detection limits that could not be verified (YES/NO)? NO

6. Were any computational or transcription errors found (YES/NO)? NO

**Specific Comments:**

**Reviewer** Erica K. Ketcham **Date:** 10/12/01

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART I

Site Name: Garrett
Client: GF
Location: AOK220123
Lab: STL
Analytical Fraction: Metals
Reviewer: P. Humby
Date(s): 10/4/01

| | | | | |
|---|---|---|---|---|
| A. | Control Chart - results of the method blank spikes run with each batch of samples processed | Yes | (No) | NR |
| B. | CLP Form 1s with associated sample results and CLP flagging system. All percent moistures for soils and discussion of sample type | (Yes) | No | NR |
| C. | CLP Form 2s with Initial and continuing calibration standards (part 1 only) | (Yes) | No | NR |
| D. | CLP Form 3s with prep and method blanks | (Yes) | No | NR |
| E. | CLP Form 4s with Interference check sample data | (Yes) | No | NR |
| F. | CLP Form 5s with Matrix spike recovery and the postdigestion spike recovery for ICP Metals. Only done if predigest spike recovery exceeds limits | (Yes) | No | NR |
| G. | CLP Form 6s with Duplicate data results | (Yes) | No | NR |
| H. | CLP Form 7s with LCS data results | (Yes) | No | NR |
| I. | CLP Form 8s with GFAA standard addition data | Yes | No | (NR) |
| J. | CLP Form 9s with Serial Dilution data results | (Yes) | No | NR |

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART II

| | | | | |
|---|---|---|---|---|
| K. | CLP Form 10s with Instrument Detection Data | (Yes) | No | NR |
| L. | CLP Forms 11 and 12 with Quarterly Verification of Instrument Parameters | (Yes) | No | NR |
| M. | CLP Form 13s with Preparation Log data | (Yes) | No | NR |
| N. | CLP Form 14s with Run Log data | (Yes) | No | NR |

HEARTLAND ESI Form A

## DATA DELIVERABLE REQUIREMENTS

| | | | | |
|---|---|---|---|---|
| A. | Permanently Bound | Yes | (No) | NR |
| B. | Paginated | (Yes) | No | NR |
| C. | Table of Contents | (Yes) | No | NR |
| D. | Digestion Records(internal C-O-C) | (Yes) | No | NR |
| E. | Chain-Of-Custody (external) | (Yes) | No | NR |
| F. | Case Narrative | | | |
| | 1. Sample list with Client and Lab IDs cross-referenced (copy attached) | (Yes) | No | NR |
| | 2. All Protocol deviations and QC problems noted | (Yes) | No | NR |
| | 3. Comments:_____ | | | |
| G. | Uninitialed Strikeovers | Yes | (No) | NR |
| H. | Legible Photocopies | (Yes) | No | NR |
| I. | Consistent Dates | (Yes) | No | NR |
| J. | Preparation Logs | (Yes) | No | NR |
| K. | Instrument Run Logs | (Yes) | No | NR |
| L. | Other Deviations or Comments:_____ | | | |

HEARTLAND ESI Form B

## HOLDING TIMES FOR METALS

1. Was the holding time exceeded on any of the Metal Fractions

   ICP/GFAA/FAA - Holding time of 6 months VTSR
   Mercury - Holding time of 28 days VTSR
   Cyanide - Holding time of 14 days VTSR

   Yes (No)

2. - If yes, complete the following form for all samples that exceeding holding times.

Fraction:_____

| Sample ID | Matrix | VTSR | Date of Analysis | DA | QC Decision |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | 10/4/01 | | |
| | | | | | |
| | | | | | |

Note: DA = The number of days holding time to analysis is exceeded.

S = Non-aqueous
A = Aqueous
X = Air

QA Decision: Results > IDL - J - estimated

Results < IDL - R - rejected

HEARTLAND ESI Form C-1

INSTRUMENT CALIBRATION AND INITIAL CALIBRATION VERIFICATION (ICV)

Associated Samples All Samples

1. a. Was the ICP instrument properly standardized? (Yes) No
If no, explain and list action.

b. Was the furnace instrument properly standardized? If no, were the required standards analyzed immediately after the instrument calibration and results within 95-105% recovery? Yes No NR
If no, explain and list action.

c. Were the instruments for the analyses of Cyanide and Mercury properly standardized? (Yes) No
If no, explain and list action.

2. Was the ICV analyzed immediately after the system(s) were calibrated? (Yes) No
If no, explain and list action.

3. Was the ICV analyzed for every analyte? (Yes) No
If no, explain and list action.

4. Do all ICV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their % recovery, and action for which:

a. % recovery is between 75-89% (CN, 70-84% or HG, 65-79%)

HEARTLAND ESI Form C-2

b. % recovery is between 111-125% (CN, 116-130% or HG. 121-135%)_____

c. % recovery is less than 75% or greater than 125%(CN. <70 or >130%, Hg <65 or >135)_____

5. a. Show calculation for the % recovery of one ICV analyte by ICP. Lab value 103.1 %

Zinc $\frac{1031}{1000} \times 100 = 103.1\%$

b. Show calculation for the % recovery of one ICV analyte by furnace AA. Lab value NR

c. Show calculation for the ICV % recovery of Mercury. Lab Value 102.9%

$\frac{2.57}{2.50} \times 100 = 102.9\%$

d. Show calculation for the ICV % recovery of Cyanide. Lab value NR

6. Specific comments:_____

HEARTLAND ESI Form D-1

CONTINUING CALIBRATION VERIFICATION (CCV)

Associated Samples All Sample

1. a. Was the CCV performed every two hours or at the 10% frequency? (Yes) No
If no, list action.

b. Was the CCV performed at the beginning and end of the sample analysis? (Yes) No
If no, list action.

2. Were the CCV standards analyzed for all analytes? (Yes) No
If no, list affected analytes, their associated samples and action.

3. Was the same concentration used for CCV throughout the analyses? (Yes) No
If no, list affected analytes, their associated samples and action.

4. Do all CCV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their associated samples and action for which:

a. % recovery is between 75-89%(CN,70-84% or Hg, 65-79%)

b. % recovery is between 111-125%(CN,116-130% or Hg, 121-135%)

c. % recovery is less than 75% or greater than 125%(CN, <70 or

HEARTLAND ESI Form D-2

5. a. Show calculation for the % recovery of one CCV analyte analyzed by ICP. Lab value 98.5

Zinc $\frac{1969}{2000} \times 100 = 98.59$

b. Show calculation for the % recovery of one CCV analyte analyzed by furnace AA. Lab value NR

c. Show calculation for the % recovery of one CCV analyte analyzed for Mercury. Lab value 104.99

$\frac{5.25}{5.00} \times 100 = 105$

d. Show calculation for the % recovery of one CCV analyte for Cyanide. Lab value NR

6. Specific comments: _____

HEARTLAND ESI Form F

INITIAL & CONTINUING CALIBRATION BLANK

Associated Samples All Sample

1. Were the initial calibration blanks analyzed for all analytes and run after the initial calibration verification? (Yes) No
If no, list affected analytes, and action.

2. Was the absolute value for all analytes in the initial calibration blank below the CRDL? (Yes) No
If no, list affected analytes and reject them.

3. Were the continuing calibration blanks analyzed for all analytes and run after the continuing calibration verification? (Yes) No
If no, list affected analytes, associated samples and action.

4. Was the frequency for the continuing calibration blanks correct? (Yes) No
If no, list affected analytes, associated samples and action.

5. Was the absolute value of all analytes for the continuing calibration blank below the CRDL? (Yes) No
If no, list affected analytes, associated samples and reject them.

HEARTLAND ESI Form G

## PREPARATION BLANK SUMMARY

Sample Matrix: (Soil) Water Air Preparation Blank ID PBS
Units: (mg/kg) ug/l ug/m3

1. Did the frequency of the preparation blank analysis meet method requirements? (Yes) No
If no, explain and note action: _____

| Analyte | Conc | <CRDL | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | PBS 10/4/01 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Associated Samples: All Soil Samples

CRDL Codes: Yes < CRDL
No > CRDL

# STL North Canton

## Metals Data Reporting Form

### Interference Check Standard A

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i61129a.arc **Acceptable Range:** 80% - 120%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | Reporting Limit | True Conc | ICSA 11/29/00 10:13 AM Found | Found | Found | Found | Found |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | | 500000 | 492000 | | | | |
| Antimony | 206.838 | 60 | | 3 | | | | |
| Arsenic | 189.042 | 10 | | 5 | | | | |
| Barium | 493.409 | 200 | | 2 | | | | |
| Beryllium | 313.042 | 5 | | 0 | | | | |
| Cadmium | 226.502 | 5 | | 1 | | | | |
| Calcium | 317.933 | | 500000 | 508000 | | | | |
| Chromium | 267.716 | 10 | | -3 | | | | |
| Cobalt | 228.616 | 50 | | 4 | | | | |
| Copper | 324.753 | 25 | | 3 | | | | |
| Iron | 271.441 | | 200000 | 199000 | | | | |
| Lead | 220.353 | 3 | | -3 | | | | |
| Magnesium | 279.078 | | 500000 | 491000 | | | | |
| Manganese | 257.61 | 15 | | 8 | | | | |
| Nickel | 231.604 | 40 | | 3 | | | | |
| Potassium | 766.491 | 5000 | | 42 | | | | |
| Selenium | 196.026 | 5 | | 1 | | | | |
| Silver | 328.068 | 10 | | 1 | | | | |
| Sodium | 330.232 | 5000 | | 130 | | | | |
| Thallium | 190.864 | 10 | | 6 | | | | |
| Vanadium | 292.402 | 50 | | -1 | | | | |
| Zinc | 213.856 | 20 | | 16 | | | | |

# Metals Data Reporting Form

## Interference Check Standard AB

**nstrument:** ICPST **Units:** ug/L

**Chart Number:** i61129a.arc **Acceptable Range:** 80% - 120%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | ICSAB 11/29/00 10:40 AM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 500000 | 478029.8 | 95.6 | | | | | | | | |
| Antimony | 206.838 | 1000 | 986.1 | 98.6 | | | | | | | | |
| Arsenic | 189.042 | 1000 | 966.4 | 96.6 | | | | | | | | |
| Barium | 493.409 | 500 | 504.2 | 100.8 | | | | | | | | |
| Beryllium | 313.042 | 500 | 497.6 | 99.5 | | | | | | | | |
| Cadmium | 226.502 | 1000 | 986.1 | 98.6 | | | | | | | | |
| Calcium | 317.933 | 500000 | 498973.1 | 99.8 | | | | | | | | |
| Chromium | 267.716 | 500 | 472.7 | 94.5 | | | | | | | | |
| Cobalt | 228.616 | 500 | 474.3 | 94.9 | | | | | | | | |
| Copper | 324.753 | 500 | 524.2 | 104.8 | | | | | | | | |
| Iron | 271.441 | 200000 | 196025.8 | 98.0 | | | | | | | | |
| Lead | 220.353 | 1000 | 967.2 | 96.7 | | | | | | | | |
| Magnesium | 279.078 | 500000 | 484974.2 | 97.0 | | | | | | | | |
| Manganese | 257.61 | 500 | 501.2 | 100.2 | | | | | | | | |
| Nickel | 231.604 | 1000 | 933.3 | 93.3 | | | | | | | | |
| Potassium | 766.491 | 10000 | 11405.2 | 114.1 | | | | | | | | |
| Selenium | 196.026 | 1000 | 975.1 | 97.5 | | | | | | | | |
| Silver | 328.068 | 1000 | 994.8 | 99.5 | | | | | | | | |
| Sodium | 330.232 | 10000 | 10369.8 | 103.7 | | | | | | | | |
| Thallium | 190.864 | 1000 | 976.2 | 97.6 | | | | | | | | |
| Vanadium | 292.402 | 500 | 475.4 | 95.1 | | | | | | | | |
| Zinc | 213.856 | 1000 | 1016.5 | 101.6 | | | | | | | | |

## MATRIX SPIKE SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** A0K220123 **Matrix.....:** SOLID
**Date Sampled...:** 11/18/00 09:30 **Date Received..:** 11/21/00

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| **MS Lot-Sample #:** A0K210151-001 **Prep Batch #...:** 0332111 | | | | | | | | | |
| Aluminum | | | | | | | | | |
| | 3970 | 226 | 3740 | mg/kg | | | SW846 6010B | 11/27-11/29/00 | DP8XE1A |
| | | | Qualifiers: NC,MSB | | | | | | |
| | 3970 | 226 | 3800 | mg/kg | | | SW846 6010B | 11/27-11/29/00 | DP8XE1A |
| | | | Qualifiers: NC,MSB | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| Arsenic | | | | | | | | | |
| | 4.4 | 226 | 203 | mg/kg | 88 | | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | 4.4 | 226 | 205 | mg/kg | 89 | 1.3 | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | | | Dilution Factor: 1 | | | | | | |
| Antimony | | | | | | | | | |
| | ND | 56.5 | 43.3 | mg/kg | 77 | | SW846 6010B | 11/27-11/29/00 | DP8XE1A |
| | ND | 56.5 | 31.6 N,* | mg/kg | 56 | 31 | SW846 6010B | 11/27-11/29/00 | DP8XE1A |
| | | | Dilution Factor: 1 | | | | | | |
| Lead | | | | | | | | | |
| | 3.5 | 56.5 | 53.1 | mg/kg | 88 | | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | 3.5 | 56.5 | 52.6 | mg/kg | 87 | 1.0 | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | | | Dilution Factor: 1 | | | | | | |
| Barium | | | | | | | | | |
| | 28.2 | 226 | 229 | mg/kg | 89 | | SW846 6010B | 11/27-11/29/00 | DP8XE1A |
| | 28.2 | 226 | 223 | mg/kg | 86 | 2.2 | SW846 6010B | 11/27-11/29/00 | DP8XE1A |
| | | | Dilution Factor: 1 | | | | | | |
| Selenium | | | | | | | | | |
| | ND | 226 | 201 | mg/kg | 89 | | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | ND | 226 | 212 | mg/kg | 94 | 5.2 | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | | | Dilution Factor: 1 | | | | | | |
| Beryllium | | | | | | | | | |
| | ND | 5.6 | 5.0 | mg/kg | 88 | | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | ND | 5.6 | 4.9 | mg/kg | 87 | 0.73 | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | | | Dilution Factor: 1 | | | | | | |
| Thallium | | | | | | | | | |
| | ND | 226 | 212 | mg/kg | 94 | | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | ND | 226 | 213 | mg/kg | 94 | 0.19 | SW846 6010B | 11/27-11/29/00 | DP8XE1D |
| | | | Dilution Factor: 1 | | | | | | |

(Continued on next page)

## MATRIX SPIKE SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** A0K220123 **Matrix.....:** SOLID
**Date Sampled...:** 11/18/00 09:30 **Date Received..:** 11/21/00

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium | | | | | | | | | |
| | ND | 5.6 | 5.2 | mg/kg | 90 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | ND | 5.6 | 5.1 | mg/kg | 89 | 0.77 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Calcium | | | | | | | | | |
| | 2050 | 5650 | 6120 N | mg/kg | 72 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 2050 | 5650 | 5950 N | mg/kg | 69 | 2.9 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Chromium | | | | | | | | | |
| | 22.3 | 22.6 | 27.9 N | mg/kg | 25 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 22.3 | 22.6 | 28.8 N | mg/kg | 29 | 3.0 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Cobalt | | | | | | | | | |
| | ND | 56.5 | 52.3 | mg/kg | 88 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | ND | 56.5 | 51.7 | mg/kg | 87 | 1.1 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Copper | | | | | | | | | |
| | 12.7 | 28.2 | 29.4 N | mg/kg | 59 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 12.7 | 28.2 | 30.5 N | mg/kg | 63 | 3.4 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Iron | | | | | | | | | |
| | 6940 | 113 | 4910 | mg/kg | | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | 6940 | 113 | 5090 | mg/kg | | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| Magnesium | | | | | | | | | |
| | 1310 | 5650 | 5910 | mg/kg | 81 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 1310 | 5650 | 5820 | mg/kg | 80 | 1.5 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Manganese | | | | | | | | | |
| | 63.0 | 56.5 | 87.4 N | mg/kg | 43 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 63.0 | 56.5 | 87.4 N | mg/kg | 43 | 0.01 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Nickel | | | | | | | | | |
| | 7.4 | 56.5 | 56.9 | mg/kg | 88 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 7.4 | 56.5 | 56.1 | mg/kg | 86 | 1.3 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |

(Continued on next page)

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## MATRIX SPIKE SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** A0K220123 **Matrix.....:** SOLID
**Date Sampled...:** 11/18/00 09:30 **Date Received..:** 11/21/00

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Potassium | | | | | | | | | |
| | ND | 5650 | 5280 | mg/kg | 88 | | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | ND | 5650 | 5460 | mg/kg | 92 | 3.4 | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | | | Dilution Factor: 1 | | | | | | |
| Silver | | | | | | | | | |
| | ND | 5.6 | 5.6 | mg/kg | 99 | | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | ND | 5.6 | 5.6 | mg/kg | 100 | 0.25 | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | | | Dilution Factor: 1 | | | | | | |
| Sodium | | | | | | | | | |
| | ND | 5650 | 5100 | mg/kg | 90 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | ND | 5650 | 5070 | mg/kg | 90 | 0.53 | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | | | Dilution Factor: 1 | | | | | | |
| Vanadium | | | | | | | | | |
| | 11.1 | 56.5 | 60.3 | mg/kg | 87 | | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | 11.1 | 56.5 | 59.2 | mg/kg | 85 | 1.7 | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | | | Dilution Factor: 1 | | | | | | |
| Zinc | | | | | | | | | |
| | 18.3 | 56.5 | 62.6 | mg/kg | 78 | | SW846 6010B | 11/27-11/29/00 | DP8XE1 |
| | 18.3 | 56.5 | 63.5 | mg/kg | 80 | 1.5 | SW846 6010B | 11/27-11/29/00 | DP8XE1C |
| | | | Dilution Factor: 1 | | | | | | |
| Mercury | | | | | | | | | |
| | ND | 0.19 | 0.19 | mg/kg | 102 | | SW846 7471A | 11/27-11/28/00 | DP8XE1D |
| | ND | 0.19 | 0.19 | mg/kg | 100 | 2.0 | SW846 7471A | 11/27-11/28/00 | DP8XE1D |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...: A0K220123** **Matrix.....: SOLID**
**Date Sampled...: 11/18/00 09:30 Date Received..: 11/21/00**

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **MS Lot-Sample #: A0K210151-001 Prep Batch #...: 0332111** | | | | | | | |
| Aluminum | NC,MSB | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1A4 |
| | NC,MSB | (75 - 125) | | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1A5 |
| | | Dilution Factor: 1 | | | | | |
| Arsenic | 88 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1DA |
| | 89 | (75 - 125) | 1.3 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1DC |
| | | Dilution Factor: 1 | | | | | |
| Antimony | 77 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1A6 |
| | 56 N,* | (75 - 125) | 31 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1A7 |
| | | Dilution Factor: 1 | | | | | |
| Lead | 88 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1DD |
| | 87 | (75 - 125) | 1.0 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1DE |
| | | Dilution Factor: 1 | | | | | |
| Barium | 89 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1A8 |
| | 86 | (75 - 125) | 2.2 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1A9 |
| | | Dilution Factor: 1 | | | | | |
| Selenium | 89 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1DF |
| | 94 | (75 - 125) | 5.2 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1DG |
| | | Dilution Factor: 1 | | | | | |
| Beryllium | 88 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CA |
| | 87 | (75 - 125) | 0.73 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CC |
| | | Dilution Factor: 1 | | | | | |
| Thallium | 94 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1DH |
| | 94 | (75 - 125) | 0.19 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1DJ |
| | | Dilution Factor: 1 | | | | | |
| Cadmium | 90 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CD |
| | 89 | (75 - 125) | 0.77 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CE |
| | | Dilution Factor: 1 | | | | | |
| Calcium | 72 N | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CF |
| | 69 N | (75 - 125) | 2.9 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CG |
| | | Dilution Factor: 1 | | | | | |
| Chromium | 25 N | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CH |
| | 29 N | (75 - 125) | 3.0 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CJ |
| | | Dilution Factor: 1 | | | | | |

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## MATRIX SPIKE SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...: A0K220123** **Matrix.....: SOLID**
**Date Sampled...: 11/18/00 09:30 Date Received..: 11/21/00**

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Cobalt | 88 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CK |
| | 87 | (75 - 125) | 1.1 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CL |
| | | Dilution Factor: 1 | | | | | |
| Copper | 59 N | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CM |
| | 63 N | (75 - 125) | 3.4 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CN |
| | | Dilution Factor: 1 | | | | | |
| Iron | NC,MSB | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CP |
| | NC,MSB | (75 - 125) | | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CQ |
| | | Dilution Factor: 1 | | | | | |
| Magnesium | 81 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CR |
| | 80 | (75 - 125) | 1.5 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CT |
| | | Dilution Factor: 1 | | | | | |
| Manganese | 43 N | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CU |
| | 43 N | (75 - 125) | 0.01 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CV |
| | | Dilution Factor: 1 | | | | | |
| Nickel | 88 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1CW |
| | 86 | (75 - 125) | 1.3 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1CX |
| | | Dilution Factor: 1 | | | | | |
| Potassium | 88 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1C0 |
| | 92 | (75 - 125) | 3.4 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1C1 |
| | | Dilution Factor: 1 | | | | | |
| Silver | 99 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1C2 |
| | 100 | (75 - 125) | 0.25 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1C3 |
| | | Dilution Factor: 1 | | | | | |
| Sodium | 90 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1C4 |
| | 90 | (75 - 125) | 0.53 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1C5 |
| | | Dilution Factor: 1 | | | | | |
| Vanadium | 87 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1C6 |
| | 85 | (75 - 125) | 1.7 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1C7 |
| | | Dilution Factor: 1 | | | | | |
| Zinc | 78 | (75 - 125) | | | SW846 6010B | 11/27-11/29/00 | DP8XE1C8 |
| | 80 | (75 - 125) | 1.5 | (0-20) | SW846 6010B | 11/27-11/29/00 | DP8XE1C9 |
| | | Dilution Factor: 1 | | | | | |

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## MATRIX SPIKE SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A0K220123 **Matrix.....:** SOLID
**Date Sampled...:** 11/18/00 09:30 **Date Received..:** 11/21/00

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Mercury | 102 | (10 - 209) | | | SW846 7471A | 11/27-11/28/00 | DP8XE1DK |
| | 100 | (10 - 209) | 2.0 | (0-20) | SW846 7471A | 11/27-11/28/00 | DP8XE1DL |

Dilution Factor: 1

**NOTE(S):**

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

## LABORATORY CONTROL SAMPLE DATA REPORT

### TOTAL Metals

Client Lot #...: A0K220123 Matrix.....: SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| LCS Lot-Sample#: A0K270000-111 Prep Batch #...: 0332111 | | | | | | | |
| Aluminum | 200 | 189 | mg/kg | 94 | SW846 6010B | 11/27-11/29/00 | DQD2N1A3 |
| | | Dilution Factor: 1 | | | | | |
| Arsenic | 200 | 179 | mg/kg | 90 | SW846 6010B | 11/27-11/29/00 | DQD2N1CN |
| | | Dilution Factor: 1 | | | | | |
| Antimony | 50.0 | 46.8 | mg/kg | 94 | SW846 6010B | 11/27-11/29/00 | DQD2N1A4 |
| | | Dilution Factor: 1 | | | | | |
| Lead | 50.0 | 44.8 | mg/kg | 90 | SW846 6010B | 11/27-11/29/00 | DQD2N1CP |
| | | Dilution Factor: 1 | | | | | |
| Barium | 200 | 182 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1A5 |
| | | Dilution Factor: 1 | | | | | |
| Selenium | 200 | 187 | mg/kg | 94 | SW846 6010B | 11/27-11/29/00 | DQD2N1CQ |
| | | Dilution Factor: 1 | | | | | |
| Beryllium | 5.0 | 4.5 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1A6 |
| | | Dilution Factor: 1 | | | | | |
| Thallium | 200 | 190 | mg/kg | 95 | SW846 6010B | 11/27-11/29/00 | DQD2N1CR |
| | | Dilution Factor: 1 | | | | | |
| Cadmium | 5.0 | 4.5 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1A7 |
| | | Dilution Factor: 1 | | | | | |
| Calcium | 5000 | 4400 | mg/kg | 88 | SW846 6010B | 11/27-11/29/00 | DQD2N1A8 |
| | | Dilution Factor: 1 | | | | | |
| Chromium | 20.0 | 18.2 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1A9 |
| | | Dilution Factor: 1 | | | | | |
| Cobalt | 50.0 | 44.0 | mg/kg | 88 | SW846 6010B | 11/27-11/29/00 | DQD2N1CA |
| | | Dilution Factor: 1 | | | | | |
| Copper | 25.0 | 22.9 | mg/kg | 92 | SW846 6010B | 11/27-11/29/00 | DQD2N1CC |
| | | Dilution Factor: 1 | | | | | |
| Iron | 100 | 99.4 | mg/kg | 99 | SW846 6010B | 11/27-11/29/00 | DQD2N1CD |
| | | Dilution Factor: 1 | | | | | |

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## LABORATORY CONTROL SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** A0K220123 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Magnesium | 5000 | 4410 | mg/kg | 88 | SW846 6010B | 11/27-11/29/00 | DQD2N1CE |
| | | Dilution Factor: 1 | | | | | |
| Manganese | 50.0 | 45.6 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1CF |
| | | Dilution Factor: 1 | | | | | |
| Nickel | 50.0 | 45.4 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1CG |
| | | Dilution Factor: 1 | | | | | |
| Potassium | 5000 | 4730 | mg/kg | 95 | SW846 6010B | 11/27-11/29/00 | DQD2N1CH |
| | | Dilution Factor: 1 | | | | | |
| Silver | 5.0 | 5.1 | mg/kg | 101 | SW846 6010B | 11/27-11/29/00 | DQD2N1CJ |
| | | Dilution Factor: 1 | | | | | |
| Sodium | 5000 | 4540 | mg/kg | 91 | SW846 6010B | 11/27-11/29/00 | DQD2N1CK |
| | | Dilution Factor: 1 | | | | | |
| Vanadium | 50.0 | 45.0 | mg/kg | 90 | SW846 6010B | 11/27-11/29/00 | DQD2N1CL |
| | | Dilution Factor: 1 | | | | | |
| Zinc | 50.0 | 47.0 | mg/kg | 94 | SW846 6010B | 11/27-11/29/00 | DQD2N1CM |
| | | Dilution Factor: 1 | | | | | |
| Mercury | 0.83 | 0.74 | mg/kg | 89 | SW846 7471A | 11/27-11/28/00 | DQD2N1CT |
| | | Dilution Factor: 1 | | | | | |

NOTE(S):

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

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A0K220123 **Matrix.....:** SOLID

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|
| **LCS Lot-Sample#:** A0K270000-111 **Prep Batch #...:** 0332111 | | | | | |
| Aluminum | 94 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A3 |
| | | Dilution Factor: 1 | | | |
| Arsenic | 90 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1CN |
| | | Dilution Factor: 1 | | | |
| Antimony | 94 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A4 |
| | | Dilution Factor: 1 | | | |
| Lead | 90 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1CP |
| | | Dilution Factor: 1 | | | |
| Barium | 91 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A5 |
| | | Dilution Factor: 1 | | | |
| Selenium | 94 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1CQ |
| | | Dilution Factor: 1 | | | |
| Beryllium | 91 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A6 |
| | | Dilution Factor: 1 | | | |
| Thallium | 95 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1CR |
| | | Dilution Factor: 1 | | | |
| Cadmium | 91 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A7 |
| | | Dilution Factor: 1 | | | |
| Calcium | 88 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A8 |
| | | Dilution Factor: 1 | | | |
| Chromium | 91 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1A9 |
| | | Dilution Factor: 1 | | | |
| Cobalt | 88 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1CA |
| | | Dilution Factor: 1 | | | |
| Copper | 92 | (80 - 120) | SW846 6010B | 11/27-11/29/00 | DQD2N1CC |
| | | Dilution Factor: 1 | | | |
| Iron | 99 | (73 - 137) | SW846 6010B | 11/27-11/29/00 | DQD2N1CD |
| | | Dilution Factor: 1 | | | |

(Continued on next page)

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### TOTAL Metals

Client Lot #...: A0K220123 Matrix.....: SOLID

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|
| Magnesium | 88 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CE |
| Manganese | 91 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CF |
| Nickel | 91 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CG |
| Potassium | 95 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CH |
| Silver | 101 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CJ |
| Sodium | 91 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CK |
| Vanadium | 90 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CL |
| Zinc | 94 | (80 - 120) Dilution Factor: 1 | SW846 6010B | 11/27-11/29/00 | DQD2N1CM |
| Mercury | 89 | (52 - 127) Dilution Factor: 1 | SW846 7471A | 11/27-11/28/00 | DQD2N1CT |

NOTE(S):

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

# STL North Canton

## Metals Data Reporting Form

### rial Dilution RPD Report

**Serial Dilution Sample ID:** DQAHHL

**Original Sample ID:** DQAHH **Client ID:** MR-2

**Matrix:** Solid **Units:** ug/L **Prep Date:** 11/27/00 **Prep Batch:** 0332111

**Weight:** NA **Volume:** NA **Percent Moisture:** NA

| Element | WL/ Mass | OS Conc | Q | Serial Dilution Conc | Q | Percent Diff | OS DF | Ser Dil DF | Instr | OS Anal Date | OS Anal Time | Ser Dil Anal Date | Ser Dil Anal Time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 226.502 | 0.40 | U | 2.0 | U | | 1 | 5 | ICPST | 11/29/00 | 14:10 | 11/29/00 | 14:14 |
| Chromium | 267.716 | 62.1 | | 66.9 | | | 1 | 5 | ICPST | 11/29/00 | 14:10 | 11/29/00 | 14:14 |

Comments:

Version 4.10.5

U Result is less than the IDL
B Result is between IDL and RL
L Serial dilution percent difference not within limits

*Form 9 Equivalent*

068

**HEARTLAND**
**ENVIRONMENTAL SERVICES, INC.**

# Data Validation Report

| | |
|---|---|
| SDG#: | A1012 |
| Date: | October 17, 2001 |
| Client Name: | Gannett Fleming |
| Project/Site Name: | 425 Merrick Ave |
| Date Sampled: | April 24-25, 2001 |
| Number of Samples: | 8 Non-Aqueous Sample(s) with 1 MS/MSD(s) |
| Laboratory: | STL CT |
| Validation Guidance: | National Functional Guidelines for Organic and Inorganic Data |
| QA/QC Level: | NYSDEC ASP Category B |
| Method(s) Utilized: | SW846 Third Edition |
| Analytical Fractions: | PCBs and Mercury |

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Seaman
Paul B. Humburg, President

10-17-01.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(636) 936-1332 • Fax (636) 936-1335

**SDG# A1012**

## Samples and Fractions Reviewed

Sample Identifications Analytical Fraction

| GANNETT FLEMING ID | MATRIX | PCB | | Hg | |
|---|---|---|---|---|---|
| W. WALL#1 (BLDG2) | SOIL | | | | X |
| BOTTOM (BLDG2) | SOIL | | | | X |
| MR4-E. WALL | SOIL | | | | X |
| MR4-N. WALL | SOIL | | | | X |
| MR4-S. WALL | SOIL | | | | X |
| MR4-BOTTOM | SOIL | | | | X |
| NP-S. WALL | SOIL | | X | | X |
| NP-E. WALL | SOIL | | | | X |
| NP-E. WALL MS | SOIL | | | | X |
| NP-E. WALL MSD | SOIL | | | | X |
| Total Billable Samples (Water/Soil) | | 0 | 1 | 0 | 10 |

PCB= PCBs
Hg= Mercury

# DATA ASSESSMENT NARRATIVES

# DATA ASSESSMENT NARRATIVE

## PCBs

### General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8082; the National Functional Guidelines for Organic Data Review, October 1999, as applicable; and NYSDEC ASP Category B requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

### SDG # A1012

A validation was performed on the PCB Data from SDG A1012. The data was evaluated based on the following parameters:

| | | |
|---|---|---|
| * | • | Data Completeness |
| * | • | Holding Times |
| * | • | GC Performance |
| * | • | Calibration |
| * | • | Blanks |
| * | • | Surrogate Recoveries |
| * | • | Matrix Spike/Matrix Spike Duplicates |
| * | • | Field Duplicates |
| * | • | Compound Identification |
| * | • | Compound Quantitation |

* - All criteria were met for this parameter.

### System Performance and Overall Assessment

The data did not require qualifications.

# GLOSSARY OF DATA QUALIFIERS

## QUALIFICATION CODES

**U** = Not detected

**J** = Estimated value

**UJ** = Reported quantitation limit is qualified as estimated

**R** = Result is rejected and unusable

**NJ** = Presumptive evidence for the presence of the material at an estimated value

**K** = Result is biased high

**L** = Result is biased low

**D** = Result value is based on dilution analysis

## BLANK QUALIFICATION CODES

**CRQL =** The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

**U =** The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

**No Action =** The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

# SUMMARY OF DATA QUALIFICATIONS

| SAMPLE ID | COMPOUND ID | DL | QL |
|---|---|---|---|

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

# DATA ASSESSMENT NARRATIVE
# MERCURY

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 methods for Mercury and the Functional Guidelines for Inorganic Data Validation, February 1994 requirements and NYSDEC ASP Category B. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

## SDGs # A1012

A validation was performed on the Metals Data from SDG A1012. The data was evaluated based on the following parameters.

| | | |
|---|---|---|
| * | ● | Data Completeness |
| * | ● | Holding Times |
| * | ● | Calibrations |
| * | ● | Blanks |
| * | ● | Interferences |
| * | ● | Matrix Spike Recovery |
| * | ● | Matrix Duplicates |
| * | ● | Field Duplicates |
| * | ● | Laboratory Control Samples |
| * | ● | Serial Dilutions |

* - All criteria were met for this parameter.

# SUMMARY OF DATA QUALIFICATIONS

| Sample ID | Analyte | DL | QL |
|---|---|---|---|

Data stands as reported without qualification.

ANNOTATED FORM Is

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: STL-CT Contract: _____ Client ID: NP-S.WALL

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Matrix: (soil/water): SOIL Lab Sample ID: 011012A-07

Sample wt/vol: 30.2 (g/ml) G Lab File ID: D5094195

% Moisture: 7 decanted: (Y/N) Date Received : 04/26/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/29/01

Concentrated Extract Volume: 10000 (ul) Date Analyzed : 05/01/01

Injection Volume: 1.0 (uL) Dilution Factor: 50.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1800 | U |
| 11104-28-2 | Aroclor-1221 | 3600 | U |
| 11141-16-5 | Aroclor-1232 | 1800 | U |
| 53469-21-9 | Aroclor-1242 | 1800 | U |
| 12672-29-6 | Aroclor-1248 | 1800 | U |
| 11097-69-1 | Aroclor-1254 | 2900 | |
| 11096-82-5 | Aroclor-1260 | 500 | J |

EVK
10/11/01

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
W.WALL#1 (BLDG2)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-01

Level (low/med): LOW Date Received: 04/26/01

% Solids: 87.4

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.11 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PBK
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOTTOM (BLDG2)

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-02

Level (low/med): LOW Date Received: 04/26/01

% Solids: 91.2

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.084 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PDH 10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-E.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-03

Level (low/med): LOW Date Received: 04/26/01

% Solids: 88.4

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.48 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PBW

10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-N.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-04

Level (low/med): LOW Date Received: 04/26/01

% Solids: 95.2

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 5.3 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PB 10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-S.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-05

Level (low/med): LOW Date Received: 04/26/01

% Solids: 82.1

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 1.8 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PBW 10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-BOTTOM

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-06

Level (low/med): LOW Date Received: 04/26/01

% Solids: 92.2

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 3.1 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

JB 10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NP-S.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-07

Level (low/med): LOW Date Received: 04/26/01

% Solids: 92.4

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.029 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PB
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NP-E.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix (soil/water): SOIL Lab Sample ID: 011012A-08

Level (low/med): LOW Date Received: 04/26/01

% Solids: 92.1

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 2.7 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PB
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

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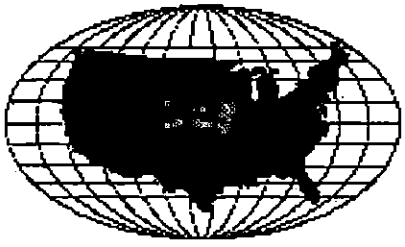
# DATA VALIDATION WORKSHEETS



**HEARTLAND**
**ENVIRONMENTAL SERVICES, INC.**

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

| | |
|---|---|
| **CASE/SDG NUMBER:** | **A1012** |
| **LABORATORY:** | **STL-CT** |
| **CLIENT:** | **Gannett Fleming** |
| **PROJECT:** | **425 Merrick Ave** |
| **REVIEWER:** | **Erica K. Ketcham** |
| **DATE:** | **October 12, 2001** |
| **QA/QC LEVEL:** | **NYSDEC ASP Category B** |
| **STATEMENT OF WORK:** | **SW-846 Method 8082** |
| **ANALYSIS MODIFICATIONS:** | **none** |
| **NUMBER OF SAMPLES:** | **1** |
| **SAMPLE MATRIX:** | **soil** |
| **NUMBER OF MS/MSDs:** | **0** |

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## HOLDING TIMES

| | Water | Soil | Analysis |
|---|---|---|---|
| CLP: | 7 days from sampling | 14 days from sampling | 40 days from extract. |
| SW846: | 7 days from sampling | 14 days from sampling | 40 days from extract. |
| Region I: | 7 days from sampling | 7 days from sampling | 40 days from extract. |
| Region II: | 7 days from sampling | 7 days from sampling | 40 days from extract. |
| Region III: | 7 days from sampling | 7 days from sampling | 40 days from extract. |
| NYSDEC: | 5 days from VTSR | 5 days from VTSR | 40 days from extract. |

DA - The number of days that the holding time was exceeded.

| | |
|---|---|
| DA ≤ 5: | Qualify all positive results as estimated (J). |
| DA > 5 ≤ 15: | Qualify all positive results as estimated (J) and all non detects as estimated (UJ). |
| DA > 15: | Qualify all positive results as estimated (J) and reject (R) all non detects. |

**Soils:** **s - 04/25** **VTSR - 04/26** **e - 04/29** **a - 05/01**

**All associated samples met holding time requirements for extraction and/or analysis. No qualifications are required.**

STANDARD CONCENTRATIONS (ng)
SW846 - 8081A/8082 Analysis

| Pesticides | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|---|
| alpha-BHC | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| beta-BHC | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| delta-BHC | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| gamma-BHC | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Heptachlor | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Aldrin | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Heptachlor Epoxide | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Endosulfan I | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Dieldrin | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| 4,4'-DDE | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| Endrin | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| Endosulfan II | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| 4,4'-DDD | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| Endosulfan Sulfate | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| 4,4'-DDT | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| Methoxychlor | 0.05 | 0.10 | 0.25 | 0.50 | 1.00 |
| Endrin Aldehyde | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| Endrin Ketone | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| alpha-Chlordane | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| gamma-Chlordane | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Toxaphene | 0.25 | 0.50 | 1.00 | 2.00 | 4.00 |
| Technical Chlordane | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |
| Tetrachloro-m-xylene (surrogate) | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| Decachlorobiphenyl (surrogate) | 0.01 | 0.02 | 0.05 | 0.10 | 0.20 |
| * Isodrin | 0.005 | 0.01 | 0.025 | 0.05 | 0.10 |
| * Chlorobenzilate | 0.05 | 0.10 | 0.25 | 0.50 | 1.00 |

* Appendix 9 compounds

| Aroclors | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|---|
| PCB-1016 | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |
| PCB-1221 | 0.10 | 0.20 | 0.40 | 0.80 | 1.6 |
| PCB-1232 | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |
| PCB-1242 | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |
| PCB-1248 | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |
| PCB-1254 | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |
| PCB-1260 | 0.05 | 0.10 | 0.20 | 0.40 | 0.80 |

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 04/21/01 04/21/01

Instrument ID: HP58905D

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.56 DCB: 29.32

| | SAMPLE NO. | LAB SAMPLE ID | DATE & TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|
| 01 | INDA1 | INDA1 | 04/21/01 1556 | 6.56 | 29.33 |
| 02 | INDB1 | INDB1 | 04/21/01 1637 | 6.56 | 29.32 |
| 03 | INDA2 | INDA2 | 04/21/01 1718 | 6.56 | 29.32 |
| 04 | INDB2 | INDB2 | 04/21/01 1759 | 6.56 | 29.32 |
| 05 | INDA3 | INDA3 | 04/21/01 1840 | 6.56 | 29.32 |
| 06 | INDB3 | INDB3 | 04/21/01 1921 | 6.56 | 29.32 |
| 07 | INDA4 | INDA4 | 04/21/01 2002 | 6.55 | 29.32 |
| 08 | INDB4 | INDB4 | 04/21/01 2043 | 6.56 | 29.32 |
| 09 | INDA5 | INDA5 | 04/21/01 2124 | 6.56 | 29.32 |
| 10 | INDB5 | INDB5 | 04/21/01 2205 | 6.56 | 29.32 |
| 11 | TCLR2 | TCLR2 | 04/21/01 2246 | 6.56 | 29.32 |
| 12 | TOXAPH2 | TOXAPH2 | 04/21/01 2327 | 6.55 | 29.32 |
| 13 | AR16601 | AR16601 | 04/22/01 0008 | 6.55 | 29.32 |
| 14 | AR16602 | AR16602 | 04/22/01 0049 | 6.55 | 29.32 |
| 15 | AR16603 | AR16603 | 04/22/01 0130 | 6.56 | 29.32 |
| 16 | AR16604 | AR16604 | 04/22/01 0211 | 6.55 | 29.31 |
| 17 | AR16605 | AR16605 | 04/22/01 0252 | 6.55 | 29.31 |
| 18 | AR12212 | AR12212 | 04/22/01 0333 | 6.56 | 29.32 |
| 19 | AR12322 | AR12322 | 04/22/01 0413 | 6.55 | 29.31 |
| 20 | AR12422 | AR12422 | 04/22/01 0454 | 6.55 | 29.31 |
| 21 | AR12482 | AR12482 | 04/22/01 0535 | 6.55 | 29.31 |
| 22 | AR12542 | AR12542 | 04/22/01 0616 | 6.55 | 29.31 |
| 23 | AR16603 | AR16603 | 04/30/01 1249 | 6.56 | 29.31 |
| 24 | PIBLK | PIBLK | 04/30/01 1330 | 6.55 | 29.30 |
| 25 | PBLK55 | 042901-B04 | 04/30/01 1655 | 6.57 | 29.32 |
| 26 | PBLK55QC2 | 042901-B04 | 04/30/01 1736 | 6.57 | 29.33 |
| 27 | AR16603 | AR16603 | 04/30/01 2142 | 6.56 | 29.31 |
| 28 | PIBLK | PIBLK | 04/30/01 2223 | 6.56 | 29.31 |
| 29 | AR16603 | AR16603 | 05/01/01 1303 | 6.56 | 29.31 |
| 30 | PIBLK | PIBLK | 05/01/01 1344 | 6.56 | 29.31 |
| 31 | NP-S.WALL | 011012A-07 | 05/01/01 1750 | * | * |
| 32 | AR16603 | AR16603 | 05/01/01 2034 | 6.56 | 29.31 |

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)
DCB = Decachlorobiphenyl (± 0.05 MINUTES)

# Column used to flag retention time values with a asterisk.
* Values outside of QC limits.



FORM VIII PEST
GC-8082:rev 1.0

8D

# PESTICIDE ANALYTICAL SEQUENCE

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 04/21/01 04/21/01

Instrument ID: HP58905D

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.56 DCB: 29.32

| | SAMPLE NO. | LAB SAMPLE ID | DATE & TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|
| 01 | PIBLK | PIBLK | 05/01/01 2115 | 6.56 | 29.32 |
| 02 | | | | | |
| 03 | | | | | |
| 04 | | | | | |
| 05 | | | | | |
| 06 | | | | | |
| 07 | | | | | |
| 08 | | | | | |
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| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)
DCB = Decachlorobiphenyl (± 0.05 MINUTES)

# Column used to flag retention time values with a asterisk.
* Values outside of QC limits.



FORM VIII PEST
GC-8082:rev 1.0

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: RTX-35 ID: 0.53(mm) Init. Calib. Date(s): 04/30/01 05/01/01

Instrument ID: HP58901C

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.96 DCB: 26.66

| | SAMPLE NO. | LAB SAMPLE ID | DATE & TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|
| 01 | INDA1 | INDA1 | 04/30/01 1304 | 8.95 | 26.66 |
| 02 | INDB1 | INDB1 | 04/30/01 1340 | 8.96 | 26.66 |
| 03 | INDA2 | INDA2 | 04/30/01 1416 | 8.96 | 26.66 |
| 04 | INDB2 | INDB2 | 04/30/01 1452 | 8.96 | 26.66 |
| 05 | INDA3 | INDA3 | 04/30/01 1528 | 8.96 | 26.66 |
| 06 | INDB3 | INDB3 | 04/30/01 1604 | 8.96 | 26.66 |
| 07 | INDA4 | INDA4 | 04/30/01 1640 | 8.96 | 26.66 |
| 08 | INDB4 | INDB4 | 04/30/01 1716 | 8.96 | 26.66 |
| 09 | INDA5 | INDA5 | 04/30/01 1752 | 8.96 | 26.66 |
| 10 | INDB5 | INDB5 | 04/30/01 1828 | 8.96 | 26.66 |
| 11 | TCLR2 | TCLR2 | 04/30/01 1904 | 8.96 | 26.66 |
| 12 | TOXAPH | TOXAPH | 04/30/01 1940 | 8.96 | 26.66 |
| 13 | AR16601 | AR16601 | 04/30/01 2016 | 8.96 | 26.66 |
| 14 | AR16602 | AR16602 | 04/30/01 2052 | 8.96 | 26.66 |
| 15 | AR16603 | AR16603 | 04/30/01 2128 | 8.96 | 26.66 |
| 16 | AR16604 | AR16604 | 04/30/01 2204 | 8.96 | 26.66 |
| 17 | AR16605 | AR16605 | 04/30/01 2240 | 8.96 | 26.66 |
| 18 | AR12212 | AR12212 | 04/30/01 2316 | 8.96 | 26.66 |
| 19 | AR12322 | AR12322 | 04/30/01 2352 | 8.96 | 26.66 |
| 20 | AR12422 | AR12422 | 05/01/01 0029 | 8.96 | 26.66 |
| 21 | AR12482 | AR12482 | 05/01/01 0105 | 8.96 | 26.66 |
| 22 | AR12542 | AR12542 | 05/01/01 0140 | 8.96 | 26.66 |
| 23 | AR16603 | AR16603 | 05/02/01 1750 | 8.96 | 26.67 |
| 24 | PIBLK | PIBLK | 05/02/01 1903 | 8.96 | 26.67 |
| 25 | PBLK55 | 042901-B04 | 05/02/01 1940 | 8.97 | 26.67 |
| 26 | PBLK55QC2 | 042901-B04 | 05/02/01 2016 | 8.96 | 26.67 |
| 27 | NP-S.WALL | 011012A-07 | 05/02/01 2130 | 8.96 | 26.67 |
| 28 | AR16603 | AR16603 | 05/03/01 0145 | 8.96 | 26.67 |
| 29 | PIBLK | PIBLK | 05/03/01 0222 | 8.96 | 26.67 |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)
DCB = Decachlorobiphenyl (± 0.05 MINUTES)

# Column used to flag retention time values with a asterisk.
* Values outside of QC limits.



FORM VIII PEST
GC-8082:rev 1.0

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58905D Sequence: D5094

Column: DB-1701 ID: .53 Date(s) Analyzed: 04/21/01 04/22/01

| Compound | Retention Time of Standards | | | | | Mean RT | RT Windows | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | | From | To |
| alpha-BHC | 8.53 | 8.53 | 8.53 | 8.53 | 8.53 | 8.53 | 8.48 | 8.58 |
| beta-BHC | 11.96 | 11.95 | 11.96 | 11.96 | 11.95 | 11.96 | 11.91 | 12.01 |
| delta-BHC | 12.93 | 12.92 | 12.93 | 12.93 | 12.92 | 12.93 | 12.88 | 12.98 |
| gamma-BHC (Lindane) | 9.52 | 9.52 | 9.52 | 9.51 | 9.52 | 9.52 | 9.47 | 9.57 |
| Heptachlor | 10.13 | 10.12 | 10.12 | 10.12 | 10.12 | 10.12 | 10.07 | 10.17 |
| Aldrin | 11 | 11 | 11 | 11 | 10.99 | 11 | 10.95 | 11.05 |
| Heptachlor epoxide | 13.67 | 13.66 | 13.67 | 13.67 | 13.66 | 13.67 | 13.62 | 13.72 |
| Endosulfan I | 14.98 | 14.97 | 14.96 | 14.96 | 14.97 | 14.97 | 14.92 | 15.02 |
| Dieldrin | 17.04 | 17.03 | 17.03 | 17.02 | 17.04 | 17.03 | 16.98 | 17.08 |
| 4,4'-DDE | 16.33 | 16.33 | 16.34 | 16.33 | 16.32 | 16.33 | 16.28 | 16.38 |
| Endrin | 18.27 | 18.26 | 18.26 | 18.25 | 18.27 | 18.26 | 18.21 | 18.31 |
| Endosulfan II | 21.42 | 21.42 | 21.42 | 21.42 | 21.41 | 21.42 | 21.37 | 21.47 |
| 4,4'-DDD | 21.42 | 21.41 | 21.42 | 21.41 | 21.42 | 21.42 | 21.37 | 21.47 |
| Endosulfan sulfate | 24.84 | 24.84 | 24.84 | 24.84 | 24.83 | 24.84 | 24.79 | 24.89 |
| 4,4'-DDT | 22.28 | 22.28 | 22.28 | 22.27 | 22.28 | 22.28 | 22.23 | 22.33 |
| Methoxychlor | 25.22 | 25.22 | 25.22 | 25.21 | 25.21 | 25.22 | 25.17 | 25.27 |
| Endrin ketone | 26.35 | 26.35 | 26.35 | 26.35 | 26.34 | 26.35 | 26.3 | 26.4 |
| Endrin aldehyde | 23.45 | 23.45 | 23.45 | 23.45 | 23.44 | 23.45 | 23.4 | 23.5 |
| alpha-Chlordane | 15.62 | 15.62 | 15.62 | 15.62 | 15.61 | 15.62 | 15.57 | 15.67 |
| gamma-Chlordane | 15.32 | 15.31 | 15.32 | 15.32 | 15.31 | 15.32 | 15.27 | 15.37 |
| Isodrin | 12.46 | 12.45 | 12.45 | 12.45 | 12.45 | 12.45 | 12.4 | 12.5 |
| Chlorobenzilate | 20.53 | 20.52 | 20.52 | 20.52 | 20.51 | 20.52 | 20.47 | 20.57 |
| Mirex | 24.28 | 24.27 | 24.28 | 24.27 | 24.28 | 24.28 | 24.23 | 24.33 |
| Tetrachloro-m-xylene | 6.56 | 6.56 | 6.56 | 6.55 | 6.56 | 6.56 | 6.51 | 6.61 |
| Decachlorobiphenyl | 29.33 | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 | 29.27 | 29.37 |

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58901C Sequence: C1115

Column: RTX-35 ID: .53 Date(s) Analyzed: 04/30/01 05/01/01

| Compound | Retention Time of Standards | | | | | Mean RT | RT Windows | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | | From | To |
| alpha-BHC | 11 | 11 | 11 | 11 | 11 | 11 | 10.95 | 11.05 |
| beta-BHC | 12.39 | 12.39 | 12.39 | 12.39 | 12.39 | 12.39 | 12.34 | 12.44 |
| delta-BHC | 13.38 | 13.39 | 13.39 | 13.39 | 13.39 | 13.39 | 13.34 | 13.44 |
| gamma-BHC (Lindane) | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.08 | 12.18 |
| Heptachlor | 13.23 | 13.23 | 13.23 | 13.23 | 13.23 | 13.23 | 13.18 | 13.28 |
| Aldrin | 14.14 | 14.15 | 14.15 | 14.15 | 14.15 | 14.15 | 14.1 | 14.2 |
| Heptachlor epoxide | 15.65 | 15.65 | 15.65 | 15.65 | 15.65 | 15.65 | 15.6 | 15.7 |
| Endosulfan I | 16.61 | 16.61 | 16.61 | 16.61 | 16.61 | 16.61 | 16.56 | 16.66 |
| Dieldrin | 17.39 | 17.4 | 17.4 | 17.4 | 17.39 | 17.4 | 17.35 | 17.45 |
| 4,4'-DDE | 17.21 | 17.21 | 17.21 | 17.21 | 17.21 | 17.21 | 17.16 | 17.26 |
| Endrin | 18.27 | 18.28 | 18.28 | 18.28 | 18.27 | 18.28 | 18.23 | 18.33 |
| Endosulfan II | 18.76 | 18.76 | 18.76 | 18.75 | 18.75 | 18.76 | 18.71 | 18.81 |
| 4,4'-DDD | 18.63 | 18.63 | 18.63 | 18.63 | 18.63 | 18.63 | 18.58 | 18.68 |
| Endosulfan sulfate | 19.95 | 19.95 | 19.95 | 19.95 | 19.95 | 19.95 | 19.9 | 20 |
| 4,4'-DDT | 19.42 | 19.42 | 19.42 | 19.42 | 19.42 | 19.42 | 19.37 | 19.47 |
| Methoxychlor | 21.45 | 21.46 | 21.46 | 21.46 | 21.46 | 21.46 | 21.41 | 21.51 |
| Endrin ketone | 21.73 | 21.73 | 21.73 | 21.73 | 21.73 | 21.73 | 21.68 | 21.78 |
| Endrin aldehyde | 19.53 | 19.53 | 19.53 | 19.53 | 19.53 | 19.53 | 19.48 | 19.58 |
| alpha-Chlordane | 16.57 | 16.58 | 16.58 | 16.58 | 16.58 | 16.58 | 16.53 | 16.63 |
| gamma-Chlordane | 16.17 | 16.17 | 16.17 | 16.17 | 16.17 | 16.17 | 16.12 | 16.22 |
| Isodrin | 15.29 | 15.29 | 15.29 | 15.29 | 15.29 | 15.29 | 15.24 | 15.34 |
| Chlorobenzilate | 18.09 | 18.09 | 18.08 | 18.08 | 18.08 | 18.08 | 18.03 | 18.13 |
| Mirex | 21.91 | 21.91 | 21.91 | 21.91 | 21.91 | 21.91 | 21.86 | 21.96 |
| Tetrachloro-m-xylene | 8.95 | 8.96 | 8.96 | 8.96 | 8.96 | 8.96 | 8.91 | 9.01 |
| Decachlorobiphenyl | 26.66 | 26.66 | 26.66 | 26.66 | 26.66 | 26.66 | 26.61 | 26.71 |

6E

# GC INITIAL CALIBRATION OF SINGLE & MULTI COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58905D Sequence: D5094

Column: DB-1701 ID: 0.53 Date(s) Analyzed: 04/21/01 04/22/01

| Compound | Calibration Factors | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Mean | |
| alpha-BHC | 19084000 | 22016200 | 25084360 | 25984820 | 25437340 | 23521344 | 12.4 |
| beta-BHC | 13744000 | 13958100 | 13736440 | 13399840 | 12363450 | 13440366 | 4.7 |
| delta-BHC | 16185200 | 16919800 | 20254440 | 22298620 | 22826900 | 19696992 | 15.4 |
| gamma-BHC (Lindane) | 19397400 | 22255700 | 24704720 | 25281800 | 24539060 | 23235736 | 10.5 |
| Heptachlor | 23480600 | 23292500 | 23754200 | 23588240 | 22616270 | 23346362 | 1.9 |
| Aldrin | 17919600 | 18919200 | 21193400 | 22256240 | 22094330 | 20476554 | 9.5 |
| Heptachlor epoxide | 19834400 | 20612800 | 21722080 | 22396040 | 21743290 | 21261722 | 4.8 |
| Endosulfan I | 18078800 | 19183500 | 20136880 | 20713720 | 20895220 | 19801624 | 5.9 |
| Dieldrin | 17053100 | 18653350 | 20386040 | 21292210 | 21101050 | 19697150 | 9.2 |
| 4,4'-DDE | 18763800 | 19947400 | 21957780 | 22511570 | 21799225 | 20995955 | 7.5 |
| Endrin | 14579500 | 15577100 | 16763720 | 17426430 | 17192330 | 16307816 | 7.4 |
| Endosulfan II | 16210500 | 17155050 | 18850020 | 19196460 | 18553955 | 17993197 | 7 |
| 4,4'-DDD | 12087700 | 13213850 | 14328740 | 14964780 | 15027760 | 13924566 | 9 |
| Endosulfan sulfate | 12794500 | 13605700 | 14607980 | 14885220 | 14466340 | 14071948 | 6.1 |
| 4,4'-DDT | 12419800 | 13579400 | 14632400 | 15256660 | 15561735 | 14289999 | 9 |
| Methoxychlor | 7580140 | 7680020 | 7273332 | 6825412 | 6311975 | 7134176 | 8 |
| Endrin ketone | 14074900 | 15061050 | 16315660 | 16483230 | 15870230 | 15561014 | 6.4 |
| Endrin aldehyde | 13282600 | 15390150 | 14448220 | 14362500 | 13745360 | 14245766 | 5.6 |
| alpha-Chlordane | 20704400 | 21252800 | 22745840 | 23343400 | 22820500 | 22173388 | 5.1 |
| gamma-Chlordane | 19439800 | 20100500 | 21683160 | 22456500 | 22194490 | 21174890 | 6.3 |
| Isodrin | 17377200 | 18466400 | 19590800 | 20227560 | 19919110 | 19116214 | 6.2 |
| Chlorobenzilate | 3567320 | 3478960 | 3089368 | 2711900 | 2272551 | 3024020 | 17.9 |
| Mirex | 17742400 | 18358400 | 17996680 | 17537080 | 16293360 | 17585584 | 4.5 |
| Tetrachloro-m-xylene | 24779800 | 23149200 | 21557640 | 20254120 | 18582970 | 21664746 | 11.2 |
| Decachlorobiphenyl | 18715300 | 18541900 | 17313820 | 16123290 | 14994475 | 17137757 | 9.3 |
| Aroclor-1016 (1) | 608440 | 580230 | 539845 | 500365 | 476918 | 541160 | 10 |
| Aroclor-1016 (2) | 1206940 | 1156670 | 1073550 | 972548 | 873036 | 1056549 | 12.8 |
| Aroclor-1016 (4) | 2394320 | 2391480 | 2245265 | 2003570 | 1799401 | 2166807 | 12 |

6E

# GC INITIAL CALIBRATION OF SINGLE & MULTI COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58905D Sequence: D5094

Column: DB-1701 ID: 0.53 Date(s) Analyzed: 04/21/01 04/22/01

| Compound | Calibration Factors | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Mean | |
| Aroclor-1016 (5) | 1151540 | 1140050 | 1100780 | 1020472 | 944201 | 1071409 | 8.2 |
| Aroclor-1016 (6) | 694160 | 732470 | 753915 | 710442 | 671624 | 712522 | 4.5 |
| Aroclor-1260 (1) | 2093600 | 2116460 | 2046620 | 1932700 | 1793986 | 1996673 | 6.7 |
| Aroclor-1260 (3) | 1312580 | 1346660 | 1324970 | 1273555 | 1201478 | 1291849 | 4.4 |
| Aroclor-1260 (4) | 2186520 | 1866310 | 1433555 | 1316708 | 1442502 | 1649119 | 22.2 |
| Aroclor-1260 (5) | 2463760 | 2566060 | 2529110 | 2468392 | 2361969 | 2477858 | 3.1 |
| Aroclor-1260 (7) | 1616420 | 1660950 | 1647330 | 1616678 | 1562436 | 1620763 | 2.3 |
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FORM VI PEST-2
GC-8082:rev 1.0

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## GC INITIAL MASS CALIBRATION

**Date of Calibration:** **04/21/01**

**Instrument ID:** **HP58905D**

**Calculations:**

Calculate the CF of one of the compounds used in the initial calibration. Enter the compound name and the reported CF.

Compound Name: Aroclor-1016

Lab Value: 608440

| | |
|---|---|
| Area of Compound | 30422 |
| Conc. of Compound | 0.05 |
| Calculated CF | 608440 |

Calculate the %RSD of one of the compounds used in the initial calibration. Enter the compound name and the reported %RSD.

Compound Name: Aroclor-1260 (7)

Lab Value: 2.3

| | |
|---|---|
| CF of L1 STD | 1616420 |
| CF of L2 STD | 1660950 |
| CF of L3 STD | 1647330 |
| CF of L4 STD | 1616678 |
| CF of L5 STD | 1562436 |
| % RSD | 2.34 |

6E

# GC INITIAL CALIBRATION OF SINGLE & MULTI COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58901C Sequence: C1115

Column: RTX-35 ID: 0.53 Date(s) Analyzed: 04/30/01 05/01/01

| Compound | Calibration Factors | | | | | | %RSD | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Mean | | |
| alpha-BHC | 9471800 | 11890400 | 15655640 | 16562400 | 18045920 | 14325232 | 24.7 | NT |
| beta-BHC | 7475600 | 7800700 | 8518480 | 8604720 | 8301620 | 8140224 | 6 | |
| delta-BHC | 8822600 | 9840300 | 12752720 | 14347280 | 14905540 | 12133688 | 22.3 | NT |
| gamma-BHC (Lindane) | 9973400 | 12237300 | 15378040 | 16820820 | 17306830 | 14343278 | 21.9 | NT |
| Heptachlor | 9098600 | 10573600 | 11903240 | 13031840 | 13741490 | 11669754 | 16 | |
| Aldrin | 10465200 | 11159200 | 13141600 | 14652340 | 15041590 | 12891986 | 15.8 | |
| Heptachlor epoxide | 10200200 | 10992200 | 12432640 | 13405820 | 13497710 | 12105714 | 12.1 | |
| Endosulfan I | 9401400 | 10397100 | 11773000 | 12589060 | 12905110 | 11413134 | 13 | |
| Dieldrin | 9129000 | 11069950 | 12935980 | 13605580 | 13653915 | 12078885 | 16.2 | |
| 4,4'-DDE | 9806300 | 11188700 | 13335500 | 13958980 | 13695620 | 12397020 | 14.6 | |
| Endrin | 5928400 | 6851750 | 8178740 | 8637440 | 9047710 | 7728808 | 16.8 | |
| Endosulfan II | 9706200 | 10602050 | 11814540 | 12159680 | 11781090 | 11212712 | 9.2 | |
| 4,4'-DDD | 7201700 | 8506100 | 9749220 | 10353780 | 10461630 | 9254486 | 15 | |
| Endosulfan sulfate | 8911300 | 9611800 | 10927480 | 11293720 | 11041940 | 10357248 | 10 | |
| 4,4'-DDT | 4377300 | 5455750 | 7033300 | 8086160 | 9024830 | 6795468 | 27.8 | NT |
| Methoxychlor | 2307180 | 3011490 | 3501648 | 3756648 | 3949799 | 3305353 | 20 | |
| Endrin ketone | 9992400 | 11202150 | 12510180 | 12767270 | 12422435 | 11778887 | 9.9 | |
| Endrin aldehyde | 9126800 | 9491350 | 9818800 | 9757060 | 9444775 | 9527757 | 2.9 | |
| alpha-Chlordane | 11182600 | 12094700 | 13595520 | 14506200 | 14391530 | 13154110 | 11.1 | |
| gamma-Chlordane | 10781600 | 11654700 | 13202200 | 14226880 | 14366140 | 12846304 | 12.3 | |
| Isodrin | 8473000 | 9690200 | 11323120 | 12239520 | 12679050 | 10880978 | 16.2 | |
| Chlorobenzilate | 2132200 | 1813740 | 1521092 | 1295792 | 1087268 | 1570018 | 26.4 | NT |
| Mirex | 10907400 | 11810900 | 11629280 | 11485700 | 10887100 | 11344076 | 3.7 | |
| Tetrachloro-m-xylene | 11749200 | 13191200 | 14033000 | 14144220 | 13751840 | 13373892 | 7.3 | |
| Decachlorobiphenyl | 15947300 | 16810600 | 16250060 | 15314020 | 14225625 | 15709521 | 6.3 | |
| Aroclor-1016 (1) | 434900 | 425540 | 396835 | 362575 | 344046 | 392779 | 10 | |
| Aroclor-1016 (2) | 925840 | 887700 | 816060 | 735102 | 662429 | 805426 | 13.4 | |
| Aroclor-1016 (4) | 1690200 | 1686220 | 1561485 | 1463548 | 1305008 | 1541292 | 10.5 | |

NT - not target cmpd

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GC-8082:rev 1.0

6E

# GC INITIAL CALIBRATION OF SINGLE & MULTI COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58901C Sequence: C1115

Column: RTX-35 ID: 0.53 Date(s) Analyzed: 04/30/01 05/01/01

| Compound | Calibration Factors | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Mean | |
| Aroclor-1016 (5) | 676440 | 699540 | 673365 | 634460 | 586892 | 654139 | 6.8 |
| Aroclor-1016 (6) | 360420 | 386510 | 383030 | 337430 | 358429 | 365164 | 5.5 |
| Aroclor-1260 (1) | 1137540 | 1153860 | 1096655 | 1028835 | 951948 | 1073768 | 7.8 |
| Aroclor-1260 (2) | 854700 | 878440 | 869195 | 832558 | 811016 | 849182 | 3.2 |
| Aroclor-1260 (3) | 710980 | 717950 | 688305 | 642278 | 604960 | 672895 | 7.2 |
| Aroclor-1260 (5) | 1461020 | 1561640 | 1560385 | 1430142 | 1400434 | 1482724 | 5 |
| Aroclor-1260 (7) | 919520 | 934410 | 958915 | 922822 | 928721 | 932878 | 1.7 |
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FORM VI PEST-2
GC-8082:rev 1.0

6Ea

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument: HP58905D Sequence: D5094

Column: DB-1701 ID: 0.53 Date(s) Analyzed: 04/21/01 04/22/01

| COMPOUND | %RSD | COEFF | EQUATION |
|---|---|---|---|
| PCB-1260 | 22.2 | .997 | (0.0000007199 * area) + -0.01588 |

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GC-8081A/8082:rev 1.0

6F

# PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument ID: HP58905D Date(s) Analyzed: 04/21/01 04/21/01

GC Column: DB-1701 ID: .53 (mm)

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR |
|---|---|---|---|---|---|
| Technical Chlordane | *1 | 10.12 | 10.07 | 10.17 | 1351000 |
| | *2 | 11.84 | 11.79 | 11.89 | 1007460 |
| | *3 | 15.31 | 15.26 | 15.36 | 2124400 |
| | 4 | 15.64 | 15.59 | 15.69 | 3230010 |
| | 5 | 20.20 | 20.15 | 20.25 | 992610 |
| Toxaphene | *1 | 21.54 | 21.49 | 21.59 | 274086 |
| | *2 | 22.56 | 22.51 | 22.61 | 752512 |
| | *3 | 24.55 | 24.50 | 24.60 | 594720 |
| | 4 | 25.52 | 25.47 | 25.57 | 262084 |
| | 5 | 26.70 | 26.65 | 26.75 | 181062 |
| Aroclor-1016 | *1 | 7.87 | 7.82 | 7.92 | 541160 |
| | *2 | 8.70 | 8.65 | 8.75 | 1056549 |
| | *3 | 9.89 | 9.84 | 9.94 | 2166807 |
| | 4 | 10.26 | 10.21 | 10.31 | 1071409 |
| | 5 | 10.58 | 10.53 | 10.63 | 712522 |
| Aroclor-1221 | *1 | 7.40 | 7.35 | 7.45 | 276515 |
| | *2 | 7.74 | 7.69 | 7.79 | 202280 |
| | *3 | 7.87 | 7.82 | 7.92 | 766605 |
| | 4 | 9.17 | 9.12 | 9.22 | 33725 |
| | 5 | 9.89 | 9.84 | 9.94 | 131640 |
| Aroclor-1232 | *1 | 7.40 | 7.35 | 7.45 | 199840 |
| | *2 | 7.87 | 7.82 | 7.92 | 674380 |
| | *3 | 8.70 | 8.65 | 8.75 | 528320 |
| | 4 | 9.89 | 9.84 | 9.94 | 1042830 |
| | 5 | 11.77 | 11.72 | 11.82 | 763220 |
| Aroclor-1242 | *1 | 7.87 | 7.82 | 7.92 | 490260 |
| | *2 | 8.70 | 8.65 | 8.75 | 924600 |
| | *3 | 9.89 | 9.84 | 9.94 | 1810710 |
| | 4 | 10.96 | 10.91 | 11.01 | 1251500 |
| | 5 | 13.43 | 13.38 | 13.48 | 1414870 |
| Aroclor-1248 | *1 | 8.69 | 8.64 | 8.74 | 457620 |
| | *2 | 9.89 | 9.84 | 9.94 | 1261340 |
| | *3 | 10.92 | 10.87 | 10.97 | 2133120 |
| | 4 | 11.78 | 11.73 | 11.83 | 1732380 |
| | 5 | 13.42 | 13.37 | 13.47 | 2951610 |
| Aroclor-1254 | *1 | 10.90 | 10.85 | 10.95 | 897940 |
| | *2 | 13.39 | 13.34 | 13.44 | 2161390 |
| | *3 | 15.58 | 15.53 | 15.63 | 605660 |
| | 4 | 16.68 | 16.63 | 16.73 | 2058350 |
| | 5 | 18.27 | 18.22 | 18.32 | 1687410 |
| Aroclor-1260 | *1 | 19.21 | 19.16 | 19.26 | 1996673 |
| | *2 | 21.55 | 21.50 | 21.60 | 1291849 |
| | *3 | 23.08 | 23.03 | 23.13 | 1649119 |
| | 4 | 24.41 | 24.36 | 24.46 | 2477858 |
| | 5 | 25.80 | 25.75 | 25.85 | 1620763 |

* Denotes required peaks

6F

# PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Instrument ID: HP58901C Date(s) Analyzed: 04/30/01 05/01/01

GC Column: RTX-35 ID: .53 (mm)

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR |
|---|---|---|---|---|---|
| Technical Chlordane | *1 | 12.76 | 12.71 | 12.81 | 501200 |
| | *2 | 13.23 | 13.18 | 13.28 | 724380 |
| | *3 | 14.65 | 14.60 | 14.70 | 852140 |
| | 4 | 16.17 | 16.12 | 16.22 | 1504890 |
| | 5 | 16.69 | 16.64 | 16.74 | 55490 |
| Toxaphene | *1 | 18.93 | 18.88 | 18.98 | 487722 |
| | *2 | 20.25 | 20.20 | 20.30 | 205822 |
| | *3 | 21.12 | 21.07 | 21.17 | 519200 |
| | 4 | 21.99 | 21.94 | 22.04 | 235080 |
| | 5 | 22.64 | 22.59 | 22.69 | 107482 |
| Aroclor-1016 | *1 | 10.80 | 10.75 | 10.85 | 392779 |
| | *2 | 12.04 | 11.99 | 12.09 | 805426 |
| | *3 | 13.19 | 13.14 | 13.24 | 1541292 |
| | 4 | 13.59 | 13.54 | 13.64 | 654139 |
| | 5 | 13.93 | 13.88 | 13.98 | 365164 |
| Aroclor-1221 | *1 | 10.17 | 10.12 | 10.22 | 213950 |
| | *2 | 10.60 | 10.55 | 10.65 | 143575 |
| | *3 | 10.80 | 10.75 | 10.85 | 445630 |
| | 4 | 12.06 | 12.01 | 12.11 | 155165 |
| | 5 | 13.59 | 13.54 | 13.64 | 44385 |
| Aroclor-1232 | *1 | 10.17 | 10.12 | 10.22 | 166850 |
| | *2 | 10.80 | 10.75 | 10.85 | 519370 |
| | *3 | 12.05 | 12.00 | 12.10 | 437170 |
| | 4 | 13.19 | 13.14 | 13.24 | 691410 |
| | 5 | 14.91 | 14.86 | 14.96 | 227850 |
| Aroclor-1242 | *1 | 10.80 | 10.75 | 10.85 | 366580 |
| | *2 | 12.05 | 12.00 | 12.10 | 703820 |
| | *3 | 12.80 | 12.75 | 12.85 | 393900 |
| | 4 | 13.19 | 13.14 | 13.24 | 1252030 |
| | 5 | 15.73 | 15.68 | 15.78 | 477420 |
| Aroclor-1248 | *1 | 12.04 | 11.99 | 12.09 | 349180 |
| | *2 | 13.18 | 13.13 | 13.23 | 839110 |
| | *3 | 14.91 | 14.86 | 14.96 | 687080 |
| | 4 | 15.73 | 15.68 | 15.78 | 884490 |
| | 5 | 16.55 | 16.50 | 16.60 | 779480 |
| Aroclor-1254 | *1 | 14.11 | 14.06 | 14.16 | 490370 |
| | *2 | 16.31 | 16.26 | 16.36 | 985740 |
| | *3 | 17.31 | 17.26 | 17.36 | 501940 |
| | 4 | 18.03 | 17.98 | 18.08 | 1385510 |
| | 5 | 19.06 | 19.01 | 19.11 | 711800 |
| Aroclor-1260 | *1 | 18.42 | 18.37 | 18.47 | 1073768 |
| | *2 | 19.45 | 19.40 | 19.50 | 849182 |
| | *3 | 19.61 | 19.56 | 19.66 | 672895 |
| | 4 | 20.90 | 20.85 | 20.95 | 1482724 |
| | 5 | 22.03 | 21.98 | 22.08 | 932878 |

* Denotes required peaks

7F

# MULTI COMPONENT CALIBRATION VERIFICATION SUMMARY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: .53 (mm) Init. Calib Date(s): 04/21/01 04/21/01

Sample No.(PIBLK): PIBLK Date Analyzed : 04/30/01

Lab File ID: D5094173 Time Analyzed : 1330

Sample No. : AR16603 Date Analyzed : 04/30/01

Lab File ID: D5094172 Time Analyzed : 1249

| MULTI COMPONENT COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | % DIFF |
|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1* | 7.87 | 7.82 | 7.92 | 0.20812 | 0.200 | 4.1 |
| | 2* | 8.70 | 8.65 | 8.75 | | | |
| | 3* | 9.89 | 9.84 | 9.94 | | | |
| | 4 | 10.26 | 10.21 | 10.31 | | | |
| | 5 | 10.58 | 10.53 | 10.63 | | | |
| Aroclor-1260 | 1* | 19.19 | 19.16 | 19.26 | 0.20482 | 0.200 | 2.4 |
| | 2* | 21.54 | 21.50 | 21.60 | | | |
| | 3* | 23.07 | 23.03 | 23.13 | | | |
| | 4 | 24.40 | 24.36 | 24.46 | | | |
| | 5 | 25.79 | 25.75 | 25.85 | | | |

* in Peak column indicates required peaks.

QC LIMITS: % Difference of amounts must be +/- 15.0%.

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# MULTI COMPONENT CALIBRATION VERIFICATION SUMMARY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: .53 (mm) Init. Calib Date(s): 04/21/01 04/21/01

Sample No.(PIBLK): PIBLK Date Analyzed : 04/30/01

Lab File ID: D5094186 Time Analyzed : 2223

Sample No. : AR16603 Date Analyzed : 04/30/01

Lab File ID: D5094185 Time Analyzed : 2142

| MULTI COMPONENT COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | % DIFF |
|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1* | 7.87 | 7.82 | 7.92 | 0.17868 | 0.200 | -11 |
| | 2* | 8.70 | 8.65 | 8.75 | | | |
| | 3* | 9.89 | 9.84 | 9.94 | | | |
| | 4 | 10.26 | 10.21 | 10.31 | | | |
| | 5 | 10.58 | 10.53 | 10.63 | | | |
| Aroclor-1260 | 1* | 19.19 | 19.16 | 19.26 | 0.18458 | 0.200 | -7.7 |
| | 2* | 21.54 | 21.50 | 21.60 | | | |
| | 3* | 23.07 | 23.03 | 23.13 | | | |
| | 4 | 24.40 | 24.36 | 24.46 | | | |
| | 5 | 25.79 | 25.75 | 25.85 | | | |

* in Peak column indicates required peaks.

QC LIMITS: % Difference of amounts must be +/- 15.0%.

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# MULTI COMPONENT CALIBRATION VERIFICATION SUMMARY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: .53 (mm) Init. Calib Date(s): 04/21/01 04/21/01

Sample No.(PIBLK): PIBLK Date Analyzed : 05/01/01

Lab File ID: D5094189 Time Analyzed : 1344

Sample No. : AR16603 Date Analyzed : 05/01/01

Lab File ID: D5094188 Time Analyzed : 1303

| MULTI COMPONENT COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | % DIFF |
|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1* | 7.87 | 7.82 | 7.92 | 0.20229 | 0.200 | 1.1 |
| | 2* | 8.70 | 8.65 | 8.75 | | | |
| | 3* | 9.90 | 9.84 | 9.94 | | | |
| | 4 | 10.26 | 10.21 | 10.31 | | | |
| | 5 | 10.58 | 10.53 | 10.63 | | | |
| Aroclor-1260 | 1* | 19.21 | 19.16 | 19.26 | 0.21634 | 0.200 | 8.2 |
| | 2* | 21.55 | 21.50 | 21.60 | | | |
| | 3* | 23.08 | 23.03 | 23.13 | | | |
| | 4 | 24.40 | 24.36 | 24.46 | | | |
| | 5 | 25.79 | 25.75 | 25.85 | | | |

* in Peak column indicates required peaks.

QC LIMITS: % Difference of amounts must be +/- 15.0%.

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# MULTI COMPONENT CALIBRATION VERIFICATION SUMMARY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: .53 (mm) Init. Calib Date(s): 04/21/01 04/21/01

Sample No.(PIBLK): PIBLK Date Analyzed : 05/01/01

Lab File ID: D5094200 Time Analyzed : 2115

Sample No. : AR16603 Date Analyzed : 05/01/01

Lab File ID: D5094199 Time Analyzed : 2034

| MULTI COMPONENT COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | % DIFF |
|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1* | 7.87 | 7.82 | 7.92 | 0.19383 | 0.200 | -3.1 |
| | 2* | 8.70 | 8.65 | 8.75 | | | |
| | 3* | 9.90 | 9.84 | 9.94 | | | |
| | 4 | 10.27 | 10.21 | 10.31 | | | |
| | 5 | 10.59 | 10.53 | 10.63 | | | |
| Aroclor-1260 | 1* | 19.22 | 19.16 | 19.26 | 0.20389 | 0.200 | 1.9 |
| | 2* | 21.56 | 21.50 | 21.60 | | | |
| | 3* | 23.08 | 23.03 | 23.13 | | | |
| | 4 | 24.41 | 24.36 | 24.46 | | | |
| | 5 | 25.79 | 25.75 | 25.85 | | | |

* in Peak column indicates required peaks.

QC LIMITS: % Difference of amounts must be +/- 15.0%.

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# MULTI COMPONENT CALIBRATION VERIFICATION SUMMARY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: RTX-35 ID: .53 (mm) Init. Calib Date(s): 04/30/01 05/01/01

Sample No.(PIBLK): PIBLK Date Analyzed : 05/02/01

Lab File ID: C1115090 Time Analyzed : 1903

Sample No. : AR16603 Date Analyzed : 05/02/01

Lab File ID: C1115088 Time Analyzed : 1750

| MULTI COMPONENT COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | % DIFF |
|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1* | 10.80 | 10.75 | 10.85 | 0.20373 | 0.200 | 1.9 |
| | 2* | 12.05 | 11.99 | 12.09 | | | |
| | 3* | 13.19 | 13.14 | 13.24 | | | |
| | 4 | 13.60 | 13.54 | 13.64 | | | |
| | 5 | 13.94 | 13.88 | 13.98 | | | |
| Aroclor-1260 | 1* | 18.43 | 18.37 | 18.47 | 0.19220 | 0.200 | -3.9 |
| | 2* | 19.46 | 19.40 | 19.50 | | | |
| | 3* | 19.61 | 19.56 | 19.66 | | | |
| | 4 | 20.91 | 20.85 | 20.95 | | | |
| | 5 | 22.04 | 21.98 | 22.08 | | | |

* in Peak column indicates required peaks.

QC LIMITS: % Difference of amounts must be +/- 15.0%.

FORM VII PEST-3
GC-8082:rev 1.0

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION
## GC CONTINUING MASS CALIBRATION

**Standard ID:** **AR16603 (05/02/01 17:50)**

**Calculations:**

Calculate the concentration of one of the compounds used in the continuing calibration. Enter the compound name and the reported concentration.

Compound Name: Aroclor 1260

Lab Value: 0.19220

| | |
|---|---|
| Area of Compound | 208971 |
| CF of Compound | 1073768 |
| Calculated Conc. | 0.19461 |

| | |
|---|---|
| Concentration Peak 1 | 0.19461 |
| Concentration Peak 2 | 0.19357 |
| Concentration Peak 3 | 0.19029 |
| Concentration Peak 4 | 0.18998 |
| Concentration Peak 5 | 0.19262 |
| **Average Conc.** | 0.19221 |

Calculate the %D of one of the compounds used in the continuing calculation. Enter the compound name and the reported %D.

Compound Name: Aroclor 1016

Lab Value: 1.9

| | |
|---|---|
| True Conc | 0.200 |
| Calc Conc | 0.20373 |
| % D | -1.9 |

7F

# MULTI COMPONENT CALIBRATION VERIFICATION SUMMARY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: RTX-35 ID: .53 (mm) Init. Calib Date(s): 04/30/01 05/01/01

Sample No.(PIBLK): PIBLK Date Analyzed : 05/03/01

Lab File ID: C1115102 Time Analyzed : 0222

Sample No. : AR16603 Date Analyzed : 05/03/01

Lab File ID: C1115101 Time Analyzed : 0145

| MULTI COMPONENT COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | % DIFF |
|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1* | 10.80 | 10.75 | 10.85 | 0.19839 | 0.200 | -0.8 |
| | 2* | 12.05 | 11.99 | 12.09 | | | |
| | 3* | 13.19 | 13.14 | 13.24 | | | |
| | 4 | 13.60 | 13.54 | 13.64 | | | |
| | 5 | 13.93 | 13.88 | 13.98 | | | |
| Aroclor-1260 | 1* | 18.42 | 18.37 | 18.47 | 0.18648 | 0.200 | -6.8 |
| | 2* | 19.45 | 19.40 | 19.50 | | | |
| | 3* | 19.61 | 19.56 | 19.66 | | | |
| | 4 | 20.90 | 20.85 | 20.95 | | | |
| | 5 | 22.04 | 21.98 | 22.08 | | | |

* in Peak column indicates required peaks.

QC LIMITS: % Difference of amounts must be +/- 15.0%.

FORM VII PEST-3
GC-8082:rev 1.0

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION
## BLANK SUMMARY

1. Blank qualification guidelines:

   a) If a compound is found in the blank but not in the sample, no action is taken.

   b) Any compound detected in the sample, which was also detected in the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.

   c) The reviewer should take note that the blank analysis may not involve the same weights, volumes or dilution factors as associated samples. These factors must be taken into consideration when applying the 5X and 10X criteria.

   d) In addition, the reviewer must review the trip blanks, rinseate blanks and field blanks (if they were submitted with the data package) and all associated samples. Apply the same data validation guidelines used in assessing the method blanks.

   e) Qualification/Action codes:

      U - The sample result is greater than the CRQL and less than five times (5X) the blank value. Cross out the "B" flag and qualify the sample result with a "U".

      CRQL - The sample result is less than the CRQL and less than five times (5X) the blank value. Reject the sample result, cross out the "B" flag, and report the CRQL.

      No Action - The sample result is greater than the CRQL and greater than five times (5X) the blank value.

4C

# PESTICIDE METHOD BLANK SUMMARY

Lab Name: STL-CT Contract: _____ Client Id: PBLK55

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Lab sample ID: 042901-B04 Lab File ID: D5094178

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 04/29/01

Date Analyzed (1): 04/30/01 Date Analyzed (2): 05/02/01

Time Analyzed (1): 1655 Time Analyzed (2): 1940

Instrument ID (1): HP58905D Instrument ID (2): HP58901C

GC Column (1): DB-1701 ID: 0.53 (mm) GC Column (2): RTX-35 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | PBLK55QC2 | 042901-B04QC2 | 04/30/01 | 05/02/01 |
| 02 | NP-S.WALL | 011012A-07 | 05/01/01 | 05/02/01 |
| 03 | | | | |
| 04 | | | | |
| 05 | | | | |
| 06 | | | | |
| 07 | | | | |
| 08 | | | | |
| 09 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
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| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |

COMMENTS: No Contamination



FORM IV PEST
GC-8081:rev 1.0

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

GC Column: DB-1701 ID: 0.53 (mm)

| | SAMPLE NO. | TCX %REC | # | DCB %REC | # | OTHER %REC | # | OTHER %REC | # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | PBLK55 | 93 | | 127 | | | | | | 0 |
| 02 | PBLK55QC2 | 80 | | 123 | | | | | | 0 |
| 03 | NP-S.WALL | D | | D | | | | | | 0 |
| 04 | | | | | | | | | | |
| 05 | | | | | | | | | | |
| 06 | | | | | | | | | | |
| 07 | | | | | | | | | | |
| 08 | | | | | | | | | | |
| 09 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
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| 26 | | | | | | | | | | |
| 27 | | | | | | | | | | |
| 28 | | | | | | | | | | |
| 29 | | | | | | | | | | |
| 30 | | | | | | | | | | |

ADVISORY QC LIMITS

TCX = Tetrachloro-m-xylene (14-139)
DCB = Decachlorobiphenyl (39-171)

# Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out



FORM II PEST-2
GC-8081:rev 1.0

3H
SOIL PESTICIDE QC CHECK RECOVERY

Lab Name: STL-CT Contract: _____

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Sample No.: PBLK55

| COMPOUND | SPIKE ADDED (UG/KG) | SPIKE CONCENTRATION (UG/KG) | % REC # | QC. LIMITS REC. |
|---|---|---|---|---|
| Aroclor-1242 | 170 | 130 | 76 | 27-136 |
| Aroclor-1260 | 170 | 150 | 88 | 34-128 |
| | | | | |

# Column to be used to flag recovery values with an asterisk

COMMENTS: _____

FORM III PEST-4
GC-8082:rev 1.0

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION
## FIELD DUPLICATE SAMPLE SUMMARY

**Sample ID:** NONE **Duplicate Sample ID:**

**Water:** **RPD > 30%** **Soil:** **RPD > 50%**

| Compound | Sample Conc. | Dup. Sample Conc. | RPD |
|---|---|---|---|
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |
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| | | | ?? |
| | | | ?? |
| | | | ?? |
| | | | ?? |

**Comments:**

HEARTLAND ESI GC HESI96.1

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## SAMPLE CALCULATION

**SAMPLE ID:** NP-S.WALL

**STANDARD ID:** ICAL 04/30/01

**COMPOUND NAME:** Aroclor 1254

**CONCENTRATION:** 2900 µg/Kg

**MATRIX:** SOIL

| | Soil (µg/Kg) |
|---|---|
| Area of Compound | 158660 |
| Calibration Factor | 985740 |
| Final Volume | 10000 |
| Dilution Factor | 50 |
| GPC Factor | NA |
| Injection Volume | NA |
| Weight of Sample | 30.2 |
| Volume of Sample | NA |
| % Moisture | 0.93 |
| Concentration | 2865.39951324 |

| | |
|---|---|
| Conc. Peak 1 | 2865 |
| Conc. Peak 2 | 2748 |
| Conc. Peak 3 | 2972 |
| **Average Conc. (µg/Kg)** | **2861.67** |

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

Lab Name: STL-CT Contract: _____ Client ID: NP-S.WALL

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Lab Sample ID : 011012A-07 Date(s) Analyzed: 05/01/01 05/02/01

Instrument ID (1): HP58905D Instrument ID (2): HP58901C

GC Column(1): DB-1701 0.53(mm) GC Column(2): RTX-35 0.53(mm)

| ANALYTE | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CONC. | %D |
|---|---|---|---|---|---|---|
| PCB-1254 | 1 | 13.40 | 13.34 | 13.44 | 2400 | 20.8 |
| | 2 | 15.59 | 15.53 | 15.63 | | |
| | 3 | 18.28 | 18.22 | 18.32 | | |
| COLUMN 1 | 4 | | | | | |
| | 5 | | | | | |
| | 1 | 16.32 | 16.26 | 16.36 | 2900 | |
| | 2 | 17.32 | 17.26 | 17.36 | | |
| | 3 | 18.06 | 17.98 | 18.08 | | |
| COLUMN 2 | 4 | | | | | |
| | 5 | | | | | |
| PCB-1260 | 1 | 21.55 | 21.50 | 21.60 | 460 | 8.7 |
| | 2 | 24.41 | 24.36 | 24.46 | | |
| | 3 | 25.80 | 25.75 | 25.85 | | |
| COLUMN 1 | 4 | | | | | |
| | 5 | | | | | |
| | 1 | 19.61 | 19.56 | 19.66 | 500 | |
| | 2 | 20.90 | 20.85 | 20.95 | | |
| | 3 | 22.04 | 21.98 | 22.08 | | |
| COLUMN 2 | 4 | | | | | |
| | 5 | | | | | |



FORM X PEST-2
GC-8082:rev1.0

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

Lab Name: STL-CT Contract: _____ Client ID: PBLK55QC2

Lab Code: IEACT Case No.: 1012A SDG No.: A1012

Lab Sample ID : 042901-B04QC2 Date(s) Analyzed: 04/30/01 05/02/01

Instrument ID (1): HP58905D Instrument ID (2): HP58901C

GC Column(1): DB-1701 0.53(mm) GC Column(2): RTX-35 0.53(mm)

| ANALYTE | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CONC. | %D |
|---|---|---|---|---|---|---|
| PCB-1242 | 1 | 7.88 | 7.82 | 7.92 | 110 | 18.2 |
| | 2 | 8.71 | 8.65 | 8.75 | | |
| | 3 | 9.90 | 9.84 | 9.94 | | |
| COLUMN 1 | 4 | 10.98 | 10.91 | 11.01 | | |
| | 5 | 13.43 | 13.38 | 13.48 | | |
| | 1 | 10.81 | 10.75 | 10.85 | 130 | |
| | 2 | 12.05 | 12.00 | 12.10 | | |
| | 3 | 12.80 | 12.75 | 12.85 | | |
| COLUMN 2 | 4 | 13.19 | 13.14 | 13.24 | | |
| | 5 | 15.74 | 15.68 | 15.78 | | |
| PCB-1260 | 1 | 19.23 | 19.16 | 19.26 | 130 | 15.4 |
| | 2 | 21.57 | 21.50 | 21.60 | | |
| | 3 | 23.10 | 23.03 | 23.13 | | |
| COLUMN 1 | 4 | 24.42 | 24.36 | 24.46 | | |
| | 5 | 25.81 | 25.75 | 25.85 | | |
| | 1 | 18.42 | 18.37 | 18.47 | 150 | |
| | 2 | 19.45 | 19.40 | 19.50 | | |
| | 3 | 19.61 | 19.56 | 19.66 | | |
| COLUMN 2 | 4 | 20.90 | 20.85 | 20.95 | | |
| | 5 | 22.04 | 21.98 | 22.08 | | |
| | | | | | | |
| | | | | | | |



FORM X PEST-2
GC-8082:rev1.0

INSTRUMENT DETECTION LIMITS
Instrument : HP58905D
DB-1701 column
01/27/2001

| | IDL ug/L | Quantitation Limit ug/L |
|---|---|---|
| 4,4'-DDD | 0.0302 | 0.10 |
| 4,4'-DDE | 0.0195 | 0.10 |
| 4,4'-DDT | 0.0405 | 0.10 |
| Aldrin | 0.0036 | 0.05 |
| alpha-BHC | 0.0046 | 0.05 |
| alpha-Chlordane | 0.0049 | 0.05 |
| beta-BHC | 0.0076 | 0.05 |
| Chlorobenzilate | 0.0432 | 1.0 |
| delta-BHC | 0.0083 | 0.05 |
| Dieldrin | 0.0121 | 0.10 |
| Endosulfan I | 0.0079 | 0.05 |
| Endosulfan II | 0.0102 | 0.10 |
| Endosulfan Sulfate | 0.0084 | 0.10 |
| Endrin | 0.0309 | 0.10 |
| Endrin Aldehyde | 0.0095 | 0.10 |
| Endrin Ketone | 0.0125 | 0.10 |
| gamma-BHC | 0.0057 | 0.05 |
| gamma-Chlordane | 0.0052 | 0.05 |
| Heptachlor | 0.0066 | 0.05 |
| Heptachlor Epoxide | 0.0040 | 0.05 |
| Isodrin | 0.0054 | 0.05 |
| Methoxychlor | 0.1667 | 0.50 |
| | | |
| Toxaphene | 0.963 | 2.5 |
| Technical Chlordane | 0.080 | 0.50 |
| Aroclor-1221 | 1.417 | 2.0 |
| Aroclor-1016 | 0.241 | 1.0 |
| Aroclor-1232 | 0.106 | 1.0 |
| Aroclor-1242 | 0.026 | 1.0 |
| Aroclor-1248 | 0.059 | 1.0 |
| Aroclor-1254 | 0.100 | 1.0 |
| Aroclor-1260 | 0.146 | 1.0 |

Instrument detection limits are based on a 1000ml Initial Volume and 10ml Final Volume

INSTRUMENT DETECTION LIMITS
Instrument : HP58901C
RTX-35 column
02/16/2001

| | IDL ug/L | Quantitation Limit ug/L |
|---|---|---|
| 4,4'-DDD | 0.0083 | 0.10 |
| 4,4'-DDE | 0.0050 | 0.10 |
| 4,4'-DDT | 0.0115 | 0.10 |
| Aldrin | 0.0024 | 0.05 |
| alpha-BHC | 0.0029 | 0.05 |
| alpha-Chlordane | 0.0033 | 0.05 |
| beta-BHC | 0.0022 | 0.05 |
| Chlorobenzilate | 0.0669 | 1.0 |
| delta-BHC | 0.0037 | 0.05 |
| Dieldrin | 0.0045 | 0.10 |
| Endosulfan I | 0.0074 | 0.05 |
| Endosulfan II | 0.0223 | 0.10 |
| Endosulfan Sulfate | 0.0110 | 0.10 |
| Endrin | 0.0041 | 0.10 |
| Endrin Aldehyde | 0.0188 | 0.10 |
| Endrin Ketone | 0.0088 | 0.10 |
| gamma-BHC | 0.0019 | 0.05 |
| gamma-Chlordane | 0.0009 | 0.05 |
| Heptachlor | 0.0024 | 0.05 |
| Heptachlor Epoxide | 0.0034 | 0.05 |
| Isodrin | 0.0119 | 0.05 |
| Methoxychlor | 0.0437 | 0.50 |
| | | |
| Toxaphene | 0.743 | 2.5 |
| Technical Chlordane | 0.065 | 0.50 |
| Aroclor-1221 | 0.189 | 2.0 |
| Aroclor-1016 | 0.151 | 1.0 |
| Aroclor-1232 | 0.207 | 1.0 |
| Aroclor-1242 | 0.214 | 1.0 |
| Aroclor-1248 | 0.061 | 1.0 |
| Aroclor-1254 | 0.137 | 1.0 |
| Aroclor-1260 | 0.030 | 1.0 |

Instrument detection limits are based on a 1000ml Initial Volume and 10ml Final Volume

# Heartland ESI
# Request for Laboratory Re-submissions

**Date Requested: 10/12/01** **Reviewers Initials: EKK**

**Client: Gannett Fleming** **Project: 425 Merrick Ave**

**Laboratory: STL CT** **Fraction: PCBs (SW-846 8082)**

**SDG: A1012**

**Data Deficiencies:**

1. The raw data for the following CCVs was not included in the data package. The raw data for these standards is requested.

| CCV ID | Date/Time Analyzed | File ID |
|---|---|---|
| AR16603 | 04/30/01 12:49 | D5094172 |
| AR16603 | 04/30/01 21:42 | D5094185 |

**Action Required:** The noted items are requested to complete data validation. Thank you.

**Date Re-submissions Requested: 10/12/01** **By: Erica K. Ketcham**

**Submitted By: Erica Ketcham** **Date Received:** 10-16-01

**HEARTLAND ESI GC** **HESI96.1**

## MULTI-MEDIA PESTICIDE/AROCLOR FRACTION

## SAMPLE RESULT VERIFICATION

1. Were the sample results reported within the calibration range (YES/NO)? YES

2. Was the percent moisture reported for all soil samples (YES/NO/NA)? YES

3. Was the data reported on a dry weight basis (YES/NO/NA)? YES

4. Did the GC chromatograms exhibit interferences, off scale peaks or elevated baseline (YES/NO)? NO

5. Did the data contain elevated detection limits that could not be verified (YES/NO)? NO

6. Were any computational or transcription errors found (YES/NO)? NO

**Specific Comments:**

**Reviewer** Erica K. Ketchan **Date:** 10/12/01

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART I

Site Name: Garrett  Client: GF

Location: A1012  Lab: STL

Analytical Fraction: Mercury

Reviewer: P. Hamby  Date(s): 10/4/01

| | | | | |
|---|---|---|---|---|
| A. | Control Chart - results of the method blank spikes run with each batch of samples processed | Yes | (No) | NR |
| B. | CLP Form 1s with associated sample results and CLP flagging system. All percent moistures for soils and discussion of sample type | (Yes) | No | NR |
| C. | CLP Form 2s with initial and continuing calibration standards (part 1 only) | (Yes) | No | NR |
| D. | CLP Form 3s with prep and method blanks | (Yes) | No | NR |
| E. | CLP Form 4s with Interference check sample data | (Yes) | No | NR |
| F. | CLP Form 5s with Matrix spike recovery and the postdigestion spike recovery for ICP Metals. Only done if predigest spike recovery exceeds limits | (Yes) | No | NR |
| G. | CLP Form 6s with Duplicate data results | (Yes) | No | NR |
| H. | CLP Form 7s with LCS data results | (Yes) | No | NR |
| I. | CLP Form 8s with GFAA standard addition data | Yes | No | (NR) |
| J. | CLP Form 9s with Serial Dilution data results | (Yes) | No | NR |

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART II

| | | | | |
|---|---|---|---|---|
| K. | CLP Form 10s with Instrument Detection Data | : (Yes) | No | NR |
| L. | CLP Forms 11 and 12 with Quarterly Verification of Instrument Parameters | : (Yes) | No | NR |
| M. | CLP Form 13s with Preparation Log data | : (Yes) | No | NR |
| N. | CLP Form 14s with Run Log data | : (Yes) | No | NR |

HEARTLAND. ESI Form A

## DATA DELIVERABLE REQUIREMENTS

| | | | | |
|---|---|---|---|---|
| A. | Permanently Bound | Yes | (No) | NR |
| B. | Paginated | (Yes) | No | NR |
| C. | Table of Contents | (Yes) | No | NR |
| D. | Digestion Records(internal C-O-C) | (Yes) | No | NR |
| E. | Chain-Of-Custody (external) | (Yes) | No | NR |
| F. | Case Narrative | | | |
| | 1. Sample list with Client and Lab IDs cross-referenced (copy attached) | (Yes) | No | NR |
| | 2. All Protocol deviations and QC problems noted | (Yes) | No | NR |
| | 3. Comments:_____ | | | |
| G. | Uninitialed Strikeovers | Yes | (No) | NR |
| H. | Legible Photocopies | (Yes) | No | NR |
| I. | Consistent Dates | (Yes) | No | NR |
| J. | Preparation Logs | (Yes) | No | NR |
| K. | Instrument Run Logs | (Yes) | No | NR |
| L. | Other Deviations or Comments:_____ | | | |

HEARTLAND ESI Form 8

## HOLDING TIMES FOR METALS

1. Was the holding time exceeded on any of the Metal Fractions

   ICP/GFAA/FAA - Holding time of 6 months VTSR
   Mercury - Holding time of 28 days VTSR
   Cyanide - Holding time of 14 days VTSR

   Yes (No)

2. - If yes, complete the following form for all samples that exceeding holding times.

   Fraction:_____

| Sample ID | Matrix | VTSR | Date of Analysis | DA | QC Decision |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | PB# | 10/4/01 | |
| | | | | | |
| | | | | | |

Note: DA = The number of days holding time to analysis is exceeded.

S = Non-aqueous
A = Aqueous
X = Air

QA Decision: Results > IDL - J - estimated

Results < IDL - R - rejected

HEARTLAND ESI Form C-1

INSTRUMENT CALIBRATION AND INITIAL CALIBRATION VERIFICATION (ICV)

Associated Samples All Samples

1. a. Was the ICP instrument properly standardized? (Yes) No
If no, explain and list action. NR

b. Was the furnace instrument properly standardized? If no, were the required standards analyzed immediately after the instrument calibration and results within 95-105% recovery? Yes No — Yes No
If no, explain and list action. NR

c. Were the instruments for the analyses of Cyanide and Mercury properly standardized? (Yes) No
If no, explain and list action.

2. Was the ICV analyzed immediately after the system(s) were calibrated? (Yes) No
If no, explain and list action.

3. Was the ICV analyzed for every analyte? (Yes) No
If no, explain and list action.

4. Do all ICV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their % recovery, and action for which:

a. % recovery is between 75-89% (CN, 70-84% or HG, 65-79%)

b. % recovery is between 111-125% (CN, 116-130% or HG, 121-135%)_____

c. % recovery is less than 75% or greater than 125%(CN, <70 or >130%, Hg <65 or >135)_____

5. a. Show calculation for the % recovery of one ICV analyte by ICP. Lab value NR

b. Show calculation for the % recovery of one ICV analyte by furnace AA. Lab value NR

c. Show calculation for the ICV % recovery of Mercury. Lab Value 103%

$\frac{5.15}{5.00} \times 100 = 103\%$

d. Show calculation for the ICV % recovery of Cyanide. Lab value NR

6. Specific comments:_____

HEARTLAND ESI Form D-1

CONTINUING CALIBRATION VERIFICATION (CCV)

Associated Samples All Samples

1. a. Was the CCV performed every two hours or at the 10% frequency? Yes No
If no, list action.

b. Was the CCV performed at the beginning and end of the sample analysis? Yes No
If no, list action.

2. Were the CCV standards analyzed for all analytes? Yes No
If no, list affected analytes, their associated samples and action.

3. Was the same concentration used for CCV throughout the analyses? Yes No
If no, list affected analytes, their associated samples and action.

4. Do all CCV analytes meet the QC requirements for % recovery? Yes No
If no, list affected analytes, their associated samples and action for which:

a. % recovery is between 75-89%(CN,70-84% or Hg, 65-79%)

b. % recovery is between 111-125%(CN,116-130% or Hg, 121-135%)

c. % recovery is less than 75% or greater than 125%(CN,<70 or

HEARTLAND ESI Form D-2

5. a. Show calculation for the % recovery of one CCV analyte analyzed by ICP. Lab value NR

b. Show calculation for the % recovery of one CCV analyte analyzed by furnace AA. Lab value NR

c. Show calculation for the % recovery of one CCV analyte analyzed for Mercury. Lab value 102.4 %

$\frac{5.12}{5.00} \times 100 = 102.4\ \%$

d. Show calculation for the % recovery of one CCV analyte for Cyanide. Lab value NR

6. Specific comments: _____

HEARTLAND ESI Form F

## INITIAL & CONTINUING CALIBRATION BLANK

Associated Samples All Samples

1. Were the initial calibration blanks analyzed for all analytes and run after the initial calibration verification? (Yes) No
If no, list affected analytes, and action.

2. Was the absolute value for all analytes in the initial calibration blank below the CRDL? (Yes) No
If no, list affected analytes and reject them.

3. Were the continuing calibration blanks analyzed for all analytes and run after the continuing calibration verification? (Yes) No
If no, list affected analytes, associated samples and action.

4. Was the frequency for the continuing calibration blanks correct? (Yes) No
If no, list affected analytes, associated samples and action.

5. Was the absolute value of all analytes for the continuing calibration blank below the CRDL? (Yes) No
If no, list affected analytes, associated samples and reject them.

HEARTLAND ESI Form G

## PREPARATION BLANK SUMMARY

Sample Matrix: (Soil) Water Air Preparation Blank ID PBS
Units: (mg/kg) ug/l ug/m3

1. Did the frequency of the preparation blank analysis meet method requirements? (Yes) No
If no, explain and note action: _____

| Analyte | Conc | <CRDL | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | PBK 10/4/01 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Associated Samples: All Soil samples

CRDL Codes: Yes < CRDL
No > CRDL

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

NP-E.WALLS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 92.06

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

| Analyte | Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | | 1.9114 | | 2.7470 | | 0.05 | 0.0 | | CV |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |
| | | | | | | | | | |

Comments:

FORM V (PART 1) - IN ILM04.0

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

NP-E.WALLD

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1012A SAS No.: _____ SDG No.: A1012

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 92.06 % Solids for Duplicate: 92.06

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | NR |
| Antimony | | | | | | | | NR |
| Arsenic | | | | | | | | NR |
| Barium | | | | | | | | NR |
| Beryllium | | | | | | | | NR |
| Cadmium | | | | | | | | NR |
| Calcium | | | | | | | | NR |
| Chromium | | | | | | | | NR |
| Cobalt | | | | | | | | NR |
| Copper | | | | | | | | NR |
| Iron | | | | | | | | NR |
| Lead | | | | | | | | NR |
| Magnesium | | | | | | | | NR |
| Manganese | | | | | | | | NR |
| Mercury | | 2.7470 | | 2.8880 | | 5.0 | | CV |
| Nickel | | | | | | | | NR |
| Potassium | | | | | | | | NR |
| Selenium | | | | | | | | NR |
| Silver | | | | | | | | NR |
| Sodium | | | | | | | | NR |
| Thallium | | | | | | | | NR |
| Vanadium | | | | | | | | NR |
| Zinc | | | | | | | | NR |
| Cyanide | | | | | | | | NR |
| | | | | | | | | |

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7

LABORATORY CONTROL SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1012

Solid LCS Source: INORG. VENT.

Aqueous LCS Source: _____

| Analyte | Aqueous (ug/L) True | Found | %R | Solid (mg/kg) True | Found | C | Limits | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | |
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Calcium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Cobalt | | | | | | | | | |
| Copper | | | | | | | | | |
| Iron | | | | | | | | | |
| Lead | | | | | | | | | |
| Magnesium | | | | | | | | | |
| Manganese | | | | | | | | | |
| Mercury | | | | 2.4 | 2.7 | | 1.6 | 3.2 | 111.4 |
| Nickel | | | | | | | | | |
| Potassium | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Sodium | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| Cyanide | | | | | | | | | |
| | | | | | | | | | |

**HEARTLAND**
**ENVIRONMENTAL SERVICES, INC.**

# Data Validation Report

| | |
|---|---|
| SDG#: | A1269 |
| Date: | October 17, 2001 |
| Client Name: | Gannett Fleming |
| Project/Site Name: | 425 Merrick Ave |
| Date Sampled: | May 22, 2001 |
| Number of Samples: | 5 Non-Aqueous Sample(s) with 1 MS/MSD(s) |
| Laboratory: | STL |
| Validation Guidance: | National Functional Guidelines for Organic and Inorganic Data |
| QA/QC Level: | NYSDEC ASP Category B |
| Method(s) Utilized: | SW846 Third Edition |
| Analytical Fractions: | Mercury |

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Seafoss
Paul B. Humburg, President

10-17-01.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(636) 936-1332 • Fax (636) 936-1335

**SDG# A1269**

## Samples and Fractions Reviewed

Sample Identifications Analytical Fraction

| GANNETT FLEMING ID | MATRIX | Hg | |
|---|---|---|---|
| MR4-E. WALL | SOIL | | X |
| MR4-E. WALL MS | SOIL | | X |
| MR4-E. WALL MSD | SOIL | | X |
| MR4-N. WALL | SOIL | | X |
| MR4-S. WALL | SOIL | | X |
| MR4-BOTTOM | SOIL | | X |
| NP-E. WALL | SOIL | | X |
| Total Billable Samples (Water/Soil) | | 0 | 7 |

Hg= Mercury

# DATA ASSESSMENT NARRATIVE
# MERCURY

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 methods for Mercury and the Functional Guidelines for Inorganic Data Validation, February 1994 requirements and NYSDEC ASP Category B. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

## SDGs # A1269

A validation was performed on the Metals Data from SDG A1269. The data was evaluated based on the following parameters.

| | | |
|---|---|---|
| * | ● | Data Completeness |
| * | ● | Holding Times |
| * | ● | Calibrations |
| * | ● | Blanks |
| * | ● | Interferences |
| * | ● | Matrix Spike Recovery |
| * | ● | Matrix Duplicates |
| * | ● | Field Duplicates |
| * | ● | Laboratory Control Samples |
| * | ● | Serial Dilutions |

* - All criteria were met for this parameter.

# SUMMARY OF DATA QUALIFICATIONS

| Sample ID | Analyte | DL | QL |
|---|---|---|---|

Data stands as reported without qualification.

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
MR4-E.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix (soil/water): SOIL Lab Sample ID: 011269A-01

Level (low/med): LOW Date Received: 05/22/01

% Solids: 94

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.90 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

_____

_____

_____

_____

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-N.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix (soil/water): SOIL Lab Sample ID: 011269A-02

Level (low/med): LOW Date Received: 05/22/01

% Solids: 94.1

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.36 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-S.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix (soil/water): SOIL Lab Sample ID: 011269A-03

Level (low/med): LOW Date Received: 05/22/01

% Solids: 91

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.73 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PBK
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

_____

_____

_____

_____

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
MR4-BOTTOM

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix (soil/water): SOIL Lab Sample ID: 011269A-04

Level (low/med): LOW Date Received: 05/22/01

% Solids: 93.4

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.083 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PBW
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

_____

_____

_____

_____

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
NP-E.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix (soil/water): SOIL Lab Sample ID: 011269A-05

Level (low/med): LOW Date Received: 05/22/01

% Solids: 93.3

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.22 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PBW 6/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART I

Site Name: Gurnett  Client: GF

Location: A1261  Lab: STL

Analytical Fraction: Mercury only

Reviewer: P. Humby  Date(s): 10/4/01

| | | | |
|---|---|---|---|
| A. | Control Chart - results of the method blank spikes run with each batch of samples processed | : Yes (No) | NR |
| B. | CLP Form 1s with associated sample results and CLP flagging system. All percent moistures for soils and discussion of sample type | : (Yes) No | NR |
| C. | CLP Form 2s with initial and continuing calibration standards (part 1 only) | : (Yes) No | NR |
| D. | CLP Form 3s with prep and method blanks | : (Yes) No | NR |
| E. | CLP Form 4s with Interference check sample data | : (Yes) No | NR |
| F. | CLP Form 5s with Matrix spike recovery and the postdigestion spike recovery for ICP Metals. Only done if predigest spike recovery exceeds limits | : (Yes) No | NR |
| G. | CLP Form 6s with Duplicate data results | : (Yes) No | NR |
| H. | CLP Form 7s with LCS data results | : (Yes) No | NR |
| I. | CLP Form 8s with GFAA standard addition data | : Yes No | (NR) |
| J. | CLP Form 9s with Serial Dilution data results | : (Yes) No | NR |

## DATA DELIVERABLES (DQO Level IV or D)
## INORGANICS - PART II

| | | | | |
|---|---|---|---|---|
| K. | CLP Form 10s with Instrument Detection Data | : Yes | No | NR |
| L. | CLP Forms 11 and 12 with Quarterly Verification of Instrument Parameters | : Yes | No | NR |
| M. | CLP Form 13s with Preparation Log data | : Yes | No | NR |
| N. | CLP Form 14s with Run Log data | : Yes | No | NR |

HEARTLAND ESI Form A

DATA DELIVERABLE REQUIREMENTS

| | | | | |
|---|---|---|---|---|
| A. | Permanently Bound | Yes | (No) | NR |
| B. | Paginated | (Yes) | No | NR |
| C. | Table of Contents | (Yes) | No | NR |
| D. | Digestion Records(internal C-O-C) | (Yes) | No | NR |
| E. | Chain-Of-Custody (external) | (Yes) | No | NR |
| F. | Case Narrative | | | |
| | 1. Sample list with Client and Lab IDs cross-referenced (copy attached) | (Yes) | No | NR |
| | 2. All Protocol deviations and QC problems noted | (Yes) | No | NR |
| | 3. Comments:_____ | | | |
| G. | Uninitialed Strikeovers | Yes | (No) | NR |
| H. | Legible Photocopies | (Yes) | No | NR |
| I. | Consistent Dates | (Yes) | No | NR |
| J. | Preparation Logs | (Yes) | No | NR |
| K. | Instrument Run Logs | (Yes) | No | NR |
| L. | Other Deviations or Comments:_____ | | | |

HEARTLAND ESI Form B

## HOLDING TIMES FOR METALS

1. Was the holding time exceeded on any of the Metal Fractions

   ICP/GFAA/FAA - Holding time of 6 months VTSR
   Mercury - Holding time of 28 days VTSR
   Cyanide - Holding time of 14 days VTSR

   Yes (No)

2. - If yes, complete the following form for all samples that exceeding holding times.

Fraction:_____

| Sample ID | Matrix | VTSR | Date of Analysis | DA | QC Decision |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

10/4/01

Note: DA = The number of days holding time to analysis is exceeded.

S = Non-aqueous
A = Aqueous
X = Air

QA Decision: Results > IDL - J - estimated

Results < IDL - R - rejected

HEARTLAND ESI Form C-1

INSTRUMENT CALIBRATION AND INITIAL CALIBRATION VERIFICATION (ICV)

Associated Samples All Samples

1. a. Was the ICP instrument properly standardized? (Yes) No
If no, explain and list action.

b. Was the furnace instrument properly standardized? If no, were the required standards analyzed immediately after the instrument calibration and results within 95-105% recovery? Yes No NR
If no, explain and list action.

c. Were the instruments for the analyses of Cyanide and Mercury properly standardized? (Yes) No
If no, explain and list action.

2. Was the ICV analyzed immediately after the system(s) were calibrated? (Yes) No
If no, explain and list action.

3. Was the ICV analyzed for every analyte? (Yes) No
If no, explain and list action.

4. Do all ICV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their % recovery, and action for which:

a. % recovery is between 75-89% (CN, 70-84% or HG, 65-79%)

HEARTLAND ESI Form C-2

b. % recovery is between 111-125% (CN, 116-130% or HG, 121-135%)_____

c. % recovery is less than 75% or greater than 125%(CN.<70 or >130%, Hg <65 or >135)_____

5. a. Show calculation for the % recovery of one ICV analyte by ICP. Lab value NR

b. Show calculation for the % recovery of one ICV analyte by furnace AA. Lab value NR

c. Show calculation for the ICV % recovery of Mercury. Lab Value 103%

$\frac{5.15}{5.00} \times 100 = 103\%$

d. Show calculation for the ICV % recovery of Cyanide. Lab value NR

6. Specific comments:_____

HEARTLAND ESI Form D-1

CONTINUING CALIBRATION VERIFICATION (CCV)

Associated Samples All samples

1. a. Was the CCV performed every two hours or at the 10% frequency? (Yes) No
If no, list action.

b. Was the CCV performed at the beginning and end of the sample analysis? (Yes) No
If no, list action.

2. Were the CCV standards analyzed for all analytes? (Yes) No
If no, list affected analytes, their associated samples and action.

3. Was the same concentration used for CCV throughout the analyses? (Yes) No
If no, list affected analytes, their associated samples and action.

4. Do all CCV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their associated samples and action for which:

a. % recovery is between 75-89%(CN, 70-84% or Hg, 65-79%)

b. % recovery is between 111-125%(CN, 116-130% or Hg, 121-135%)

c. % recovery is less than 75% or greater than 125%(CN, <70 or

HEARTLAND ESI Form D-2

5. a. Show calculation for the % recovery of one CCV analyte analyzed by ICP. Lab value NR

b. Show calculation for the % recovery of one CCV analyte analyzed by furnace AA. Lab value NR

c. Show calculation for the % recovery of one CCV analyte analyzed for Mercury. Lab value 98.09

$\frac{4.90}{5.00} \times 100 = 98\%$

d. Show calculation for the % recovery of one CCV analyte for Cyanide. Lab value NR

6. Specific comments: _____

HEARTLAND ESI Form F

INITIAL & CONTINUING CALIBRATION BLANK

Associated Samples All Sample

1. Were the initial calibration blanks analyzed for all analytes and run after the initial calibration verification? (Yes) No
If no, list affected analytes, and action.

2. Was the absolute value for all analytes in the initial calibration blank below the CRDL? (Yes) No
If no, list affected analytes and reject them.

3. Were the continuing calibration blanks analyzed for all analytes and run after the continuing calibration verification? (Yes) No
If no, list affected analytes, associated samples and action.

4. Was the frequency for the continuing calibration blanks correct? (Yes) No
If no, list affected analytes, associated samples and action.

5. Was the absolute value of all analytes for the continuing calibration blank below the CRDL? (Yes) No
If no, list affected analytes, associated samples and reject them.

HEARTLAND ESI Form G

PREPARATION BLANK SUMMARY

Sample Matrix: (Soil) Water Air Preparation Blank ID PBS
Units: (mg/kg) ug/l ug/m3

1. Did the frequency of the preparation blank analysis meet method requirements? (Yes) No
If no, explain and note action: _____

| Analyte | Conc | <CRDL | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
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| | | | |

PBS 10/4/01

Associated Samples: All Soil Samples

CRDL Codes: Yes < CRDL
No > CRDL

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MR4-E.WALLS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 94

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

| Analyte | Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | | 0.9694 | | 0.9008 | | 0.08 | 80.0 | | CV |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |
| | | | | | | | | | |

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MR4-E.WALLD

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1269A SAS No.: _____ SDG No.: A1269

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 94 % Solids for Duplicate: 94

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | NR |
| Antimony | | | | | | | | NR |
| Arsenic | | | | | | | | NR |
| Barium | | | | | | | | NR |
| Beryllium | | | | | | | | NR |
| Cadmium | | | | | | | | NR |
| Calcium | | | | | | | | NR |
| Chromium | | | | | | | | NR |
| Cobalt | | | | | | | | NR |
| Copper | | | | | | | | NR |
| Iron | | | | | | | | NR |
| Lead | | | | | | | | NR |
| Magnesium | | | | | | | | NR |
| Manganese | | | | | | | | NR |
| Mercury | | 0.9008 | | 0.9266 | | 2.8 | | CV |
| Nickel | | | | | | | | NR |
| Potassium | | | | | | | | NR |
| Selenium | | | | | | | | NR |
| Silver | | | | | | | | NR |
| Sodium | | | | | | | | NR |
| Thallium | | | | | | | | NR |
| Vanadium | | | | | | | | NR |
| Zinc | | | | | | | | NR |
| Cyanide | | | | | | | | NR |
| | | | | | | | | |

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7

LABORATORY CONTROL SAMPLE

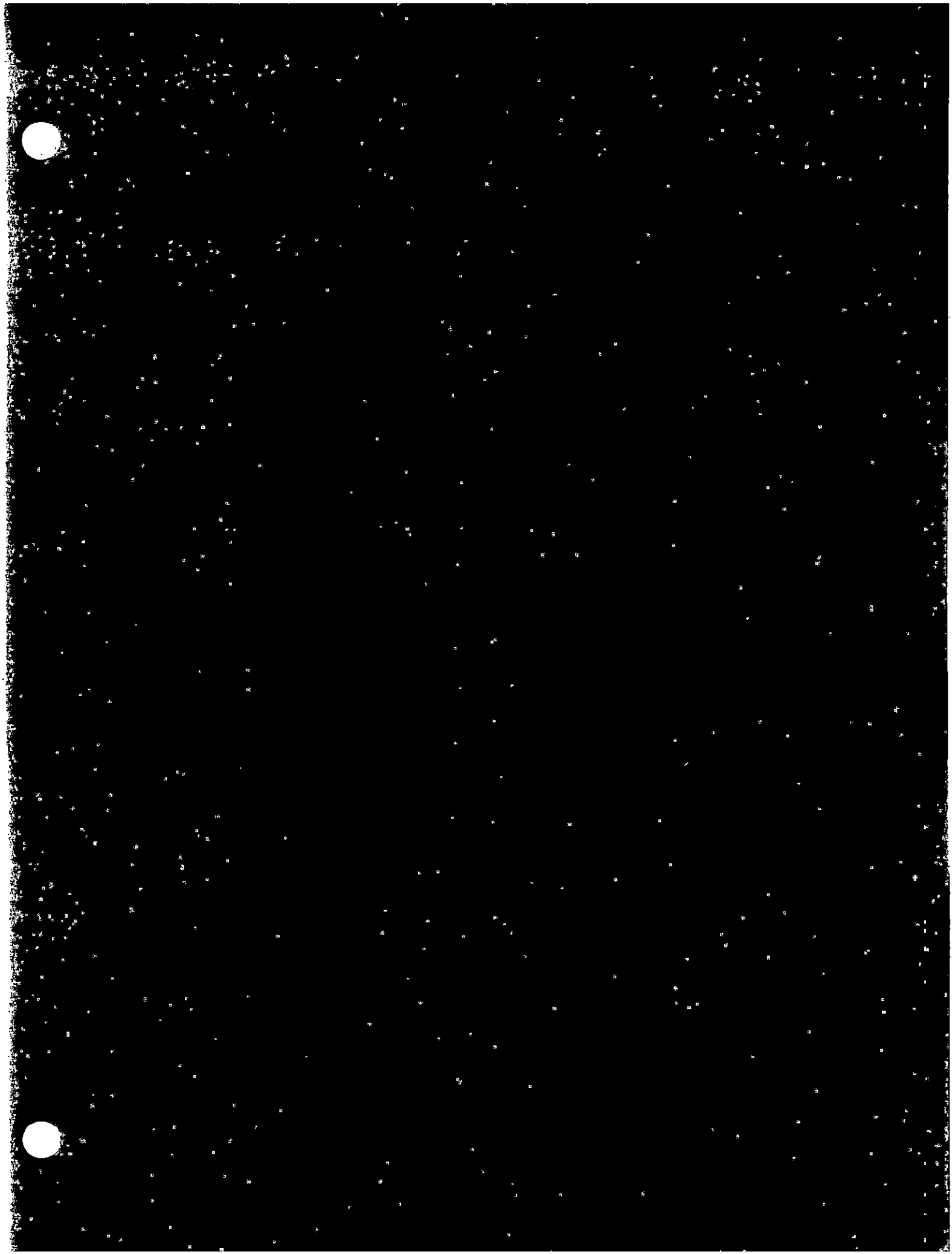
Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1269

Solid LCS Source: INORG. VENT.

Aqueous LCS Source: _____

| Analyte | Aqueous (ug/L) True | Found | %R | Solid (mg/kg) True | Found | C | Limits | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | |
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Calcium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Cobalt | | | | | | | | | |
| Copper | | | | | | | | | |
| Iron | | | | | | | | | |
| Lead | | | | | | | | | |
| Magnesium | | | | | | | | | |
| Manganese | | | | | | | | | |
| Mercury | | | | 2.4 | 2.4 | | 1.6 | 3.2 | 98.8 |
| Nickel | | | | | | | | | |
| Potassium | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Sodium | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| Cyanide | | | | | | | | | |
| | | | | | | | | | |



HEARTLAND
ENVIRONMENTAL SERVICES, INC.

# Data Validation Report

| | |
|---|---|
| SDG#: | A1395 |
| Date: | October 17, 2001 |
| Client Name: | Gannett Fleming |
| Project/Site Name: | 425 Merrick Ave |
| Date Sampled: | June 5, 2001 |
| Number of Samples: | 4 Non-Aqueous Sample(s) with 1 MS/MSD(s) |
| Laboratory: | STL |
| Validation Guidance: | National Functional Guidelines for Organic and Inorganic Data |
| QA/QC Level: | NYSDEC ASP Category B |
| Method(s) Utilized: | SW846 Third Edition |
| Analytical Fractions: | Mercury |

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Scanlon
Paul B. Humburg, President

10-17-01.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(636) 936-1332 • Fax (636) 936-1335

**SDG# A1395**

## Samples and Fractions Reviewed

Sample Identifications Analytical Fraction

| GANNETT FLEMING ID | MATRIX | Hg | |
|---|---|---|---|
| MR4-E. WALL | SOIL | | X |
| MR4-E. WALL MS | SOIL | | X |
| MR4-E. WALL MSD | SOIL | | X |
| MR4-N. WALL | SOIL | | X |
| MR4-S. WALL | SOIL | | X |
| NP-E. WALL | SOIL | | X |
| Total Billable Samples (Water/Soil) | | 0 | 6 |

Hg= Mercury

# DATA ASSESSMENT NARRATIVE
# MERCURY

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 methods for Mercury and the Functional Guidelines for Inorganic Data Validation, February 1994 requirements and NYSDEC ASP Category B. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

## SDGs # A1395

A validation was performed on the Metals Data from SDG A1395. The data was evaluated based on the following parameters.

- * Data Completeness
- * Holding Times
- * Calibrations
- * Blanks
- * Interferences
- * Matrix Spike Recovery
- * Matrix Duplicates
- * Field Duplicates
- * Laboratory Control Samples
- * Serial Dilutions

* - All criteria were met for this parameter.

# SUMMARY OF DATA QUALIFICATIONS

| Sample ID | Analyte | DL | QL |
|---|---|---|---|

Data stands as reported without qualification.

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
MR4-E.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1395A SAS No.: _____ SDG No.: A1395

Matrix (soil/water): SOIL Lab Sample ID: 011395A-01

Level (low/med): LOW Date Received: 06/06/01

% Solids: 92.2

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.036 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

JDK
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-S.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1395A SAS No.: _____ SDG No.: A1395

Matrix (soil/water): SOIL Lab Sample ID: 011395A-02

Level (low/med): LOW Date Received: 06/06/01

% Solids: 87.4

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.51 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PB4

10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4-N.WALL

1 Name: STL Contract: _____

Lab Code: STL Case No.: 1395A SAS No.: _____ SDG No.: A1395

Matrix (soil/water): SOIL Lab Sample ID: 011395A-03

Level (low/med): LOW Date Received: 06/06/01

% Solids: 91.2

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.063 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

JB 10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
NP-E.WALL

Name: STL Contract: _____

Lab Code: STL Case No.: 1395A SAS No.: _____ SDG No.: A1395

Matrix (soil/water): SOIL Lab Sample ID: 011395A-04

Level (low/med): LOW Date Received: 06/06/01

% Solids: 91.8

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.20 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PB Lv
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART I

Site Name: Gwmatt
Client: GF
Location: A1395
Lab: STL
Analytical Fraction: Mercury only
Reviewer: P. Hunby
Date(s): 10/4/01

| | | | | |
|---|---|---|---|---|
| A. | Control Chart - results of the method blank spikes run with each batch of samples processed | : Yes (No) | | NR |
| B. | CLP Form 1s with associated sample results and CLP flagging system. All percent moistures for soils and discussion of sample type | : (Yes) | No | NR |
| C. | CLP Form 2s with Initial and continuing calibration standards (part 1 only) | : (Yes) | No | NR |
| D. | CLP Form 3s with prep and method blanks | : (Yes) | No | NR |
| E. | CLP Form 4s with Interference check sample data | : (Yes) | No | NR |
| F. | CLP Form 5s with Matrix spike recovery and the postdigestion spike recovery for ICP Metals. Only done if predigest spike recovery exceeds limits | : (Yes) | No | NR |
| G. | CLP Form 6s with Duplicate data results | : (Yes) | No | NR |
| H. | CLP Form 7s with LCS data results | : (Yes) | No | NR |
| I. | CLP Form 8s with GFAA standard addition data | : Yes | No | (NR) |
| J. | CLP Form 9s with Serial Dilution data results | : (Yes) | No | NR |

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART II

| | | | | |
|---|---|---|---|---|
| K. | CLP Form 10s with Instrument Detection Data | : (Yes) | No | NR |
| L. | CLP Forms 11 and 12 with Quarterly Verification of Instrument Parameters | : (Yes) | No | NR |
| M. | CLP Form 13s with Preparation Log data | : (Yes) | No | NR |
| N. | CLP Form 14s with Run Log data | : (Yes) | No | NR |

HEARTLAND ESI Form A

## DATA DELIVERABLE REQUIREMENTS

| | | | | |
|---|---|---|---|---|
| A. | Permanently Bound | Yes | (No) | NR |
| B. | Paginated | (Yes) | No | NR |
| C. | Table of Contents | (Yes) | No | NR |
| D. | Digestion Records(internal C-O-C) | (Yes) | No | NR |
| E. | Chain-Of-Custody (external) | (Yes) | No | NR |
| F. | Case Narrative | | | |
| | 1. Sample list with Client and Lab IDs cross-referenced (copy attached) | (Yes) | No | NR |
| | 2. All Protocol deviations and QC problems noted | (Yes) | No | NR |
| | 3. Comments:_____ | | | |
| G. | Uninitialed Strikeovers | Yes | (No) | NR |
| H. | Legible Photocopies | (Yes) | No | NR |
| I. | Consistent Dates | (Yes) | No | NR |
| J. | Preparation Logs | (Yes) | No | NR |
| K. | Instrument Run Logs | (Yes) | No | NR |
| L. | Other Deviations or Comments:_____ | | | |

HEARTLAND ESI Form B

## HOLDING TIMES FOR METALS

1. Was the holding time exceeded on any of the Metal Fractions

   ICP/GFAA/FAA - Holding time of 6 months VTSR
   Mercury - Holding time of 28 days VTSR
   Cyanide - Holding time of 14 days VTSR

   Yes (No)

2. - If yes, complete the following form for all samples that exceeding holding times.

   Fraction:_____

| Sample ID | Matrix | VTSR | Date of Analysis | DA | QC Decision |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

10/4/01

Note: DA = The number of days holding time to analysis is exceeded.

S = Non-aqueous
A = Aqueous
X = Air

QA Decision: Results > IDL - J - estimated

Results < IDL - R - rejected

HEARTLAND ESI Form C-1

INSTRUMENT CALIBRATION AND INITIAL CALIBRATION VERIFICATION (ICV)

Associated Samples All Samples

1. a. Was the ICP instrument properly standardized? Yes No
If no, explain and list action. NR

b. Was the furnace instrument properly standardized? If no, were the required standards analyzed immediately after the instrument calibration and results within 95-105% recovery? Yes No Yes No
If no, explain and list action. NR

c. Were the instruments for the analyses of Cyanide and Mercury properly standardized? (Yes) No
If no, explain and list action.

2. Was the ICV analyzed immediately after the system(s) were calibrated? (Yes) No
If no, explain and list action.

3. Was the ICV analyzed for every analyte? (Yes) No
If no, explain and list action.

4. Do all ICV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their % recovery, and action for which:

a. % recovery is between 75-89% (CN, 70-84% or HG, 65-79%)

b. % recovery is between 111-125% (CN, 116-130% or HG, 121-135%)_____

c. % recovery is less than 75% or greater than 125%(CN, <70 or >130%, Hg <65 or >135)_____

5. a. Show calculation for the % recovery of one ICV analyte by ICP. Lab value NR

b. Show calculation for the % recovery of one ICV analyte by furnace AA. Lab value NR

c. Show calculation for the ICV % recovery of Mercury. Lab Value 101.2

$\frac{5.06}{5.00} \times 100 = 101.2\%$

d. Show calculation for the ICV % recovery of Cyanide. Lab value NR

6. Specific comments:_____

HEARTLAND ESI Form O-1

CONTINUING CALIBRATION VERIFICATION (CCV)

Associated Samples All Sample

1. a. Was the CCV performed every two hours or at the 10% frequency? (Yes) No
If no, list action.

b. Was the CCV performed at the beginning and end of the sample analysis? (Yes) No
If no, list action.

2. Were the CCV standards analyzed for all analytes? (Yes) No
If no, list affected analytes, their associated samples and action.

3. Was the same concentration used for CCV throughout the analyses? (Yes) No
If no, list affected analytes, their associated samples and action.

4. Do all CCV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their associated samples and action for which:

a. % recovery is between 75-89%(CN,70-84% or Hg, 65-79%)

b. % recovery is between 111-125%(CN,116-130% or Hg, 121-135%)

c. % recovery is less than 75% or greater than 125%(CN,<70 or

HEARTLAND ESI Form D-2

5. a. Show calculation for the % recovery of one CCV analyte analyzed by ICP. Lab value NR

b. Show calculation for the % recovery of one CCV analyte analyzed by furnace AA. Lab value NR

c. Show calculation for the % recovery of one CCV analyte analyzed for Mercury. Lab value 103.24

$\frac{5.16}{5.00} \times 100 = 103.24$

d. Show calculation for the % recovery of one CCV analyte for Cyanide. Lab value NR

6. Specific comments:

HEARTLAND ESI Form F

INITIAL & CONTINUING CALIBRATION BLANK

Associated Samples All Samples

1. Were the initial calibration blanks analyzed for all analytes and run after the initial calibration verification? (Yes) No
If no, list affected analytes, and action.

2. Was the absolute value for all analytes in the initial calibration blank below the CRDL? (Yes) No
If no, list affected analytes and reject them.

3. Were the continuing calibration blanks analyzed for all analytes and run after the continuing calibration verification? (Yes) No
If no, list affected analytes, associated samples and action.

4. Was the frequency for the continuing calibration blanks correct? (Yes) No
If no, list affected analytes, associated samples and action.

5. Was the absolute value of all analytes for the continuing calibration blank below the CRDL? (Yes) No
If no, list affected analytes, associated samples and reject them.

HEARTLAND ESI Form G

## PREPARATION BLANK SUMMARY

Sample Matrix: (Soil) Water Air Preparation Blank ID PBS
Units: (mg/kg) ug/l ug/m3

1. Did the frequency of the preparation blank analysis meet method requirements? (Yes) No
If no, explain and note action: _____

| Analyte | Conc | <CRDL | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | PBW 10/4/01 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Associated Samples: All soil samples

CRDL Codes: Yes < CRDL
No > CRDL

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MR4-E.WALLS

Name: STL Contract: _____

Lab Code: STL Case No.: 1395A SAS No.: _____ SDG No.: A1395

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 92.17

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

| Analyte | Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | 75-125 | 0.0823 | | 0.0357 | | 0.04 | 104.7 | | CV |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |
| | | | | | | | | | |

Comments:

6
DUPLICATES

EPA SAMPLE NO.

MR4-E.WALLD

Name: STL Contract: _____

Lab Code: STL Case No.: 1395A SAS No.: _____ SDG No.: A1395

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 92.17 % Solids for Duplicate: 92.17

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | NR |
| Antimony | | | | | | | | NR |
| Arsenic | | | | | | | | NR |
| Barium | | | | | | | | NR |
| Beryllium | | | | | | | | NR |
| Cadmium | | | | | | | | NR |
| Calcium | | | | | | | | NR |
| Chromium | | | | | | | | NR |
| Cobalt | | | | | | | | NR |
| Copper | | | | | | | | NR |
| Iron | | | | | | | | NR |
| Lead | | | | | | | | NR |
| Magnesium | | | | | | | | NR |
| Manganese | | | | | | | | NR |
| Mercury | | 0.0357 | | 0.0324 | | 9.7 | | CV |
| Nickel | | | | | | | | NR |
| Potassium | | | | | | | | NR |
| Selenium | | | | | | | | NR |
| Silver | | | | | | | | NR |
| Sodium | | | | | | | | NR |
| Thallium | | | | | | | | NR |
| Vanadium | | | | | | | | NR |
| Zinc | | | | | | | | NR |
| Cyanide | | | | | | | | NR |
| | | | | | | | | |

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7

LABORATORY CONTROL SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1395

Solid LCS Source: INORG. VENT.

Aqueous LCS Source: _____

| Analyte | Aqueous (ug/L) True | Found | %R | Solid (mg/kg) True | Found | C | Limits | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | |
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Calcium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Cobalt | | | | | | | | | |
| Copper | | | | | | | | | |
| Iron | | | | | | | | | |
| Lead | | | | | | | | | |
| Magnesium | | | | | | | | | |
| Manganese | | | | | | | | | |
| Mercury | | | | 2.4 | 2.8 | | 1.6 | 3.2 | 116.4 |
| Nickel | | | | | | | | | |
| Potassium | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Sodium | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| Cyanide | | | | | | | | | |
| | | | | | | | | | |

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

# Data Validation Report

| | |
|---|---|
| SDG#: | A1684 |
| Date: | October 17, 2001 |
| Client Name: | Gannett Fleming |
| Project/Site Name: | 425 Merrick Ave |
| Date Sampled: | June 27, 2001 |
| Number of Samples: | 1 Non-Aqueous Sample(s) with 0 MS/MSD(s) |
| Laboratory: | STL |
| Validation Guidance: | National Functional Guidelines for Organic and Inorganic Data |
| QA/QC Level: | NYSDEC ASP Category B |
| Method(s) Utilized: | SW846 Third Edition |
| Analytical Fractions: | Mercury |

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Scafora
Paul B. Humburg, President

10-17-01.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(636) 936-1332 • Fax (636) 936-1335

**SDG# A1684**

## Samples and Fractions Reviewed

Sample Identifications Analytical Fraction

| GANNETT FLEMING ID | MATRIX | Hg | |
|---|---|---|---|
| MR4 S. WALL | SOIL | | X |
| Total Billable Samples (Water/Soil) | | 0 | 1 |

Hg= Mercury

# DATA ASSESSMENT NARRATIVE
# MERCURY

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 methods for Mercury and the Functional Guidelines for Inorganic Data Validation, February 1994 requirements and NYSDEC ASP Category B. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

## SDGs # A1684

A validation was performed on the Metals Data from SDG A1684. The data was evaluated based on the following parameters.

| | | |
|---|---|---|
| * | ● | Data Completeness |
| * | ● | Holding Times |
| * | ● | Calibrations |
| * | ● | Blanks |
| * | ● | Interferences |
| * | ● | Matrix Spike Recovery |
| * | ● | Matrix Duplicates |
| * | ● | Field Duplicates |
| * | ● | Laboratory Control Samples |
| * | ● | Serial Dilutions |

* - All criteria were met for this parameter.

# SUMMARY OF DATA QUALIFICATIONS

| Sample ID | Analyte | DL | QL |
|---|---|---|---|

Data stands as reported without qualification.

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MR4 S.WALL

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1684A SAS No.: _____ SDG No.: A1684

Matrix (soil/water): SOIL Lab Sample ID: 011684A-01

Level (low/med): LOW Date Received: 06/28/01

% Solids: 92.8

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | | | NR |
| 7440-36-0 | Antimony | | | | NR |
| 7440-38-2 | Arsenic | | | | NR |
| 7440-39-3 | Barium | | | | NR |
| 7440-41-7 | Beryllium | | | | NR |
| 7440-43-9 | Cadmium | | | | NR |
| 7440-70-2 | Calcium | | | | NR |
| 7440-47-3 | Chromium | | | | NR |
| 7440-48-4 | Cobalt | | | | NR |
| 7440-50-8 | Copper | | | | NR |
| 7439-89-6 | Iron | | | | NR |
| 7439-92-1 | Lead | | | | NR |
| 7439-95-4 | Magnesium | | | | NR |
| 7439-96-5 | Manganese | | | | NR |
| 7439-97-6 | Mercury | 0.024 | | | CV |
| 7440-02-0 | Nickel | | | | NR |
| 7440-09-7 | Potassium | | | | NR |
| 7782-49-2 | Selenium | | | | NR |
| 7440-22-4 | Silver | | | | NR |
| 7440-23-5 | Sodium | | | | NR |
| 7440-28-0 | Thallium | | | | NR |
| 7440-62-2 | Vanadium | | | | NR |
| 7440-66-6 | Zinc | | | | NR |
| 57-12-5 | Cyanide | | | | NR |
| | | | | | |

PB
10/4/01

Color Before: _____ Clarity Before: OPAQUE Texture: _____

Color After: _____ Clarity After: OPAQUE Artifacts: _____

Comments:

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART I

Site Name: Garrett  Client: GF

Location: A1684  Lab: STL

Analytical Fraction: Mercury only

Reviewer: P. Humby  Date(s): 10/4/21

| | | | |
|---|---|---|---|
| A. | Control Chart - results of the method blank spikes run with each batch of samples processed | : Yes (No) | NR |
| B. | CLP Form 1s with associated sample results and CLP flagging system. All percent moistures for soils and discussion of sample type | : (Yes) No | NR |
| C. | CLP Form 2s with initial and continuing calibration standards (part 1 only) | : (Yes) No | NR |
| D. | CLP Form 3s with prep and method blanks | : (Yes) No | NR |
| E. | CLP Form 4s with Interference check samople data | : (Yes) No | NR |
| F. | CLP Form 5s with Matrix spike recovery and the postdigestion spike recovery for ICP Metals. Only done if predigest spike recovery exceeds limits | : (Yes) No | NR |
| G. | CLP Form 6s with Duplicate data results | : (Yes) No | NR |
| H. | CLP Form 7s with LCS data results | : (Yes) No | NR |
| I. | CLP Form 8s with GFAA standard addition data | : Yes No | (NR) |
| J. | CLP Form 9s with Serial Dilution data results | : (Yes) No | NR |

DATA DELIVERABLES (DQO Level IV or D)
INORGANICS - PART II

| | | | | |
|---|---|---|---|---|
| K. | CLP Form 10s with Instrument Detection Data | : (Yes) | No | NR |
| L. | CLP Forms 11 and 12 with Quarterly Verification of Instrument Parameters | : (Yes) | No | NR |
| M. | CLP Form 13s with Preparation Log data | : (Yes) | No | NR |
| N. | CLP Form 14s with Run Log data | : (Yes) | No | NR |

HEARTLAND ESI Form A

DATA DELIVERABLE REQUIREMENTS

| | | | | |
|---|---|---|---|---|
| A. | Permanently Bound | Yes | (No) | NR |
| B. | Paginated | (Yes) | No | NR |
| C. | Table of Contents | (Yes) | No | NR |
| D. | Digestion Records(internal C-O-C) | (Yes) | No | NR |
| E. | Chain-Of-Custody (external) | (Yes) | No | NR |
| F. | Case Narrative | | | |
| | 1. Sample list with Client and Lab IDs cross-referenced (copy attached) | (Yes) | No | NR |
| | 2. All Protocol deviations and QC problems noted | (Yes) | No | NR |
| | 3. Comments:_____ | | | |
| G. | Uninitialed Strikeovers | Yes | (No) | NR |
| H. | Legible Photocopies | (Yes) | No | NR |
| I. | Consistent Dates | (Yes) | No | NR |
| J. | Preparation Logs | (Yes) | No | NR |
| K. | Instrument Run Logs | (Yes) | No | NR |

L. Other Deviations or Comments:_____

HEARTLAND ESI Form 8

## HOLDING TIMES FOR METALS

1. Was the holding time exceeded on any of the Metal Fractions

ICP/GFAA/FAA - Holding time of 6 months VTSR
Mercury - Holding time of 28 days VTSR
Cyanide - Holding time of 14 days VTSR

Yes (No)

2. - If yes, complete the following form for all samples that exceeding holding times.

Fraction:_____

| Sample ID | Matrix | VTSR | Date of Analysis | DA | QC Decision |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | 10/4/01 | | |
| | | | | | |
| | | | | | |

Note: DA = The number of days holding time to analysis is exceeded.

S = Non-aqueous
A = Aqueous
X = Air

QA Decision: Results > IDL - J - estimated

Results < IDL - R - rejected

HEARTLAND ESI Form C-1

## INSTRUMENT CALIBRATION AND INITIAL CALIBRATION VERIFICATION (ICV)

Associated Samples All Samples

1. a. Was the ICP instrument properly standardized? Yes No
If no, explain and list action. NR

b. Was the furnace instrument properly standardized? If no, were the required standards analyzed immediately after the instrument calibration and results within 95-105% recovery? Yes No Yes No
If no, explain and list action. NR

c. Were the instruments for the analyses of Cyanide and Mercury properly standardized? (Yes) No
If no, explain and list action.

2. Was the ICV analyzed immediately after the system(s) were calibrated? (Yes) No
If no, explain and list action.

3. Was the ICV analyzed for every analyte? (Yes) No
If no, explain and list action.

4. Do all ICV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their % recovery, and action for which:

a. % recovery is between 75-89% (CN, 70-84% or HG, 65-79%)

b. % recovery is between 111-125% (CN. 116-130% or HG. 121-135%)_____

c. % recovery is less than 75% or greater than 125%(CN. <70 or >130%, Hg <65 or >135)_____

5. a. Show calculation for the % recovery of one ICV analyte by ICP. Lab value NR

b. Show calculation for the % recovery of one ICV analyte by furnace AA. Lab value NR

c. Show calculation for the ICV % recovery of Mercury. Lab Value 97.8%

$\frac{4.89}{5.00} \times 100 = 97.8\%$

d. Show calculation for the ICV % recovery of Cyanide. Lab value NR

6. Specific comments:_____

HEARTLAND ESI Form D-1

CONTINUING CALIBRATION VERIFICATION (CCV)

Associated Samples All Sample

1. a. Was the CCV performed every two hours or at the 10% frequency? (Yes) No
If no, list action.

b. Was the CCV performed at the beginning and end of the sample analysis? (Yes) No
If no, list action.

2. Were the CCV standards analyzed for all analytes? (Yes) No
If no, list affected analytes, their associated samples and action.

3. Was the same concentration used for CCV throughout the analyses? (Yes) No
If no, list affected analytes, their associated samples and action.

4. Do all CCV analytes meet the QC requirements for % recovery? (Yes) No
If no, list affected analytes, their associated samples and action for which:

a. % recovery is between 75-89%(CN,70-84% or Hg, 65-79%)

b. % recovery is between 111-125%(CN,116-130% or Hg, 121-135%)

c. % recovery is less than 75% or greater than 125%(CN, <70 or

HEARTLAND ESI Form D-2

5. a. Show calculation for the % recovery of one CCV analyte analyzed by ICP. Lab value NR

b. Show calculation for the % recovery of one CCV analyte analyzed by furnace AA. Lab value NR

c. Show calculation for the % recovery of one CCV analyte analyzed for Mercury. Lab value 97.4 %

$\frac{4.87}{5.00} \times 100 = 97.4\ \%$

d. Show calculation for the % recovery of one CCV analyte for Cyanide. Lab value NR

6. Specific comments: _____

HEARTLAND ESI Form F

INITIAL & CONTINUING CALIBRATION BLANK

Associated Samples All Samples

1. Were the initial calibration blanks analyzed for all analytes and run after the initial calibration verification? (Yes) No
If no, list affected analytes, and action.

2. Was the absolute value for all analytes in the initial calibration blank below the CRDL? (Yes) No
If no, list affected analytes and reject them.

3. Were the continuing calibration blanks analyzed for all analytes and run after the continuing calibration verification? (Yes) No
If no, list affected analytes, associated samples and action.

4. Was the frequency for the continuing calibration blanks correct? (Yes) No
If no, list affected analytes, associated samples and action.

5. Was the absolute value of all analytes for the continuing calibration blank below the CRDL? (Yes) No
If no, list affected analytes, associated samples and reject them.

HEARTLAND ESI Form G

## PREPARATION BLANK SUMMARY

Sample Matrix: (Soil) Water Air Preparation Blank ID PBS
Units: (mg/kg) ug/l ug/m3

1. Did the frequency of the preparation blank analysis meet method requirements? (Yes) No
If no, explain and note action:

| Analyte | Conc | <CRDL | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |

PBS 10/4/01

Associated Samples: All soil samples

CRDL Codes: Yes < CRDL
No > CRDL

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SFC-5-SOILS

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1684A SAS No.: _____ SDG No.: A1684

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 100

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

| Analyte | Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | 75-125 | 0.0562 | | 0.0293 | | 0.03 | 100.0 | | CV |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |
| | | | | | | | | | |

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

SFC-5-SOILD

Lab Name: STL Contract: _____

Lab Code: STL Case No.: 1684A SAS No.: _____ SDG No.: A1684

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 100 % Solids for Duplicate: 100

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | NR |
| Antimony | | | | | | | | NR |
| Arsenic | | | | | | | | NR |
| Barium | | | | | | | | NR |
| Beryllium | | | | | | | | NR |
| Cadmium | | | | | | | | NR |
| Calcium | | | | | | | | NR |
| Chromium | | | | | | | | NR |
| Cobalt | | | | | | | | NR |
| Copper | | | | | | | | NR |
| Iron | | | | | | | | NR |
| Lead | | | | | | | | NR |
| Magnesium | | | | | | | | NR |
| Manganese | | | | | | | | NR |
| Mercury | | 0.0293 | | 0.0296 | | 0.9 | | CV |
| Nickel | | | | | | | | NR |
| Potassium | | | | | | | | NR |
| Selenium | | | | | | | | NR |
| Silver | | | | | | | | NR |
| Sodium | | | | | | | | NR |
| Thallium | | | | | | | | NR |
| Vanadium | | | | | | | | NR |
| Zinc | | | | | | | | NR |
| Cyanide | | | | | | | | NR |
| | | | | | | | | |

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7

LABORATORY CONTROL SAMPLE

Lab Name: STL Contract: _____

Lab Code: STL Case No.: _____ SAS No.: _____ SDG No.: A1684

Solid LCS Source: INORG. VENT.

Aqueous LCS Source: _____

| Analyte | Aqueous (ug/L) True | Found | %R | Solid (mg/kg) True | Found | C | Limits | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | |
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Calcium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Cobalt | | | | | | | | | |
| Copper | | | | | | | | | |
| Iron | | | | | | | | | |
| Lead | | | | | | | | | |
| Magnesium | | | | | | | | | |
| Manganese | | | | | | | | | |
| Mercury | | | | 2.4 | 2.1 | | 1.6 | 3.2 | 84.8 |
| Nickel | | | | | | | | | |
| Potassium | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Sodium | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| Cyanide | | | | | | | | | |
| | | | | | | | | | |