US EPA RECORDS CENTER REGION 5
548416
940499

# SAMPLING DATA

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 3/1/91 FIT Receipt Date 3/12/91 Review Completed 3/28/91

TO: B. Slaughter
FROM: C. Kouris
SUBJECT: Central Iron & Metal
PAN: MI0358SB (1 hour charged for review) Case # 15811

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # | Low Soil | # | Low Soil |
| | Low Water | 7 | Low Water |
| | Drinking Water | | Drinking Water |
| | Other | | Other |

Project Data Status _____ Completed!!

X Incomplete, awaiting org low water

FIT Data Review Findings:

***Check Data Sheets for Transcription Errors***

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 9 Page No. _____ Date Sampled 1/29/91

0759:2

recycled paper

U.S. EPA - CLP

# COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

SOW No.: 7/88

| EPA Sample No. | Lab Sample ID. |
|---|---|
| MEMM04 | |
| MEMM05 | |
| MEMM05D | |
| MEMM05S | |
| MEMM06 | |
| MEMM07 | |
| MEMM08 | |
| MEMM09 | |
| MEMM09S | |
| MEMM11 | |

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:

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

Signature: Vivian Fuchise Name: Vivian Fuchise

Date: 2/26/91 Title: EPA/CLP Project Chemist

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMM04

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/30/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 44.6 | B | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.0 | U | | P |
| 7440-70-2 | Calcium | 82100 | | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 2.7 | B | | P |
| 7439-89-6 | Iron | 28.8 | B | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 24600 | | | P |
| 7439-96-5 | Manganese | 17.1 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 1730 | B | | P |
| 7782-49-2 | Selenium | 3.1 | B | | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 31200 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.0 | U | | P |
| 7440-66-6 | Zinc | 9.9 | B | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMM05

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/30/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 43.3 | B | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.0 | U | | P |
| 7440-70-2 | Calcium | 78000 | | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 2.3 | B | | P |
| 7439-89-6 | Iron | 39.8 | B | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 23300 | | | P |
| 7439-96-5 | Manganese | 14.6 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 1570 | B | | P |
| 7782-49-2 | Selenium | 2.0 | U | W | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 30400 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.0 | U | | P |
| 7440-66-6 | Zinc | 6.8 | B | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMM06

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/30/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 78.5 | B | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.0 | U | | P |
| 7440-70-2 | Calcium | 106000 | | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 4.7 | B | | P |
| 7439-89-6 | Iron | 229 | | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 37400 | | | P |
| 7439-96-5 | Manganese | 61.5 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 1050 | B | | P |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 51900 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.0 | U | | P |
| 7440-66-6 | Zinc | 12.5 | B | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMM07

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/30/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 127 | B | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.2 | B | | P |
| 7440-70-2 | Calcium | 132000 | | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 2.3 | B | | P |
| 7439-89-6 | Iron | 40.1 | B | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 39700 | | | P |
| 7439-96-5 | Manganese | 278 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 2080 | B | | P |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 100000 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.0 | U | | P |
| 7440-66-6 | Zinc | 4.7 | B | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMM08

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/30/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.2 | B | | F |
| 7440-39-3 | Barium | 101 | B | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.0 | U | | P |
| 7440-70-2 | Calcium | 118000 | | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 3.7 | B | | P |
| 7439-89-6 | Iron | 592 | | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 36700 | | | P |
| 7439-96-5 | Manganese | 150 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 2880 | B | | P |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 52200 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.0 | U | | P |
| 7440-66-6 | Zinc | 8.3 | B | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMM09

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/01/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 69.0 | B | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.0 | U | | P |
| 7440-70-2 | Calcium | 100000 | | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 3.5 | B | | P |
| 7439-89-6 | Iron | 6880 | | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 25300 | | | P |
| 7439-96-5 | Manganese | 69.0 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 1940 | B | | P |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 64300 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.1 | B | | P |
| 7440-66-6 | Zinc | 45.0 | | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEMM11

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 01/30/91

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.0 | U | | P |
| 7440-36-0 | Antimony | 30.0 | U | | P |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 1.0 | U | | P |
| 7440-41-7 | Beryllium | 1.0 | U | | P |
| 7440-43-9 | Cadmium | 3.0 | U | | P |
| 7440-70-2 | Calcium | 81.2 | B | | P |
| 7440-47-3 | Chromium | 3.0 | U | | P |
| 7440-48-4 | Cobalt | 4.0 | U | | P |
| 7440-50-8 | Copper | 11.6 | B | | P |
| 7439-89-6 | Iron | 3.0 | U | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 60.0 | U | | P |
| 7439-96-5 | Manganese | 1.2 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.0 | U | | P |
| 7440-09-7 | Potassium | 800 | U | | P |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 4.0 | U | | P |
| 7440-23-5 | Sodium | 92.9 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 2.0 | U | | P |
| 7440-66-6 | Zinc | 1.0 | U | | P |
| | Cyanide | 10.0 | U | | C |
| | | | | | |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

3
BLANKS

Lab name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | 47.700 | B | P |
| Antimony | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | 30.000 | U | P |
| Arsenic | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | F |
| Barium | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | P |
| Beryllium | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | P |
| Cadmium | 3.0 | U | 3.0 | U | 3.0 | U | 3.0 | U | 3.000 | U | P |
| Calcium | 10.0 | U | 10.0 | U | 10.0 | B | 10.0 | U | 51.300 | B | P |
| Chromium | 3.0 | U | 3.0 | U | 3.0 | U | 3.0 | U | 3.000 | U | P |
| Cobalt | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | 4.000 | U | P |
| Copper | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.000 | U | P |
| Iron | -10.4 | B | -17.0 | B | 96.9 | B | 94.4 | B | -17.600 | B | P |
| Lead | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | F |
| Magnesium | 60.0 | U | 60.0 | U | 60.0 | U | 60.0 | U | 60.000 | U | P |
| Manganese | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | P |
| Mercury | .2 | U | .2 | U | .2 | U | .2 | U | .200 | U | CV |
| Nickel | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | 10.000 | U | P |
| Potassium | 800.0 | U | 800.0 | U | 800.0 | U | 800.0 | U | 800.000 | U | P |
| Selenium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.000 | U | F |
| Silver | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | 4.000 | U | P |
| Sodium | 30.0 | U | 30.0 | U | 30.4 | B | 30.0 | U | 30.000 | U | P |
| Thallium | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | F |
| Vanadium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.000 | U | P |
| Zinc | 1.0 | U | -1.0 | B | -1.6 | B | -2.1 | B | 1.600 | B | P |
| Cyanide | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | 10.000 | U | C |

FORM III - IN

U.S. EPA - CLP

3
BLANKS

Lab name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | | | |
| Antimony | | | | | | | | | | | |
| Arsenic | | | 1.0 | U | | | | | | | F |
| Barium | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | |
| Calcium | | | | | | | | | | | |
| Chromium | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | |
| Copper | | | | | | | | | | | |
| Iron | | | | | | | | | | | |
| Lead | | | 1.0 | U | | | | | | | F |
| Magnesium | | | | | | | | | | | |
| Manganese | | | | | | | | | | | |
| Mercury | | | .2 | U | | | | | | | CV |
| Nickel | | | | | | | | | | | |
| Potassium | | | | | | | | | | | |
| Selenium | | | 2.0 | U | | | | | | | F |
| Silver | | | | | | | | | | | |
| Sodium | | | | | | | | | | | |
| Thallium | | | 1.1 | B | | | | | | | F |
| Vanadium | | | | | | | | | | | |
| Zinc | | | | | | | | | | | |
| Cyanide | | | | | | | | | | | |

FORM III - IN

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEMM05S

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 75-125 | 1836.5000 | | 30.0000 | U | 2000.00 | 91.8 | | P |
| Antimony | 75-125 | 454.1000 | | 30.0000 | U | 500.00 | 90.8 | | P |
| Arsenic | 75-125 | 38.1000 | | 1.0000 | U | 40.00 | 95.2 | | F |
| Barium | 75-125 | 1880.4600 | | 43.3000 | B | 2000.00 | 91.9 | | P |
| Beryllium | 75-125 | 45.2500 | | 1.0000 | U | 50.00 | 90.5 | | P |
| Cadmium | 75-125 | 44.1700 | | 3.0000 | U | 50.00 | 88.3 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 183.4900 | | 3.0000 | U | 200.00 | 91.7 | | P |
| Cobalt | 75-125 | 449.1400 | | 4.0000 | U | 500.00 | 89.8 | | P |
| Copper | 75-125 | 221.6400 | | 2.3300 | B | 250.00 | 87.7 | | P |
| Iron | 75-125 | 1042.0800 | | 39.8200 | B | 1000.00 | 100.2 | | P |
| Lead | 75-125 | 20.2000 | | 1.0000 | U | 20.00 | 101.0 | | F |
| Magnesium | | | | | | | | | NR |
| Manganese | 75-125 | 468.6600 | | 14.6300 | B | 500.00 | 90.8 | | P |
| Mercury | 75-125 | 1.0700 | | .2000 | U | 1.00 | 107.0 | | CV |
| Nickel | 75-125 | 449.5300 | | 10.0000 | U | 500.00 | 89.9 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 10.7000 | | 2.0000 | U | 10.00 | 107.0 | | F |
| Silver | 75-125 | 44.6900 | | 4.0000 | U | 50.00 | 89.4 | | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 47.9000 | | 1.0000 | U | 50.00 | 95.8 | | F |
| Vanadium | 75-125 | 472.3500 | | 2.0000 | U | 500.00 | 94.5 | | P |
| Zinc | 75-125 | 457.8900 | | 6.7600 | B | 500.00 | 90.2 | | P |
| Cyanide | | | | | | | | | NR |

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEMM09S

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

| Analyte | Control 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 | | | | | | | | | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | 75-125 | 89.5000 | | 10.0000 | U | 100.00 | 89.5 | | C |

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

6
DUPLICATES

MEMM05D

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

Matrix (water/soil): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | %RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 30.0000 | U | 30.0000 | U | | | P |
| Antimony | | 30.0000 | U | 30.0000 | U | | | P |
| Arsenic | | 1.0000 | U | 1.0000 | U | | | F |
| Barium | | 43.3000 | B | 41.4900 | B | 4.3 | | P |
| Beryllium | | 1.0000 | U | 1.0000 | U | | | P |
| Cadmium | | 3.0000 | U | 3.0000 | U | | | P |
| Calcium | | 78022.0000 | | 76547.8000 | | 1.9 | | P |
| Chromium | | 3.0000 | U | 3.0000 | U | | | P |
| Cobalt | | 4.0000 | U | 4.0000 | U | | | P |
| Copper | | 2.3300 | B | 2.3300 | B | 0.0 | | P |
| Iron | | 39.8200 | B | 35.9400 | B | 10.2 | | P |
| Lead | | 1.0000 | U | 1.0000 | U | | | F |
| Magnesium | 5000.0 | 23296.6700 | | 22808.7900 | | 2.1 | | P |
| Manganese | | 14.6300 | B | 14.3800 | B | 1.7 | | P |
| Mercury | | .2000 | U | .2000 | U | | | CV |
| Nickel | | 10.0000 | U | 10.0000 | U | | | P |
| Potassium | | 1566.1100 | B | 1598.5500 | B | 2.1 | | P |
| Selenium | | 2.0000 | U | 2.0000 | U | | | F |
| Silver | | 4.0000 | U | 4.0000 | U | | | P |
| Sodium | | 30431.5500 | | 29767.2300 | | 2.2 | | P |
| Thallium | | 1.0000 | U | 1.0000 | U | | | F |
| Vanadium | | 2.0000 | U | 2.0000 | U | | | P |
| Zinc | | 6.7600 | B | 6.2400 | B | 8.0 | | P |
| Cyanide | | 10.0000 | U | 10.0000 | U | | | C |

FORM VI - IN

7/88

U.S. EPA - CLP

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

ICP ID Number: TJA-1 Date: 1/15/91

Flame AA ID Number:

Furnace AA ID Number:

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | 308.20 | | 200 | 30.0 | P |
| Antimony | 206.80 | | 60 | 30.0 | P |
| Arsenic | | | 10 | | |
| Barium | 493.40 | | 200 | 1.0 | P |
| Beryllium | 313.00 | | 5 | 1.0 | P |
| Cadmium | 288.80 | | 5 | 3.0 | P |
| Calcium | 317.90 | | 5000 | 10.0 | P |
| Chromium | 267.70 | | 10 | 3.0 | P |
| Cobalt | 228.60 | | 50 | 4.0 | P |
| Copper | 324.70 | | 25 | 2.0 | P |
| Iron | 259.90 | | 100 | 3.0 | P |
| Lead | | | 3 | | |
| Magnesium | 383.20 | | 5000 | 60.0 | P |
| Manganese | 257.60 | | 15 | 1.0 | P |
| Mercury | | | 0.2 | | |
| Nickel | 231.60 | | 40 | 10.0 | P |
| Potassium | 766.50 | | 5000 | 800.0 | P |
| Selenium | | | 5 | | |
| Silver | 328.00 | | 10 | 4.0 | P |
| Sodium | 588.90 | | 5000 | 30.0 | P |
| Thallium | | | 10 | | |
| Vanadium | 292.40 | | 50 | 2.0 | P |
| Zinc | 213.80 | | 20 | 1.0 | P |

Comments:

FORM X - IN

7/88

U.S. EPA - CLP

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

ICP ID Number: Date: 1/15/91

Flame AA ID Number:

Furnace AA ID Number: VARIAN-5

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | | | 200 | | |
| Antimony | | | 60 | | |
| Arsenic | 193.70 | BZ | 10 | 1.0 | F |
| Barium | | | 200 | | |
| Beryllium | | | 5 | | |
| Cadmium | | | 5 | | |
| Calcium | | | 5000 | | |
| Chromium | | | 10 | | |
| Cobalt | | | 50 | | |
| Copper | | | 25 | | |
| Iron | | | 100 | | |
| Lead | | | 3 | | |
| Magnesium | | | 5000 | | |
| Manganese | | | 15 | | |
| Mercury | | | 0.2 | | |
| Nickel | | | 40 | | |
| Potassium | | | 5000 | | |
| Selenium | | | 5 | | |
| Silver | | | 10 | | |
| Sodium | | | 5000 | | |
| Thallium | 276.80 | BZ | 10 | 1.0 | F |
| Vanadium | | | 50 | | |
| Zinc | | | 20 | | |

Comments:

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10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

ICP ID Number: Date: 1/15/91

Flame AA ID Number:

Furnace AA ID Number: VARIAN-2

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | | | 200 | | |
| Antimony | | | 60 | | |
| Arsenic | | | 10 | | |
| Barium | | | 200 | | |
| Beryllium | | | 5 | | |
| Cadmium | | | 5 | | |
| Calcium | | | 5000 | | |
| Chromium | | | 10 | | |
| Cobalt | | | 50 | | |
| Copper | | | 25 | | |
| Iron | | | 100 | | |
| Lead | 283.30 | BZ | 3 | 1.0 | F |
| Magnesium | | | 5000 | | |
| Manganese | | | 15 | | |
| Mercury | | | 0.2 | | |
| Nickel | | | 40 | | |
| Potassium | | | 5000 | | |
| Selenium | | | 5 | | |
| Silver | | | 10 | | |
| Sodium | | | 5000 | | |
| Thallium | | | 10 | | |
| Vanadium | | | 50 | | |
| Zinc | | | 20 | | |

Comments:

U.S. EPA - CLP

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

ICP ID Number: Date: 1/15/91

Flame AA ID Number:

Furnace AA ID Number: VARIAN-4

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | | | 200 | | |
| Antimony | | | 60 | | |
| Arsenic | | | 10 | | |
| Barium | | | 200 | | |
| Beryllium | | | 5 | | |
| Cadmium | | | 5 | | |
| Calcium | | | 5000 | | |
| Chromium | | | 10 | | |
| Cobalt | | | 50 | | |
| Copper | | | 25 | | |
| Iron | | | 100 | | |
| Lead | | | 3 | | |
| Magnesium | | | 5000 | | |
| Manganese | | | 15 | | |
| Mercury | | | 0.2 | | |
| Nickel | | | 40 | | |
| Potassium | | | 5000 | | |
| Selenium | 196.00 | BZ | 5 | 2.0 | F |
| Silver | | | 10 | | |
| Sodium | | | 5000 | | |
| Thallium | | | 10 | | |
| Vanadium | | | 50 | | |
| Zinc | | | 20 | | |

Comments:

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10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 15811 SAS No.: SDG No.: MEMM04

ICP ID Number: Date: 1/15/91

Flame AA ID Number: VARIAN-3

Furnace AA ID Number:

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | | | 200 | | |
| Antimony | | | 60 | | |
| Arsenic | | | 10 | | |
| Barium | | | 200 | | |
| Beryllium | | | 5 | | |
| Cadmium | | | 5 | | |
| Calcium | | | 5000 | | |
| Chromium | | | 10 | | |
| Cobalt | | | 50 | | |
| Copper | | | 25 | | |
| Iron | | | 100 | | |
| Lead | | | 3 | | |
| Magnesium | | | 5000 | | |
| Manganese | | | 15 | | |
| Mercury | 253.70 | BD | 0.2 | .2 | CV |
| Nickel | | | 40 | | |
| Potassium | | | 5000 | | |
| Selenium | | | 5 | | |
| Silver | | | 10 | | |
| Sodium | | | 5000 | | |
| Thallium | | | 10 | | |
| Vanadium | | | 50 | | |
| Zinc | | | 20 | | |

Comments:

FORM X - IN

7/88

05027

15811

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 2/20/91 FIT Receipt Date 4/11/91 Review Completed 4/17/91

TO: B. Slaughter
FROM: M. Yang
SUBJECT: Central Iron + Metal
PAN: FMI0358SB (1 hour charged for review) Case # 15811

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # | Low Soil | # | Low Soil |
| 7 | Low Water | | Low Water |
| | Drinking Water | | Drinking Water |
| | Other | | Other |

Project Data Status X Completed!!

Incomplete, awaiting

FIT Data Review Findings:

***Check Data Sheets for Transcription Errors***

X Compounds were detected in sample(s); see enclosed sheet.

Book No. 9 Page No. Date Sampled 1/29/91

0759:2

recycled paper

T.L.: [illegible]
CRL: Y (N)

# CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
## ORGANICS/INORGANICS

PAN: FMI0358SB

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

FEB 08 1991

CASE NUMBER/SAS No. 15811/NA SITE NAME Central Iron & Metal LABORATORY Hazlet/Columb DATE SHIPPED 1/29/9

SUPERFUND DU NUMBER TFA-102 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER MID016724114 PAGE 1 OF

ACTIVITY NUMBER ZZ

| CRL LOG NUMBER | ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No. | INORGANIC TRAFFIC REPORT NUMBER | WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17524 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17544 | WATER POLYCHLORINATED BIPHENYLS UG/L PES17144 | WATER CHLORINATED PESTICIDES UG/L PES17134 | TOTAL METALS IN WATER UG/L MET111 | WATER CYANIDE UG/L MIN74919 | NITRATE/NITRITE MG/L MIN7294 | AMMONIA MG/L MIN7294 | RESIDUE, FILTERABLE TDS MG/L MIN7362 | RESIDUE, NON-FILT TSS MG/L MIN7372 | | | SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215422 | SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422 | SEDIMENT CHLORINATED PESTICIDES MG/KG 211322 | TOTAL METALS MG/KG MET413 | CYANIDE MG/KG MIN44930 | EP TOXICITY METALS MG/KG | AMMONIA MG/KG MIN47925 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91FS37S33 | ENA 18 | MEMM 04 | X | X | X | X | X | X | | | | | | | | | | | | | | | | | |
| 34 | 20 | 06 | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 21 | 07 | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 22 | 08 | | | | | | | | | | | | | | | | | | | | | | | |
| D33 | 19 | 05 | | | | | | | | | | | | | | | | | | | | | | | |
| 91FS04R38 | 25 | 11 | | | | | | | | | | | | | | | | | | | | | | | |

CLP due date: 3/26/91
CRL due date: NA

T.L: D. Slaughter
CRL: Y (N)

# CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
## ORGANICS/INORGANICS
THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

TOP: F05-1001 [illegible]
PAN: FMI0358SB

FEB 08 1991

CASE NUMBER/SAS No. 15811/NA SITE NAME Central Iron & Metal LABORATORY HAZLET/Columb DATE SHIPPED 1/30/9[illegible]

SUPERFUND DU NUMBER TFA-102 EPA RPM or OSC (S.M.S.) (CES) _____ CERCLIS NUMBER MID016724114 PAGE 2 OF

ACTIVITY NUMBER ZZ

| CRL LOG NUMBER | ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No. | INORGANIC TRAFFIC REPORT NUMBER | WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17524 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17544 | WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144 | WATER CHLORINATED PESTICIDES UG/L PES17134 | TOTAL METALS IN WATER UG/L MET1111 | WATER CYANIDE UG/L MIN74919 | NITRATE/NITRITE MG/L MIN7294 | AMMONIA MG/L MIN7294 | RESIDUE, FILTERABLE TDS MG/L MIN7362 | RESIDUE, NON-FILT TSS MG/L MIN7372 | | | SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215422 | SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422 | SEDIMENT CHLORINATED PESTICIDES MG/KG 211322 | TOTAL METALS MG/KG MET413 | CYANIDE MG/KG MIN44930 | EP TOXICITY METALS MG/KG | AMMONIA MG/KG MIN42925 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91FS37537 | ENA23 | MEMM09 | X | X | X | X | X | X | | | | | | | | | | | | | | | | | |

CLP due date: 3/27/91
CRL due date: N/A

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Organic Traffic Report
(For CLP Use Only)

Case Number: 158111
SAS No. (if applicable): ~~NA~~ 6001-HQ

1. Sample Description (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Rinsate
   5. Soil/Sediment
   6. Oil (SAS) [redacted]
   7. Waste (SAS)
   8. Other (SAS) (Specify)

2. Region Number: 5
Sampling Co.: FIT
Sampler (Name): Schultz

3. Ship To: Lilleston Labs [illegible] Science Drive [illegible] Madison, WI 53711 [illegible]

4. Date Shipped: 1/29/91
Airbill Number: 9157617505
Carrier: F

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Date Received: 1-30-91
Received by: Lynn Kohler
Laboratory Contract Number: 6001-HQ
Unit Price: 639.00
6. Transfer to:
Date Received:
Received by:
Contract Number:
Price:

| CLP Sample Number (From labels) | (A) Sample Description (From box 1) | (B) Concentration L=low M=med H=high | (C) RAS Analysis VOA | BNA | Pest/PCB | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding CLP Inorganic Sample Number | (H) Sample Condition on Receipt | (I) High Conc. Phases (Check below) Solid | Water—MIS Liq. | Non Water—MIS Liq. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENA18 | 2 | L | X | X | X | | MW1 | 1/29/91 1040 | MEMM04 | Samples rec'd | | | |
| ENA19 | 2 | L | X | X | X | | DUP | 1/29/91 1040 | MEMM05 | cool; intact; under | | | |
| ENA20 | 2 | L | X | X | X | MSD | MW2 | 1/29/91 1250 | MEMM06 | custody and in | | | |
| ENA25 | 4 | L | X | X | X | BLANK | BLK | 1/29/91 1006 | MEMM11 | good condition. | | | |
| ENA21 | 2 | L | X | X | X | | MW3 | 1/29/91 1400 | MEMM07 | | | | |
| ENA22 | 2 | L | X | X | X | | MW4 | 1/29/91 1445 | MEMM08 | | | | |

SDG # is ENA18

last sample in SDG is ~~ENA25~~ ENA23 (1)

Shipment is not complete (1) Entry Error aja 1/31/91

EPA Form 9110-2 (8-88) Replaces EPA Form 2075-7, which may be used. Blue - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Organic Traffic Report
(For CLP Use Only)

Case Number: 15811
SAS No. (if applicable): ~~NA~~ SAS 6001-HQ

1. Sample Description (Enter in Column A): X
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS) [redacted]
7. Waste (SAS)
8. Other (SAS) (Specify) [redacted]

2. Region Number: V
Sampling Co.: KITS
Sampler (Name): C. Schultz
3. Ship To: Hazelton Labs, 515 Science Dr, UW Research Park, Madison, WI 53711, Attn: Dave Hills

4. Date Shipped: 1/30/91
Airbill Number: 9157 [illegible]
Carrier: F

Triple volume required for matrix spike/duplicate aqueous sample.
Ship medium and high concentration samples in paint cans.
See reverse for additional instructions.

5. Date Received: 1/31-91
Received by: Lynn Kidder
Laboratory Contract Number: 6001-HQ
Unit Price: 639.00
6. Transfer to:
Date Received:
Received by:
Contract Number:
Sales:

| CLP Sample Number (From labels) | (A) Sample Description (From box 1) | (B) Concentration L=low M=med H=high | (C) RAS Analysis VOA | BNA | Pest/PCB | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding CLP Inorganic Sample Number | (H) Sample Condition on Receipt | (I) High Conc. Phases (Check below) Soil | Water-MIS Liq. | Non Water-MIS Liq. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENA 23 | 2 | L | X | X | X | | mw5 | 1/30/91 1:10 | MEMM09 | Sample rec'd | | | |
| ~~ENA 24~~ | ~~2~~ | ~~L~~ | ~~X~~ | ~~X~~ | ~~X~~ | ~~OID~~ | ~~mw6~~ | ~~1/30/91 1:15~~ | ~~MEMM10~~ | cool; intact; | | | |
| | | | | | | | | | | under custody | | | |
| | | | | | | | | | | and in good | | | |
| | | | | | | | | | | condition. | | | |
| | | | | | | | | | | SDG # is ENA 18 | | | |
| | | | | | | | | | | Last SDG # is | | | |
| | | | | | | | | | | ~~ENA 25~~ ① ENA 23 | | | |

Shipment is Complete

① Entry Error
ala 1/31/91

EPA Form 9110-2 (8-88) Replaces EPA Form 2075-7, which may be used. Blue - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

# DATA REPORTING QUALIFIERS

For reporting results to EPA, the following result qualifiers are used. Additional flags or footnote explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24% moisture and a 1 to 10 dilution factor, the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330\ U)}{D} \times df \qquad \text{where } D = \frac{100 - \%\ \text{moisture}}{100}$$

and df = dilution factor

$$\text{at 24\% moisture, } D = \frac{100-24}{100} = 0.76$$

$$\frac{(330\ U)}{.76} \times 10 = 4300\ U$$ rounded to the appropriate number of significant figures

For soil sample subjected to GPC clean-up procedures, the CRQL is also multiplied by 2, to account for the fact that only half of the extract is recovered.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration is 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1 to 10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, report the concentration as 300J on Form I.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides $\geq$10 ng/ul in the final extract shall be confirmed by GC/MS.

2



B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample and all concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that TIC is a suspected aldol-condensation product.

X - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the Sample Data Summary Package and the Case Narrative. If more than one is required, use "Y" and "Z", as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

SAS 6001HQ Case 15E
6 pages

HAZLETON
WISCONSIN
3301 KINSMAN BOULEVARD
POST OFFICE BOX 7545
MADISON, WISCONSIN 53707

a CORNING Laboratory Services Company

February 18, 1991

RECEIVED
FEB 21 1991
US EPA CENTRAL REGIONAL LAB.
536 S. CLARK ST.
CHICAGO, ILLINOIS 60605

Sample Management Office
Viar and Company
209 Madison Street
Suite 200
Alexandria, VA 22314

CASE NARRATIVE for SAS 6001-HQ, Case 15811 SDG# ENA18.

Enclosed is the data package for SAS 6001-HQ, Case 15811, SDG# ENA18. Seven water samples under this case and SDG number were received for full organic analysis on January 30 and 31, 1991 from Region V. The samples were analyzed and reported according to the protocols provided under our Contract No. 6001-HQ.

The following list itemizes the SMO numbers associated with this case and SDG:

Case 15811 (SDG# ENA18) Sample Listing

| | |
|---|---|
| ENA18 | ENA19 |
| ENA20 | ENA21 |
| ENA22 | ENA23 |
| ENA25 | |

Please note the following summary comments relating to the analytical results and contractual quality control in this case:

- Holding Times. All holding times were within CLP criteria.

- GC-MS Tuning. All tuning requirements for BFB and DFTPP were within contract criteria.

- Instrumental Calibrations. All instrumental calibrations were within contract criteria.

  Please note the additional comment concerning the instrumental calibrations performed for this case.

  Volatile fraction: The concentrations of cis-and trans-1,3-dichloropropenes in the

calibration runs are different than those specified by the contract. The difference is due to the ampule mixes supplied by Supelco, our supplier for the purgeable standards mix.

The actual concentrations of cis- and trans-1,3-dichloropropenes in the standards are as follows:

| Standard | Actual cis- | Actual trans- |
|---|---|---|
| 20 ppb | 32 ppb | 8 ppb |
| 50 | 80 | 20 |
| 100 | 160 | 40 |
| 150 | 240 | 60 |
| 200 | 320 | 80 |

The actual concentrations are used to calculate the response factors for cis- and trans-1,3-dichloropropene.

- Method Blanks. The method blanks extracted and analyzed with this case were within contract criteria.

- Surrogate Recoveries. All calculated surrogate recoveries were within contract criteria.

- Matrix Spike/Matrix Spike Duplicate. All matrix spike (MS) and matrix spike duplicate (MSD) recoveries were within contract criteria with the following exceptions:

  Semivolatile fraction: For MS/MSD ENA20, the relative percent difference (%RPD) was greater than the QC limit for 4-nitrophenol.

- Internal Standard Responses. All internal standards (IS) were within the QC limits.

If you have any questions regarding this case or need any further clarifications, please feel free to call.

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

Amy L. Austin

Amy L. Austin
Data Validation Officer

2/18/91
Date

David C. Hills

David C. Hills
Manager
Environmental Services

2-18-91
Date

cc: EMSL-LV
Region V
Central File
Case File

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

| | EPA SAMPLE NO. | S1 (TOL)# | S2 (BFB)# | S3 (DCE)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | ENA18 | 93 | 99 | 102 | 0 | 0 |
| 02 | ENA19 | 92 | 89 | 98 | 0 | 0 |
| 03 | ENA20 | 97 | 99 | 89 | 0 | 0 |
| 04 | ENA21 | 96 | 98 | 91 | 0 | 0 |
| 05 | ENA22 | 96 | 97 | 92 | 0 | 0 |
| 06 | ENA23 | 96 | 100 | 91 | 0 | 0 |
| 07 | ENA25 | 96 | 99 | 93 | 0 | 0 |
| 08 | ZZZZZ | 100 | 100 | 92 | 0 | 0 |
| 09 | ENA20MS | 98 | 100 | 93 | 0 | 0 |
| 10 | ENA20MSD | 99 | 101 | 93 | 0 | 0 |
| 11 | VBLK51 | 99 | 102 | 101 | 0 | 0 |
| 12 | VBLK53 | 97 | 98 | 91 | 0 | 0 |

| | QC LIMITS |
|---|---|
| S1 (TOL) = Toluene-d8 | ( 88-110) |
| S2 (BFB) = Bromofluorobenzene | ( 86-115) |
| S3 (DCE) = 1,2-Dichloroethane-d4 | ( 76-114) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | ENA18 | 73 | 76 | 101 | 31 | 54 | 76 | | 0 |
| 02 | ENA19 | 58 | 59 | 107 | 30 | 48 | 68 | | 0 |
| 03 | ENA20 | 78 | 84 | 112 | 25 | 36 | 55 | | 0 |
| 04 | ENA21 | 79 | 81 | 112 | 12 | 21 | 53 | | 0 |
| 05 | ENA22 | 74 | 75 | 107 | 30 | 51 | 80 | | 0 |
| 06 | ENA23 | 87 | 76 | 118 | 32 | 52 | 65 | | 0 |
| 07 | ENA25 | 49 | 55 | 108 | 34 | 60 | 67 | | 0 |
| 08 | ENA20MS | 70 | 74 | 105 | 35 | 50 | 61 | | 0 |
| 09 | ENA20MSD | 74 | 78 | 101 | 36 | 53 | 81 | | 0 |
| 10 | SBLK29 | 81 | 80 | 107 | 32 | 53 | 49 | | 0 |
| 11 | SBLK32 | 88 | 72 | 117 | 41 | 64 | 69 | | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | ( 35-114) |
| S2 (FBP) | = 2-Fluorobiphenyl | ( 43-116) |
| S3 (TPH) | = Terphenyl | ( 33-141) |
| S4 (PHL) | = Phenol-d5 | ( 10-94 ) |
| S5 (2FP) | = 2-Fluorophenol | ( 21-100) |
| S6 (TBP) | = 2,4,6-Tribromophenol | ( 10-123) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out



FORM II SV-1 1/87 Rev.

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

| | EPA SAMPLE NO. | S1 (DBC)# | OTHER |
|---|---|---|---|
| 01 | ENA18 | 58 | 0 |
| 02 | ENA19 | 54 | 0 |
| 03 | ENA20 | 51 | 0 |
| 04 | ENA21 | 44 | 0 |
| 05 | ENA22 | 61 | 0 |
| 06 | ENA23 | 59 | 0 |
| 07 | ENA25 | 59 | 0 |
| 08 | ENA20MS | 53 | 0 |
| 09 | ENA20MSD | 55 | 0 |
| 10 | PBLK-1 | 69 | 0 |

ADVISORY QC LIMITS

S1 (DBC) = Dibutlychlorendate ( 24-154)

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out



FORM II PEST-1 1/87 Rev.

3A

# WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix Spike - EPA Sample No.: ENA20

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 50.0 | 0 | 48.5 | 97 | 61-145 |
| Trichloroethene | 50.0 | 0 | 48.4 | 97 | 71-120 |
| Benzene | 50.0 | 0 | 50.4 | 101 | 76-127 |
| Toluene | 50.0 | 0 | 51.7 | 103 | 76-125 |
| Chlorobenzene | 50.0 | 0 | 53.8 | 108 | 75-130 |

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 50.0 | 49.0 | 98 | -1 | 14 | 61-145 |
| Trichloroethene | 50.0 | 47.9 | 96 | 1 | 14 | 71-120 |
| Benzene | 50.0 | 49.9 | 100 | 1 | 11 | 76-127 |
| Toluene | 50.0 | 50.9 | 102 | 1 | 13 | 76-125 |
| Chlorobenzene | 50.0 | 53.3 | 107 | 1 | 13 | 75-130 |

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: 5.0ML 10104767, ENA20 + 250NG IS,SS
CASE 15811-ENA18, INC50A

3C

# WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix Spike - EPA Sample No.: ENA20

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 200 | 0 | 60.6 | 30 | 12- 86 |
| 2-Chlorophenol | 200 | 0 | 130 | 65 | 27-123 |
| 1,4-Dichlorobenzene | 100 | 0 | 48.6 | 49 | 36 97 |
| N-Nitroso-di-n-prop. (1) | 100 | 0 | 58.6 | 59 | 41 116 |
| 1,2,4-Trichlorobenzene | 100 | 0 | 59.0 | 59 | 39 98 |
| 4-Chloro-3-methylphenol | 200 | 0 | 129 | 65 | 23 97 |
| Acenaphthene | 100 | 0 | 67.0 | 67 | 46-118 |
| 4-Nitrophenol | 200 | 0 | 31.8 | 16 | 10- 80 |
| 2,4-Dinitrotoluene | 100 | 0 | 36.6 | 37 | 24- 96 |
| Pentachlorophenol | 200 | 0 | 105 | 53 | 9-103 |
| Pyrene | 100 | 0 | 100 | 100 | 26-127 |

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 200 | 63.6 | 32 | -6 | 42 | 12- 86 |
| 2-Chlorophenol | 200 | 140 | 70 | -7 | 40 | 27-123 |
| 1,4-Dichlorobenzene | 100 | 51.0 | 51 | -4 | 28 | 36 97 |
| N-Nitroso-di-n-prop. (1) | 100 | 61.8 | 62 | -5 | 38 | 41 116 |
| 1,2,4-Trichlorobenzene | 100 | 62.2 | 62 | -5 | 28 | 39 98 |
| 4-Chloro-3-methylphenol | 200 | 138 | 69 | -6 | 42 | 23 97 |
| Acenaphthene | 100 | 70.0 | 70 | -4 | 31 | 46-118 |
| 4-Nitrophenol | 200 | 59.8 | 30 | -61 * | 50 | 10- 80 |
| 2,4-Dinitrotoluene | 100 | 49.4 | 49 | -28 | 38 | 24- 96 |
| Pentachlorophenol | 200 | 139 | 70 | -28 | 50 | 9-103 |
| Pyrene | 100 | 92.4 | 92 | 8 | 31 | 26-127 |

(1) N-Nitroso-di-n-propylamine

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

RPD: 1 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS: ENA20 10104767
51B 15811 ENA18

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix Spike - EPA Sample No.: ENA20

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.200 | 0 | 0.134 | 67 | 56-123 |
| Heptachlor | 0.200 | 0 | 0.135 | 68 | 40-131 |
| Aldrin | 0.200 | 0 | 0.116 | 58 | 40-120 |
| Dieldrin | 0.500 | 0 | 0.363 | 73 | 52-126 |
| Endrin | 0.500 | 0 | 0.372 | 74 | 56-121 |
| 4,4'-DDT | 0.500 | 0 | 0.458 | 92 | 38-127 |

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.200 | 0.134 | 67 | 0 | 15 | 56-123 |
| Heptachlor | 0.200 | 0.111 | 56 | 20 | 20 | 40-131 |
| Aldrin | 0.200 | 0.105 | 53 | 10 | 22 | 40-120 |
| Dieldrin | 0.500 | 0.373 | 75 | -3 | 18 | 52-126 |
| Endrin | 0.500 | 0.375 | 75 | -1 | 21 | 56-121 |
| 4,4'-DDT | 0.500 | 0.447 | 89 | 2 | 27 | 38-127 |

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

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Lab File ID: 102CA003 Lab Sample ID: VBLK51

Date Analyzed: 02/01/91 Time Analyzed: 1404

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: INC50A

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | ENA18 | 10104765 | 102CA016 | 2228 |
| 02 | ENA19 | 10104766 | 102CA017 | 2307 |

COMMENTS: VBLK51 + 70UL MEOH
LOW LEVEL WATERS METHOD, INC50A

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Lab File ID: 102CA028 Lab Sample ID: VBLK53

Date Analyzed: 02/04/91 Time Analyzed: 1356

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: INC50A

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | ENA20 | 10104767 | 102CA031 | 1555 |
| 02 | ENA21 | 10104770 | 102CA034 | 1754 |
| 03 | ENA22 | 10104771 | 102CA035 | 1833 |
| 04 | ENA23 | 10105039 | 102CA037 | 1951 |
| 05 | ENA25 | 10104772 | 102CA036 | 1912 |
| 06 | ZZZZZ | HOLD_BLANK | 102CA038 | 2031 |
| 07 | ENA20MS | 10104768 | 102CA032 | 1634 |
| 08 | ENA20MSD | 10104769 | 102CA033 | 1714 |

COMMENTS: VBLK53 + 70UL MEOH
LOW LEVEL WATERS METHOD, INC50A

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Lab File ID: 1015B025 Lab Sample ID: SBLK29

Date Extracted: 01/31/91 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 02/01/91 Time Analyzed: 1941

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 51B

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | ENA18 | 10104765 | 1015B026 | 02/01/91 |
| 02 | ENA19 | 10104766 | 1015B027 | 02/01/91 |
| 03 | ENA20 | 10104767 | 1015B028 | 02/01/91 |
| 04 | ENA21 | 10104770 | 1015B031 | 02/02/91 |
| 05 | ENA22 | 10104771 | 1015B032 | 02/02/91 |
| 06 | ENA25 | 10104772 | 1015B033 | 02/02/91 |
| 07 | ENA20MS | 10104768 | 1015B029 | 02/01/91 |
| 08 | ENA20MSD | 10104769 | 1015B030 | 02/02/91 |

COMMENTS: SBLK29 1/31/91 B22
51B 15811 ENA18



FORM IV SV 1/87 Rev.

4B

# SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Lab File ID: 1025B010 Lab Sample ID: SBLK32

Date Extracted: 02/02/91 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 02/06/91 Time Analyzed: 1618

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 51B

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | ENA23 | 10105039 | 1025B011 | 02/06/91 |

COMMENTS: SBLK32 2/2/91 W B24
51B 15811 ENA18



FORM IV SV 1/87 Rev.

4C

# PESTICIDE METHOD BLANK SUMMARY

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Lab Sample ID: M BLK Lab File ID: PBLK-1

Matrix:(soil/water) WATER Level:(low/med) LOW

Date Extracted: 02/01/91 Extraction:(SepF/Cont/Sonc) SEPF

Date Analyzed (1): 02/05/91 Date Analyzed (2): _____

Time Analyzed (1): _____ Time Analyzed (2): _____

Instrument ID (1): HP002 Instrument ID (2): _____

GC Column ID (1): MIXPHASE GC Column ID (2): _____

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | ENA18 | 10104765 | 02/05/91 | |
| 02 | ENA19 | 10104766 | 02/05/91 | |
| 03 | ENA20 | 10104767 | 02/05/91 | |
| 04 | ENA21 | 10104770 | 02/05/91 | |
| 05 | ENA22 | 10104771 | 02/05/91 | |
| 06 | ENA23 | 10105039 | 02/05/91 | |
| 07 | ENA25 | 10104772 | 02/05/91 | |
| 08 | ENA20MS | 10104768 | 02/05/91 | |
| 09 | ENA20MSD | 10104769 | 02/05/91 | |

COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK51

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: VBLK51

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA003

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 02/01/91

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 10 | U |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK51

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: VBLK51

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 02/01/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

FORM I VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK53

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: VBLK53

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA028

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 02/04/91

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 2 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK53

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: VBLK53

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA028

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

FORM I VOA-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK29

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: SBLK29

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B025

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK29

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: SBLK29

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B025

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK29

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: SBLK29

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B025

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK32

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: SBLK32

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1025B010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/02/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/06/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK32

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: SBLK32

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1025B010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/02/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/06/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK32

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: SBLK32

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1025B010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/02/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/06/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK-1

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: M-BLK

Sample wt/vol: 1000 (g/mL) ML Lab File ID: PBLK-1

Level: (low/med) LOW Date Received:

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA18

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104765

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA016

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/01/91

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 4 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA18

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104765

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA016

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/01/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA19

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104766

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA017

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/01/91

Column: (pack/cap) PACK Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 3 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA19

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104766

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA017

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/01/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA20

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104767

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA031

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column: (pack/cap) PACK Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 10 ~~B~~ | ~~B~~ U 2R 3-18-9 |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 0.9 | J |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA20

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104767

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA031

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA21

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104770

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA034

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column: (pack/cap) PACK Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 10 ~~4~~ | ~~BJ~~ U ZR 3-18-91 |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA21

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104770

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA034

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA22

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104771

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA035

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column: (pack/cap) PACK Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 10 ~~3~~ | ~~BJ~~ U ZR 3-18-9 |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 0.9 | J |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 2 | J |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 0.5 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA22

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104771

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA035

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA23

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10105039

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA037

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 10 ~~3~~ | ~~BJ~~ U ZR 3-18-91 |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA23

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10105039

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA037

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 556-67-2 | CYCLOTETRASILOXANE, OCTAMETH | 23.42 | 5.3 | J |

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA25

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104772

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA036

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column: (pack/cap) PACK Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 67-64-1 | Acetone | 10 ~~5~~ | ~~BJ~~ U ZR 3-18-91 |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 1 | J |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylenes (total) | 5 | U |

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA25

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104772

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 102CA036

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ Date Analyzed: 02/04/91

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

FORM I VOA-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA18

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104765

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B026

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ K |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

M.Y. 4/17/91

FORM I SV-1 1/87 Rev.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA18

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104765

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B026

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | ~~50~~ | ~~U~~ R |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

M.Y. 4-17-91

(1) - Cannot be separated from Diphenylamine

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA18

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104765

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B026

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA19

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Set ~~Case~~ No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104766

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B027

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ R |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

MY 4/17/91

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA19

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104766

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B027

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | ~~50~~ | ~~U~~ R |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

MA 2/19/91

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA19

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104766

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B027

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA20

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104767

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B028

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ R |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

M.Y. 4/17/91

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA20

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104767

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B028

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | ~~50~~ | ~~U~~ R M.Y. 4/17/91 |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA20

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104767

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B028

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/01/91

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

Number TICs found: 3

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 41.31 | 12 | J |
| 2. | UNKNOWN | 41.52 | 30 | J |
| 3. | UNKNOWN | 42.26 | 11 | J |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA21

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104770

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B031

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

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

| CAS NO. | COMPOUND | | Q | |
|---|---|---|---|---|
| 108-95-2 | Phenol | 10 | U | |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U | |
| 95-57-8 | 2-Chlorophenol | 10 | U | |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U | |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U | |
| 100-51-6 | Benzyl Alcohol | 10 | U | |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U | |
| 95-48-7 | 2-Methylphenol | 10 | U | |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U | |
| 106-44-5 | 4-Methylphenol | 10 | U | |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U | |
| 67-72-1 | Hexachloroethane | 10 | U | |
| 98-95-3 | Nitrobenzene | 10 | U | |
| 78-59-1 | Isophorone | 10 | U | |
| 88-75-5 | 2-Nitrophenol | 10 | U | |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U | |
| 65-85-0 | Benzoic Acid | 50 | U | |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U | |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U | |
| 91-20-3 | Naphthalene | 10 | U | |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ R | M.Y. 4/17/91 |
| 87-68-3 | Hexachlorobutadiene | 10 | U | |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U | |
| 91-57-6 | 2-Methylnaphthalene | 10 | U | |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U | |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U | |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U | |
| 91-58-7 | 2-Chloronaphthalene | 10 | U | |
| 88-74-4 | 2-Nitroaniline | 50 | U | |
| 131-11-3 | Dimethyl Phthalate | 10 | U | |
| 208-96-8 | Acenaphthylene | 10 | U | |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U | |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA21

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104770

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B031

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q | |
|---|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | ~~50~~ | ~~U~~ R | M.Y. 4/17/91 |
| 83-32-9 | Acenaphthene | 10 | U | |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U | |
| 100-02-7 | 4-Nitrophenol | 50 | U | |
| 132-64-9 | Dibenzofuran | 10 | U | |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U | |
| 84-66-2 | Diethylphthalate | 10 | U | |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U | |
| 86-73-7 | Fluorene | 10 | U | |
| 100-01-6 | 4-Nitroaniline | 50 | U | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U | |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U | |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U | |
| 118-74-1 | Hexachlorobenzene | 10 | U | |
| 87-86-5 | Pentachlorophenol | 50 | U | |
| 85-01-8 | Phenanthrene | 10 | U | |
| 120-12-7 | Anthracene | 10 | U | |
| 84-74-2 | Di-n-Butylphthalate | 10 | U | |
| 206-44-0 | Fluoranthene | 10 | U | |
| 129-00-0 | Pyrene | 10 | U | |
| 85-68-7 | Butylbenzylphthalate | 10 | U | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U | |
| 56-55-3 | Benzo(a)anthracene | 10 | U | |
| 218-01-9 | Chrysene | 10 | U | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U | |
| 117-84-0 | Di-n-octylphthalate | 10 | U | |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U | |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U | |
| 50-32-8 | Benzo(a)pyrene | 10 | U | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U | |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U | |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U | |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA21

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104770

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B031

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 4.40 | 11 | J |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA22

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104771

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B032

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ R |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U M.T. |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U 4/17/91 |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA22

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104771

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B032

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | ~~50~~ | ~~U~~ R |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

M.Y. 4/19/91

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA22

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104771

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B032

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

FORM I SV-TIC 1/87 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA23

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10105039

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1025B011

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/02/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/06/91

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

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ R M.Y. 4/17/91 |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

FORM I SV-1 1/87 Rev.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA23

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10105039

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1025B011

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/02/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/06/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 10 | U |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 1 | J |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA23

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10105039

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1025B011

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/02/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/06/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA25

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104772

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B033

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 10 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10 | U |
| 100-51-6 | Benzyl Alcohol | 10 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 65-85-0 | Benzoic Acid | 50 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | ~~10~~ | ~~U~~ R |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethyl Phthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |

M.Y. 9/17/91

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA25

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET ~~Case~~ Set No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104772

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B033

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q | |
|---|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | ~~50~~ | ~~U~~ R | M.Y. 4/17/91 |
| 83-32-9 | Acenaphthene | 10 | U | |
| 51-28-5 | 2,4-Dinitrophenol | 50 | U | |
| 100-02-7 | 4-Nitrophenol | 50 | U | |
| 132-64-9 | Dibenzofuran | 10 | U | |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U | |
| 84-66-2 | Diethylphthalate | 10 | U | |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U | |
| 86-73-7 | Fluorene | 10 | U | |
| 100-01-6 | 4-Nitroaniline | 50 | U | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U | |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U | |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U | |
| 118-74-1 | Hexachlorobenzene | 10 | U | |
| 87-86-5 | Pentachlorophenol | 50 | U | |
| 85-01-8 | Phenanthrene | 10 | U | |
| 120-12-7 | Anthracene | 10 | U | |
| 84-74-2 | Di-n-Butylphthalate | 10 | U | |
| 206-44-0 | Fluoranthene | 10 | U | |
| 129-00-0 | Pyrene | 10 | U | |
| 85-68-7 | Butylbenzylphthalate | 10 | U | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U | |
| 56-55-3 | Benzo(a)anthracene | 10 | U | |
| 218-01-9 | Chrysene | 10 | U | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U | |
| 117-84-0 | Di-n-octylphthalate | 10 | U | |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U | |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U | |
| 50-32-8 | Benzo(a)pyrene | 10 | U | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U | |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U | |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U | |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA25

Lab Name: HAZLET Contract: 5511-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 5511-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104772

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1015B033

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 01/31/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/02/91

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

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

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1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA18

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104765

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA19

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104766

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA20

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104767

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA21

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104770

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA22

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104771

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

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# PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA23

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10105039

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA25

Lab Name: HAZLET Contract: 6001-HQ

Lab Code: HAZLET Case No.: 15811 SAS No.: 6001-HQ SDG No.: ENA18

Matrix: (soil/water) WATER Lab Sample ID: 10104772

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 02/01/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/05/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.10 | U |
| 72-55-9 | 4,4'-DDE | 0.10 | U |
| 72-20-8 | Endrin | 0.10 | U |
| 33213-65-9 | Endosulfan II | 0.10 | U |
| 72-54-8 | 4,4'-DDD | 0.10 | U |
| 1031-07-8 | Endosulfan sulfate | 0.10 | U |
| 50-29-3 | 4,4'-DDT | 0.10 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.50 | U |
| 5103-74-2 | gamma-Chlordane | 0.50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.50 | U |
| 11104-28-2 | Aroclor-1221 | 0.50 | U |
| 11141-16-5 | Aroclor-1232 | 0.50 | U |
| 53469-21-9 | Aroclor-1242 | 0.50 | U |
| 12672-29-6 | Aroclor-1248 | 0.50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

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3/27

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 3·11·91

SUBJECT: Review of Region V CLP Data
Received for Review on March 1, 1991 3/12

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory Jay Thakkar

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: CENTRAL IRON & METAL (MI) SMO Case No. 15811

EPA Data Set No. _____ No. of Samples: 7 D.U./Activity Numbers TFA / TFA102

CRL No. 91FS37S33 - S37, D33 91FS04R38

SMO Traffic No. MEMM04 - 09, 11

CLP Laboratory: COLUMBIA Hrs. Required for Review: 4+2 +0.5 Audit JR

Following are our findings.

The laboratory's portion of case 15811 contains 7 low level water samples assayed for total metals and cyanide. The following narrative lists the out of control audits and their possible effects on the data.

(( See Next Page ))

Maria L Massey
3/8/91

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Dr. Alfred Haeberer/Joan Fisk/Gary Ward, EPA Support Services
Ross K. Robeson, EMSL-Las Vegas
Don Trees, CLP/Sample Management Office

**LABORATORY: COLUMBIA** **CASE: 15811**

**Samples (MEMM04-09 and 11)**

**ICP Analyses:** The preparation blank was found to contain Ca(51.3 ug/L) and Zn(1.6 ug/L). The Ca result for sample MEMM11 and Zn results for samples MEMM05 and 07 are estimated(J) due to contamination.

The CCB was found to contain Fe(96.9 ug/L) and Na(30.4 ug/L). Fe results for samples MEMM04-07 and the Na result for sample MEMM11 are estimated(J) due to contamination.

**GFAA Analyses:** The Se result for sample MEMM05 was flagged(W) by the lab and is estimated(UJ) due to interference.

**OTHER QUALIFIERS:** All Hg and CN data are acceptable.

Samples MEMM04/05 are field duplicates that showed good correlation.

Sample MEMM11 is a field blank that was found to contain Cu(11.6 ug/L). Cu results for all samples are estimated(J) due to contamination.

Marie L Massey
3/7/91

Flow level WATER

# QC EXCEPTION SUMMARY REPORT

CASE # 15811
DATA SET # MEMM04-09, 11
LAB Q.C.#
DATE: March 7, 1991

SITE Central Iron + Metal
LAB Columbia
REVIEWED BY MARIA MASSEY

MATRIX:
CONC. :

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

| | OVERALL CASE QC | | | | | | | | | MATRIX SPECIFIC QC | | | | | | SAMPLE SPECIFIC QC | | FIELD QC | | | REGIONAL QC | | | OTHER/ COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Holding Time | Cal Blanks | Init Cal ver | Contin Cal ver | Prep Blk AQ | Prep Blk SOL | ICS %R | LCS % AQ | LCS % SOL | Sol Dup RPD | Sol Spk %R | AQ Dup RPD | AQ Spk %R | Ser Diln AQ | Ser Diln SOL | GFAA Dup | GFAA Spike | Blank | Dup RPD | Spike %R | Blind Blank | Blind Spike %R | Split Sample RPD | |
| Aluminum | | | | | 42.7 | | | | | | | | | | | | | | | | | | | |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | | | | | 51.3 | | | | | | | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | | (100) | | | | | | | | | | |
| Iron | | | | | | | | | | | | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | | (116.5) | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Tin | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | (100) | | | | | | | | | | |
| Zinc | | | | | 1.6 | | | | | | | | | (15.7) | | | | | | | | | | |
| Cyanide | | | | | | | | | | | | | | | | | | | | | | | | |

Fe CCB23(96.9)(94.4): could affect all 04-07

Na CCB2(30.4) could affect all 11

Tl CCB4(1.1) could affect 08, 09, 11

ZnPB 05, 07

30,350 41,150
38,05 Na (52%)

CN Date prep 2/13
del. (2.5 ICV, + 09S not match
R.D. ÷ 2
del.
Ship 1/29 & 1/30

Mn(123%)
Dupl. 05/06
Calcium RPD(30%)

Cu(11.6

Field Blank 11 Fe (141%) Mg(46.5%)

Table 4-__
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED Groundwater SAMPLES

Groundwater MY 4/17/91

| Physical State* | Waste Characteristics* | Category*** | SI Memo | Sample Collection Information and Parameters | RW1 | Duplicate 2 | RW2 3 | RW3 4 | RW4 5 | RW5 6 | Sample Number 7 Blank | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ENA 18 | ENA 19 | ENA20 | ENA21 | ENA22 | ENA23 | ENA25 | | | | | |
| | | | | Date | 1/29/91 | 1/29/91 | 1/29/91 | 1/29/91 | 1/29/91 | 1/30/91 | 1/29/91 | | | | | |
| | | | | Time | 1040 | 1040 | 1250 | 1400 | 1445 | 1130 | 1000 | | | | | |
| | | | | ~~Well Depth (feet)~~ | | | | | | | | | | | | |
| | | | | ~~CRL Log Number~~ | | | | | | | | | | | | |
| | | | | CLP Organic Traffic Report Number | ENA 18 | ENA 19 | ENA 20 | ENA 21 | ENA 22 | ENA 23 | ENA 24 | | | | | |
| | | | | CLP Inorganic Traffic Report Number | MEMM 04 | MEMM 05 | MEMM 06 | MEMM 07 | MEMM 08 | MEMM 09 | MEMM 11 | | | | | |
| | | | | Temperature (°C) | | | | | | | | | | | | |
| | | | | Specific Conductivity (µmhos/cm) | | | | | | | | | | | | |
| | | | | pH | | | | | | | | | | | | |
| | | | | Compound Detected (values in µg/L or µg/Kg) | | | | | | | | | | | | |
| | | | | Volatile Organics | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | chloroethane | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | bromomethane | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | vinyl chloride | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | chloroethane | | | | | | | | | | | | |
| Liquid | A,D,H,I | SOL | HH, CLA | methylene chloride | | | | | | | | | | | | |
| Liquid | E,H,I,A | SOL | K, CLA | acetone | 4 J | 3 J | -- | -- | -- | -- | -- | | | | | |
| Liquid | A,H,I | SOL | SH | carbon disulfide | | | | | | | | | | | | |
| Liquid | A,D,G,I | SOL | HH | 1,1-dichloroethene | | | | | | | | | | | | |
| Liquid | A,D,H,G | SOL | HH | 1,1-dichloroethane | -- | -- | -- | -- | 0.9 J | -- | -- | | | | | |
| Liquid | A,D,G | SOL | HH | 1,2-dichloroethene (total) | -- | -- | -- | -- | 7 | -- | -- | | | | | |
| Liquid | A,D | SOL | HH | chloroform | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | 1,2-dichloroethane | | | | | | | | | | | | |
| Liquid | A,E,G | SOL | K, CLA | 2-butanone (MEK) | -- | -- | 0.9 J | -- | -- | -- | -- | | | | | |
| Liquid | A,D | SOL | HH | 1,1,1-trichloroethane | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | carbon tetrachloride | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HYD | vinyl acetate | | | | | | | | | | | | |
| Liquid | A,D | OCC | HH | bromodichloroethane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | 1,2-dichloropropane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | cis-1,3-dichloropropene | | | | | | | | | | | | |
| Liquid | A,D,G,B | SOL | HH | trichloroethene | -- | -- | -- | -- | 2 J | -- | -- | | | | | |
| Liquid | A,D | OCC | HH | dibromochloroethane | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | 1,1,2-trichloroethane | | | | | | | | | | | | |
| Liquid | A,G | SOL | A | benzene | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | trans-1,3-dichloropropene | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH, CLA | bromoform | | | | | | | | | | | | |
| Liquid | A,E,G | SOL | K, CLA | 4-methyl-2-pentanone | | | | | | | | | | | | |
| Liquid | A,E,G | SOL | K | 2-hexanone | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | tetrachloroethene | | | | | | | | | | | | |
| Liquid | A,G,E | SOL | A, CLA | toluene | -- | -- | -- | -- | 0.5 J | -- | -- | | | | | |
| Liquid | A,D,E | SOL | HH | 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HA | chlorobenzene | | | | | | | | | | | | |
| Liquid | A,G | SOL | A | ethylbenzene | | | | | | | | | | | | |
| Liquid | A,D,G | OCC | A | styrene | | | | | | | | | | | | |
| Liquid | A,G | SOL | A | xylenes (total) | | | | | | | | | | | | |

Table 4- (Cont.)

MY 4/17/91

| Physical State* | Waste Characteristics** | Category*** | SI Memo | Sample Collection Information and Parameters | RW1 ~~ENA 18~~ | Duplicate 2 ~~ENA 19~~ | RW2 3 ~~ENA 20~~ | RW3 4 ~~ENA 21~~ | RW4 5 ~~ENA 22~~ | RW5 6 ~~ENA 23~~ | B/ank 7 ~~ENA 25~~ | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Semivolatile Organics | | | | | | | | | | | | |
| S, thick l | A,B,E | OCC | P | phenol | | | | | | | | | | | | |
| Liquid | A,D,B | OCC | HH | bis(2-chloroethyl)ether | | | | | | | | | | | | |
| Liquid | A,D,B | OCC | P | 2-chlorophenol | | | | | | | | | | | | |
| Liquid | A,D,H | SOL | HA | 1,3-dichlorobenzene | | | | | | | | | | | | |
| Solid | A,D,H | OCC | HA | 1,4-dichlorobenzene | | | | | | | | | | | | |
| Liquid | A,D,H | SOL | A | benzyl alcohol | | | | | | | | | | | | |
| Liquid | A,D,H | OCC | HA | 1,2-dichlorobenzene | | | | | | | | | | | | |
| Liquid | A,B | OCC | P | 2-methylphenol | | | | | | | | | | | | |
| | A,D | OCC | HH | bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| Liquid | A,B | OCC | P | 4-methylphenol | | | | | | | | | | | | |
| | A | OCC | H-Amine | n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | hexachloroethane | | | | | | | | | | | | |
| Liquid | A,D | OCC | NA | nitrobenzene | | | | | | | | | | | | |
| Liquid | A,D | OCC | H | isophorone | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 2-nitrophenol | | | | | | | | | | | | |
| Solid | A,B | OCC | P | 2,4-dimethylphenol | | | | | | | | | | | | |
| Solid | A | OCC | A | benzoic acid | | | | | | | | | | | | |
| | A,D | OCC | HH | bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| Liquid | A,D | OCC | P | 2,4-dichlorophenol | | | | | | | | | | | | |
| Liquid | A,D | OCC | HA | 1,2,4-trichlorobenzene | | | | | | | | | | | | |
| Solid | A | OCC | PAH | naphthalene | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | 4-chloroaniline | R | R | R | R | R | R | R | | | | | |
| Liquid | A,D,B | OCC | HH | hexachlorobutadiene | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 4-chloro-3-methylphenol | | | | | | | | | | | | |
| Liquid | A,D | OCC | PAH | 2-methylnaphthalene | | | | | | | | | | | | |
| Liquid | A,D,B | OCC | HH | hexachlorocyclopentadiene | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 2,4,6-trichlorophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 2,4,5-trichlorophenol | | | | | | | | | | | | |
| Liquid | A,D | OCC | PAH | 2-chloronaphthalene | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | 2-nitroaniline | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH,CLA | dimethylphthalate | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | acenaphthylene | | | | | | | | | | | | |
| Solid | A,D | OCC | NA | 2,6-dinitrotoluene | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | 3-nitroaniline | R | R | R | R | R | — — | R | | | | | |
| Solid | A,D | OCC | PAH | acenaphthene | | | | | | | | | | | | |
| Solid | A,D,G | OCC | P | 2,4-dinitrophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 4-nitrophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | A | dibenzofuran | | | | | | | | | | | | |
| Solid | A,D | OCC | NA | 2,4-dinitrotoluene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH | diethylphthalate | | | | | | | | | | | | |
| | A,D | OCC | HH | 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | fluorene | | | | | | | | | | | | |
| Solid | A,D,E | OCC | HH | 4-nitroaniline | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | n-nitrosodiphenylamine | | | | | | | | | | | | |
| Liquid | A,D | OCC | HH | 4-bromophenyl-phenylether | | | | | | | | | | | | |
| Solid | A,D | OCC | HA | hexachlorobenzene | | | | | | | | | | | | |
| Solid | A,D | OCC | P | pentachlorophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | phenanthrene | | | | | | | | | | | | |

Table 4- (Cont.)

MY 4/17/91

| Physical State* | Waste Characteristics** | Category*** | SI Memo | Sample Collection Information and Parameters | Sample Number 1 ENA 18 | 2 ENA 19 | 3 ENA 20 | 4 ENA 21 | 5 ENA 22 | 6 ENA 23 | 7 ENA 25 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Semivolatile Organics, Cont. | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | anthracene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH,CLA | di-n-butylphthalate | | | | | | 1 J | | | | | | |
| Solid | A,D | OCC | PAH | fluoranthene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | pyrene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH,CLA | butylbenzylphthalate | | | | | | | | | | | | |
| | A,D | OCC | HA | 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[a]anthracene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | chrysene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH,CLA | bis(2-ethylhexyl)phthalate | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH,CLA | di-n-octylphthalate | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[b]fluoranthene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[k]fluoranthene | | | | | | | | | | | | |
| Solid | A,D,K,L | OCC | PAH | benzo[a]pyrene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | indeno[1,2,3-cd]pyrene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | dibenzo[a,h]anthracene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[g,h,i]perylene | | | | | | | | | | | | |
| | | | | Pesticides/PCBs | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | alpha BHC | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | beta BHC | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | delta BHC | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | gamma BHC (Lindane) | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Heptachlor | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Aldrin | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Heptachlor epoxide | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endosulfan I | | | | | | | | | | | | |
| Solid | A,D,E | PSD | PEST | Dieldrin | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | 4,4'-DDE | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endrin | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endosulfan II | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | 4,4'-DDD | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endosulfan sulfate | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | 4,4'-DDT | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Methoxychlor (Mariate) | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endrin ketone | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | alpha Chlordane | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | gamma Chlordane | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Toxaphene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1016 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1221 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1232 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1242 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1248 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1254 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1260 | | | | | | | | | | | | |

Checked MK
8/28/91

Table 4-> Cont.

| Sample Collection Information and Parameters | MEMM04 ~~MW1~~ ~~GW1~~ | MW2 ~~> 2~~ ~~GW2~~ | ~~07~~ ~~MW3~~ ~~GW3~~ | ~~08~~ ~~MW4~~ ~~GW4~~ | ~~09~~ ~~MW5~~ ~~GW5~~ | Duplicate ~~MEMM05~~ ~~> 6~~ ~~GW6 (Dup)~~ | Blank ~~MEMM11~~ ~~Sample Number~~ ~~> 7~~ ~~GW7 (Blk)~~ | > 8 | > 9 | > 10 | > 11 | > 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte Detected (values in > ~~mg/kg~~ or µg/L) | MEMM 04 | MEMM 06 | MEMM 07 | MEMM 08 | MEMM 09 | MEMM 05 | MEMM 11 | | | | | |
| aluminum | | | | | | | | | | | | |
| antimony | | | | | | | | | | | | |
| arsenic | — — | — — | — — | 1.2B | — — | — — | — — | | | | | |
| barium | 44.6 | 78.5B | 127B | 101B | 69B | 43.3B | — — | | | | | |
| beryllium | | | | | | | | | | | | |
| cadmium | — — | — — | 3.2B | — — | — — | — — | — — | | | | | |
| calcium | 82,100 | 106,000 | 132,000 | 118,000 | 100,000 | 78,000 | 81.2BJ | | | | | |
| chromium | | | | | | | | | | | | |
| cobalt | | | | | | | MK | | | | | |
| copper | 2.7BJ | 4.7BJ | 2.3BJ | 3.7 BJ | 3.5BJ | 2.3BJ B | 11.6BJ | | | | | |
| iron | 28.8BJ | 229J | 40.1BJ | 592 | 6,880 | 39.8BJ | — — | | | | | |
| lead | | | | | | | | | | | | |
| magnesium | 24,600 | 37,400 | 39,700 | 36,700 | 25,300 | 23,300 | — — | | | | | |
| manganese | 17.1 | 61.5 | 278 | 150 | 69 | 14.6B | 1.2B | | | | | |
| mercury | | | | | | | | | | | | |
| nickel | | | | | | | | | | | | |
| potassium | 1,730B | 1,050B | 2,080B | 2,880B | 1,940 | 1,570B | — — | | | | | |
| selenium | 3.1B | — — | — — | — — | — — | — — | — — | | | | | |
| silver | | | | | | | | | | | | |
| sodium | 31,200 | 51,900 | 100,000 | 52,200 | 64,300 | 30,400 | 92.9BJ | | | | | |
| thallium | | | | | | | | | | | | |
| vanadium | — — | — — | — — | — — | 2.1B | — — | — — | | | | | |
| zinc | 9.9B | 12.5B | 4.7BJ | 8.3B | 45.0 | 6.8BJ | — — | | | | | |
| cyanide | | | | | | | | | | | | |

— Not detected.

| | | |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRQL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a B qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

| ANALYTE QUALIFIERS | | DEFINITION | INTERPRETATION |
|---|---|---|---|
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S | S | Analysis by Method of Standard Additions. | Value is quantitative. |
| N | N | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| + | + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| | M | Duplicate injection precision not met. | Value may be semiquantitative. |
| | W | Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |
| | R | Results are unusable due to a major violation of QC protocols. | Analyte value is not usable. |

Source: Ecology and Environment, Inc. 1989.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED ~~GW~~ Groundwater SAMPLES ~~Ground Water~~
for the CIM site

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GW1 | GW2 | GW 3 | GW 4 | GW 5 | ~~GW6~~ ~~GW10~~ | 7 BLK | 8 | 9 | 10 | 11 | 12 |
| Date | 1/29/91 | 1/29/91 | 1/29/91 | 1/29/91 | 1/30/91 | 1/29/91 | 1/29/91 | | | | | |
| Time | 10:40 | 12:50 | 1400 | 1445 | 1130 | 1040 | 1000 | | | | | |
| Organic Traffic Report Number | E-NA 18 | E-NA20 | ENA 21 | ENA 22 | ENA 23 | ENA 19 | ENA 25 | | | | | |
| Inorganic Traffic Report Number | MEMM04 | MEMM06 | MEMM07 | MEMM08 | MEMM09 | MEMM05 | MEMM11 | | | | | |
| Temperature (°C) | NA | NA | NA | NA | NA | NA | NA | | | | | |
| Specific Conductivity (µmhos) | NA | NA | NA | NA | NA | NA | NA | | | | | |
| pH | NA | NA | NA | NA | NA | NA | NA | | | | | |
| Compound Detected (values in µg/L or µg/kg) | | | | | | | | | | | | |
| Volatile Organics | | | | | | | | | | | | |
| chloromethane | | | | | | | | | | | | |
| bromomethane | | | | | | | | | | | | |
| vinyl chloride | | | | | | | | | | | | |
| chloroethane | | | | | | | | | | | | |
| methylene chloride | | | | | | | | | | | | |
| acetone | 4J | | | | | 3J | | | | | | |
| carbon disulfide | | | | | | | | | | | | |
| 1,1-dichloroethene | | | | | | | | | | | | |
| 1,1-dichloroethane | | | | 0.9J | | | | | | | | |
| 1,2-dichloroethene (total) | | | | 7 | | | | | | | | |
| chloroform | | | | | | | | | | | | |
| 1,2-dichloroethane | | | | | | | | | | | | |
| 2-butanone (MEK) | | 0.9J | | | | | | | | | | |
| 1,1,1-trichloroethane | | | | | | | | | | | | |
| carbon tetrachloride | | | | | | | | | | | | |
| vinyl acetate | | | | | | | | | | | | |
| bromodichloromethane | | | | | | | | | | | | |
| 1,2-dichloropropane | | | | | | | | | | | | |
| cis-1,3-dichloropropene | | | | | | | | | | | | |
| trichloroethene | | | | 2J | | | | | | | | |
| dibromochloromethane | | | | | | | | | | | | |
| 1,1,2-trichloroethane | | | | | | | | | | | | |
| benzene | | | | | | | | | | | | |
| trans-1,3-dichloropropene | | | | | | | | | | | | |
| bromoform | | | | | | | | | | | | |
| 4-methyl-2-pentanone | | | | | | | | | | | | |
| 2-hexanone | | | | | | | | | | | | |
| tetrachloroethene | | | | | | | | | | | | |
| toluene | | | | 0.5J | | | | | | | | |
| 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| chlorobenzene | | | | | | | | | | | | |
| ethylbenzene | | | | | | | | | | | | |
| styrene | | | | | | | | | | | | |
| xylenes (total) | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | >_1 GW | >_2 GW | >_3 GW | >_4 GW | >_5 GW | >_6 GW | >_7 GW | >_8 | >_9 | >_10 | >_11 | >_12 |
| Semivolatile Organics | | | | | | | | | | | | |
| phenol | | | | | | | | | | | | |
| bis(2-chloroethyl)ether | | | | | | | | | | | | |
| 2-chlorophenol | | | | | | | | | | | | |
| 1,3-dichlorobenzene | | | | | | | | | | | | |
| 1,4-dichlorobenzene | | | | | | | | | | | | |
| benzyl alcohol | | | | | | | | | | | | |
| 1,2-dichlorobenzene | | | | | | | | | | | | |
| 2-methylphenol | | | | | | | | | | | | |
| bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| 4-methylphenol | | | | | | | | | | | | |
| n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| hexachloroethane | | | | | | | | | | | | |
| nitrobenzene | | | | | | | | | | | | |
| isophorone | | | | | | | | | | | | |
| 2-nitrophenol | | | | | | | | | | | | |
| 2,4-dimethylphenol | | | | | | | | | | | | |
| benzoic acid | | | | | | | | | | | | |
| bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| 2,4-dichlorophenol | | | | | | | | | | | | |
| 1,2,4-trichlorobenzene | | | | | | | | | | | | |
| naphthalene | | | | | | | | | | | | |
| 4-chloroaniline | R | R | R | R | R | R | R | | | | | |
| hexachlorobutadiene | | | | | | | | | | | | |
| 4-chloro-3-methylphenol | | | | | | | | | | | | |
| 2-methylnaphthalene | | | | | | | | | | | | |
| hexachlorocyclopentadiene | | | | | | | | | | | | |
| 2,4,6-trichlorophenol | | | | | | | | | | | | |
| 2,4,5-trichlorophenol | | | | | | | | | | | | |
| 2-chloronaphthalene | | | | | | | | | | | | |
| 2-nitroaniline | | | | | | | | | | | | |
| dimethylphthalate | | | | | | | | | | | | |
| acenaphthylene | | | | | | | | | | | | |
| 2,6-dinitrotoluene | | | | | | | | | | | | |
| 3-nitroaniline | R | R | R | R | R | ~~R~~ | R | | | | | |
| acenaphthene | | | | | | | | | | | | |
| 2,4-dinitrophenol | | | | | | | | | | | | |
| 4-nitrophenol | | | | | | | | | | | | |
| dibenzofuran | | | | | | | | | | | | |
| 2,4-dinitrotoluene | | | | | | | | | | | | |
| diethylphthalate | | | | | | | | | | | | |
| 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| fluorene | | | | | | | | | | | | |
| 4-nitroaniline | | | | | | | | | | | | |
| 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| n-nitrosodiphenylamine | | | | | | | | | | | | |
| 4-bromophenyl-phenylether | | | | | | | | | | | | |
| hexachlorobenzene | | | | | | | | | | | | |
| pentachlorophenol | | | | | | | | | | | | |
| phenanthrene | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | > 1 GW1 | > 2 GW2 | > 3 GW3 | > 4 GW4 | > 5 GW5 | > 6 GW6 | > 7 GW7 | > 8 | > 9 | > 10 | > 11 | > 12 |
| **Semivolatile Organics, Cont.** | | | | | | | | | | | | |
| anthracene | | | | | 15 | | | | | | | |
| di-n-butylphthalate | | | | | | | | | | | | |
| fluoranthene | | | | | | | | | | | | |
| pyrene | | | | | | | | | | | | |
| butylbenzylphthalate | | | | | | | | | | | | |
| 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| benzo[a]anthracene | | | | | | | | | | | | |
| chrysene | | | | | | | | | | | | |
| bis(2-ethylhexyl)phthalate | | | | | | | | | | | | |
| di-n-octylphthalate | | | | | | | | | | | | |
| benzo[b]fluoranthene | | | | | | | | | | | | |
| benzo[k]fluoranthene | | | | | | | | | | | | |
| benzo[a]pyrene | | | | | | | | | | | | |
| indeno[1,2,3-cd]pyrene | | | | | | | | | | | | |
| dibenzo[a,h]anthracene | | | | | | | | | | | | |
| benzo[g,h,i]perylene | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **Pesticides/PCBs** | | | | | | | | | | | | |
| alpha BHC | | | | | | | | | | | | |
| beta BHC | | | | | | | | | | | | |
| delta BHC | | | | | | | | | | | | |
| gamma BHC (Lindane) | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | |
| Aldrin | | | | | | | | | | | | |
| Heptachlor epoxide | | | | | | | | | | | | |
| Endosulfan I | | | | | | | | | | | | |
| Dieldrin | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | | | | | | |
| Endrin | | | | | | | | | | | | |
| Endosulfan II | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | | | | | | | |
| Endosulfan sulfate | | | | | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | |
| Methoxychlor (Mariate) | | | | | | | | | | | | |
| Endrin ketone | | | | | | | | | | | | |
| alpha Chlordane | | | | | | | | | | | | |
| gamma Chlordane | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | |
| Aroclor 1016 | | | | | | | | | | | | |
| Aroclor 1221 | | | | | | | | | | | | |
| Aroclor 1232 | | | | | | | | | | | | |
| Aroclor 1242 | | | | | | | | | | | | |
| Aroclor 1248 | | | | | | | | | | | | |
| Aroclor 1254 | | | | | | | | | | | | |
| Aroclor 1260 | | | | | | | | | | | | |

| COMPOUND QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a D qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

| ANALYTE QUALIFIERS | | DEFINITION | INTERPRETATION |
|---|---|---|---|
| OLD | NEW | | |
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S | S | Analysis by Method of Standard Additions. | Value is quantitative. |
| R | N | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| + | + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| | M | Duplicate injection precision not met. | Value may be semiquantitative. |
| | W | Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |

Source: Ecology and Environment, Inc. 1988.

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 1/24/91 FIT Receipt Date 3/1/91 Review Completed 3/28/91

TO: B. Slaughter
FROM: C. Kouris
SUBJECT: Central Iron & Metal
PAN: M+0358SB (1 hour charged for review) Case # 15580

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # _____ | Low Soil | # 8 | Low Soil |
| _____ | Low Water | _____ | Low Water |
| _____ | Drinking Water | _____ | Drinking Water |
| _____ | Other | _____ | Other |

Project Data Status _____ Completed!!

✓ Incomplete, awaiting low Water

FIT Data Review Findings:

***Check Data Sheets for Transcription Errors***

9 Compounds were detected in sample(s); see enclosed sheet.

Book No. ✓ Page No. _____ Date Sampled 12/18/90

0759:2

recycled paper

CK 3/28/91

Table 4- (Cont.)

| Physical State* | Waste Characteristics** | Category*** | SI Memo | Sample Collection Information and Parameters | Sample Number 1 MEMM04 | 2 DUP MEMM05 | 3 MEMM06 | 4 MEMM07 | 5 MEMM08 | 6 MEMM09 | 7 Blank MEMM11 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Analyte Detected (values in mg/kg or µg/L) | | | | | | | | | | | | |
| Solid | A,D | MES | CSC/CWC | aluminum | | | | | | | | | | | | |
| Solid | A,D | MES | HM | antimony | | | | | | | | | | | | |
| Solid | A,D | MES | HM | arsenic | | | | | 1.2B | | | | | | | |
| Solid | A,D | MES | CSC/CWC | barium | 44.6B | 43.3B | 78.5B | 127B | 101B | 69B | | | | | | |
| Solid | A,D | MES | M | beryllium | | | | | | | | | | | | |
| Solid | A,D | MES | HM | cadmium | | | | 3.2B | | | | | | | | |
| Solid | D | MES | CSC/CWC | calcium | 82100 | 78000 | 106000 | 132000 | 118000 | 100000 | 81.2BJ | | | | | |
| Solid | A,D | MES | HM | chromium | | | | | | | | | | | | |
| Solid | A,D | MES | HM | cobalt | | | | | | | | | | | | |
| Solid | A,D | MES | HM | copper | 2.7BJ | 2.3BJ | 4.7BJ | 2.3BJ | 3.7BJ | 3.5BJ | 11.6BJ | | | | | |
| Solid | A,D | MES | HM,CSC;CWC | iron | 28.8BJ | 39.8BJ | 229J | 40.1BJ | 592 | 6880 | | | | | | |
| Solid | A,D | MES | HM | lead | | | | | | | | | | | | |
| Solid | A,D | MES | CSC/CWC | magnesium | 24600 | 23300 | 37400 | 39700 | 36700 | 25300 | | | | | | |
| Solid | A,D | MES | HM | manganese | 17.1 | 14.6B | 61.5 | 278 | 150 | 69 | 1.2B | | | | | |
| Liquid | A,D | MES | HM | mercury | | | | | | | | | | | | |
| Solid | A,D | MES | HM | nickel | | | | | | | | | | | | |
| Solid | D | MES | CSC,CWC | potassium | 1730B | 1570B | 1050B | 2080B | 2880B | 1940 | | | | | | |
| Solid | A,D | MES | M | selenium | 3.1B | | | | | | | | | | | |
| Solid | A,D | MES | HM | silver | | | | | | | | | | | | |
| Solid | D | MES | CSC,CWC | sodium | 31200 | 30400 | 51900 | 100000 | 52200 | 64300 | 92.9BJ | | | | | |
| Solid | A,D | MES | HM | thallium | | | | | | | | | | | | |
| Solid | A,D | MES | HM | vanadium | | | | | | 2.1B | | | | | | |
| Solid | A,D | MES | CWL,CSC,HM | zinc | 9.9B | 6.8BJ | 12.5B | 4.7BJ | 8.3B | 45 | | | | | | |
| Solid | A | IOC | IOC | cyanide | | | | | | | | | | | | |

— Not detected.

| | | |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRQL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a B qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

| ANALYTE QUALIFIERS | | DEFINITION | INTERPRETATION |
|---|---|---|---|
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S | S | Analysis by Method of Standard Additions. | Value is quantitative. |
| N | N | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| + | + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| | M | Duplicate injection precision not met. | Value may be semiquantitative. |
| | W | Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |
| | R | Results are unusable due to a major violation of QC protocols. | Analyte value is not usable. |

Source: Ecology and Environment, Inc. 1989.

2/12

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 2-27-91

3/1

SUBJECT: Review of Region V CLP Data Received for Review on Jan 24, 1991

FROM: Curtis Ross, Director (ESCRL)
Central Regional Laboratory Jay Thatcher

TO: Data User: Ret

We have reviewed the data for the following case(s).

SITE NAME: Central Iron + metal (MI) SMO Case No. 15580

EPA Data Set No. _____ No. of Samples: 8 D.U./Activity Numbers TFA+TFA102

CRL No. 91FS35864-71

SMO Traffic No. memss7-59, memq97-99 memmo1-c

CLP Laboratory: NFT Hrs. Required for Review: 12+1

+.5 OK 2-26

Following are our findings.

The laboratory's portion of case 15580 contains 7 low level and 1 medium level soil samples assayed for total metals and cyanide. The following narrative lists the out of control audits and their possible effects on the data.

(( See Next Page.))

Maria L Massey 2/22/91

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Dr. Alfred Haeberer/Joan Fisk/Gary Ward, EPA Support Services
Ross K. Robinson EMSL-Las Vegas
[illegible] Management Office

**LABORATORY: N.F.T. INC.** **CASE: 15580**

**Samples (MEM01-02, MEMQ97-99 and MEMS57-59)**

**Evidential Audit:** As was indicated in the case, the original ICP raw data for the second run and the Hg strip-chart are in case 15545. Photocopies are included in this case. All other forms are originals and in the order indicated on the DC2 form. The airbill and sample tag numbers matched the DC1 form.

**Medium level Soil Sample (MEMM01)**

**ICP Analyses:** The matrix spike recovery for Sb(31.8%) is out of control. The Sb result for sample MEMM01 is estimated(UJ) due to a possible elevated detection limit.

The matrix spike reocveries for the following were not flagged by the lab because the sample result is more than 4X the spike added: Al(1649.8%); Cr(-2469.3%); Co(-331.2%); Cu(-3595%); Fe(-2173.9%); Pb(-289.7%); Mn(-114.6%); Ni(-367%) and Zn(-154.4%). Cr, Co, Cu and Ni results are qualified below. Fe, Pb, Mn and Zn results for sample MEMM01 are acceptable.

The duplicate audits for the following are out of control and results for sample MEMM01 are estimated(J) due to poor precision: Ba(41.7%); Ca(96.6%); Co(58.4%); Cu(79.8%); Mg(98.1%) and Na(56.8%).

The duplicate audits for Cr(23.2%) and Ni(26.9%) were flagged by the lab but the technical criteria for soil(35%) was not exceeded therefore Cr and Ni results for sample MEMM01 are acceptable.

The duplicate audit for Ag(56.8%) was flagged by the lab. The duplicate diffference is less than 2X CRDL therefore the Ag result for sample MEMM01 is acceptable.

**GFAA Analyses:** The matrix spike recovery for As(37.3%) and Se(61.1%) are out of control. The As and Se results for sample MEMM01 are estimated(J) due to low bias. The duplicate audit for Se(200%) was not flagged by the lab because the duplicate difference is less than 2X CRDL.

The reviewer added a (W)flag to the Tl result for sample MEMM01 because the analytical spike is out of control. The Tl result is estimated(UJ) due to interference.

**OTHER QUALIFIERS:** The duplicate audit for Hg(27.3%) was flagged by the lab. The technical criteria for soil(35%) was not exceeded thus Hg data for sample MEMM01 is acceptable.

The matrix spike recovery for CN(72.2%) is out of control. The CN result for sample MEMM01 is estimated(J) due to low bias. The holding time for CN water samples(14 days) was exceeded by 2 days. There are no holding times established for CN soil samples

Marie L Massey 2/22/91

therefore the CN result is not qualified on this bases.

**Low level Soil Samples (MEMM02, MEMQ97-99 and MEMS57-59)**

**ICP Analyses:** The matrix spike recovery for Al(143.5), Fe(2354.1%) and Mn(345.4%) were not flagged by the lab because the sample result is more than 4X the spike added in all cases. Al, Fe and Mn results for all samples are acceptable.

**GFAA Analyses:** The As result for sample MEMS59 was flagged(W) by the lab and is estimated(J) due to interference.

The Se result for sample MEMS57 was flagged(W) by the lab and is estimated(J) due to interference. The Se result for sample MEMS58 was flagged(+) by the lab and is estimated(J) due to poor MSA correlation.

The reviewer added a (W) flag to the Tl result for sample MEMS57 because the analytical spike is out of control. The Tl result is estimated(UJ) due to interference.

**OTHER QUALIFIERS:** All Hg data are acceptable.

The holding time for CN water samples(14 days) was exceeded by 2 days. There are no holding times established for CN soil samples therefore CN results for all samples are acceptable.

Marion L Massey
2/23/91

7 low level Soil
1 Med level Soil

# QC EXCEPTION SUMMARY REPORT

CASE # 15580
DATA SET # MEM857-59
LAB Q.C.# MEMQ97-99, MEMM01-02
DATE: Feb 21, 1991

SITE Central Iron and Metal (MI)
LAB NFT
REVIEWED BY MARIA MASSEY

MATRIX: _____
CONC. : _____

WATER SAMPLE SPK. _____
WATER SAMPLE DUP. _____
SOIL SAMPLE SPK. _____
SOIL SAMPLE DUP. _____

| | OVERALL CASE QC | | | | | | | | | MATRIX SPECIFIC QC | | | | | | SAMPLE SPECIFIC QC | | FIELD QC | | | REGIONAL QC | | | OTHER/ COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Holding Time | Cal Blanks | Init Cal ver | Contin Cal ver | Prep Blk AQ | Prep Blk SOL | ICS %R | LCS % AQ | LCS % SOL | Sol Dup RPD | Sol Spk %R | AQ Dup RPD | AQ Spk %R | Ser Dilu AQ | Ser Dilu SOL | GFAA Dup | GFAA Spike | Blank | Dup RPD | Spike %R | Blind Blank | Blind Spike %R | Split Sample RPD | |
| Aluminum | | | | | | | | | 88.4 | | 143 1649.8 | | | | | | | | | | | | | |
| Antimony | | | | | | | | | | | N31.8 → 0.0 | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | 125.6 | | N37.3 | | | | | | | | | | | | | |
| Barium | | | | | | | | | | *41.7 | | | | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | | | | | 100 | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | 100 | | | | | | | | | |
| Calcium | | | | | | | | | | *96.6 | | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | *23.2 | -2469.3 | | | | 30.3 | | | | | | | | | |
| Cobalt | | | | | | | | | | *58.4 | -331.2 | | | | 100 | | | | | | | | | |
| Copper | | | | | | | | | | *79.8 | -3595 | | | | 15.2 | | | | | | | | | |
| Iron | | | | | | | | | | | -2173.9 → 2354.1 | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | -289.7 | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | *98.1 | | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | -114.6 → 345.4 | | | | | | | | | | | | | |
| Mercury | | | | | | | | | 127.6 | *27.3 | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | 85.4 | *20.9 | -367 | | | | 100 | | | | | | | | | |
| Potassium | | | | | | | | | | | | | | | 25.2 | | | | | | | | | |
| Selenium | | | | | | | | | 124.5 | | N66.1 | | | | | | | | | | | | | |
| Silver | | | | | | | | | | 200 | | | | | 35.2 | | | | | | | | | |
| Sodium | | | | | | | | | | *56.8 | | | | | 100 | | | | | | | | | |
| Thallium | | | | | | | | | 113.3 | | | | | | | | | | | | | | | |
| Tin | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | 100 | | | | | | | | | |
| Zinc | | | | | | | | | | | -154.4 → 121.9 | | | | | | | | | | | | | |
| Cyanide | | | | | | | | | | | N72.2 | | | | | | | | | | | | | |

Cu CCB123(8.0)(14.3)(6.4) CCB4(3.2)
94 & 99
Fe CCB123(10.6)(30.6)(9.6) CCB4(11.2)
CN CCB5(3.2)

Al RPD(1649.8%) SR > 4X SA + Se 58
Ca Cu Co Cu + Fe " "
Ni + Mn + Zn " "

CN Dateprep 1/03/91
Dateship 12/18
— Holding Time Exceeded

Na 99

U. S. EPA - CLP
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE



Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

SOW No.: 3/90

| EPA Sample No. | Lab Sample ID |
|---|---|
| MEMM01 | 0M11-1 |
| MEMM01D | 0M11-1D |
| MEMM01S | 0M11-1S |
| MEMM02 | 0M11-2 |
| MEMQ97 | 0M11-3 |
| MEMQ98 | 0M11-4 |
| MEMQ98D | 0M11-4D |
| MEMQ98S | 0M11-4S |
| MEMQ99 | 0M11-5 |
| MEMS57 | 0M11-6 |
| MEMS58 | 0M11-7 |
| MEMS59 | 0M11-8 |

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

Comments:

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

Signature: Ronald L. Keil Name: Ronald L. Keil

Date: 01/21/91 Title: Lab Director

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

MEMM01

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-1

Level (low/med): MED Date Received: 12/20/90

% Solids: 65.5

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5780.00 | | | P |
| 7440-36-0 | Antimony | 6.70 | U | N | P |
| 7440-38-2 | Arsenic | 15.60 | | N | F |
| 7440-39-3 | Barium | 314.00 | | * | P |
| 7440-41-7 | Beryllium | .86 | B | | P |
| 7440-43-9 | Cadmium | 10.90 | | | P |
| 7440-70-2 | Calcium | 25100.00 | | * | P |
| 7440-47-3 | Chromium | 24500.00 | | * | P |
| 7440-48-4 | Cobalt | 4480.00 | | * | P |
| 7440-50-8 | Copper | 6060.00 | | * | P |
| 7439-89-6 | Iron | 227000.00 | | | P |
| 7439-92-1 | Lead | 1300.00 | | | P |
| 7439-95-4 | Magnesium | 12100.00 | | * | P |
| 7439-96-5 | Manganese | 8630.00 | | | P |
| 7439-97-6 | Mercury | .97 | | * | CV |
| 7440-02-0 | Nickel | 11200.00 | | * | P |
| 7440-09-7 | Potassium | 502.00 | B | | P |
| 7782-49-2 | Selenium | .43 | B | N | F |
| 7440-22-4 | Silver | 5.00 | | * | P |
| 7440-23-5 | Sodium | 138.00 | B | | P |
| 7440-28-0 | Thallium | .61 | U | N UM 2/22/91 | F |
| 7440-62-2 | Vanadium | 103.00 | | | P |
| 7440-66-6 | Zinc | 1860.00 | | | P |
| | Cyanide | .68 | B | N | C |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BLACK Clarity After: Artifacts: YES

Comments:
VISIBLE ARTIFACTS: METAL CHIPS IN SAMPLE.

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEMM02

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-2

Level (low/med): LOW Date Received: 12/20/90

% 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 | 6620.00 | | | P |
| 7440-36-0 | Antimony | 20.50 | | | P |
| 7440-38-2 | Arsenic | 18.20 | | | F |
| 7440-39-3 | Barium | 332.00 | | | P |
| 7440-41-7 | Beryllium | .83 | B | | P |
| 7440-43-9 | Cadmium | 5.30 | | | P |
| 7440-70-2 | Calcium | 7060.00 | | | P |
| 7440-47-3 | Chromium | 360.00 | | | P |
| 7440-48-4 | Cobalt | 32.00 | | | P |
| 7440-50-8 | Copper | 247.00 | | | P |
| 7439-89-6 | Iron | 127000.00 | | | P |
| 7439-92-1 | Lead | 854.00 | | | P |
| 7439-95-4 | Magnesium | 2850.00 | | | P |
| 7439-96-5 | Manganese | 1220.00 | | | P |
| 7439-97-6 | Mercury | .17 | | | CV |
| 7440-02-0 | Nickel | 207.00 | | | P |
| 7440-09-7 | Potassium | 652.00 | B | | P |
| 7782-49-2 | Selenium | .41 | B | | F |
| 7440-22-4 | Silver | 1.20 | B | | P |
| 7440-23-5 | Sodium | 132.00 | B | | P |
| 7440-28-0 | Thallium | .49 | U | | F |
| 7440-62-2 | Vanadium | 49.40 | | | P |
| 7440-66-6 | Zinc | 1050.00 | | | P |
| | Cyanide | .30 | B | | C |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEMQ97

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-3

Level (low/med): LOW Date Received: 12/20/90

% Solids: 69.7

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5260.00 | | | P |
| 7440-36-0 | Antimony | 6.30 | U | | P |
| 7440-38-2 | Arsenic | 11.00 | | | F |
| 7440-39-3 | Barium | 139.00 | | | P |
| 7440-41-7 | Beryllium | 2.00 | | | P |
| 7440-43-9 | Cadmium | 1.40 | U | | P |
| 7440-70-2 | Calcium | 11300.00 | | | P |
| 7440-47-3 | Chromium | 420.00 | | | P |
| 7440-48-4 | Cobalt | 51.30 | | | P |
| 7440-50-8 | Copper | 80.60 | | | P |
| 7439-89-6 | Iron | 29000.00 | | | P |
| 7439-92-1 | Lead | 185.00 | | | P |
| 7439-95-4 | Magnesium | 2640.00 | | | P |
| 7439-96-5 | Manganese | 444.00 | | | P |
| 7439-97-6 | Mercury | .75 | | | CV |
| 7440-02-0 | Nickel | 206.00 | | | P |
| 7440-09-7 | Potassium | 603.00 | B | | P |
| 7782-49-2 | Selenium | 1.50 | | | F |
| 7440-22-4 | Silver | 1.10 | U | | P |
| 7440-23-5 | Sodium | 124.00 | B | | P |
| 7440-28-0 | Thallium | .57 | U | | F |
| 7440-62-2 | Vanadium | 18.70 | | | P |
| 7440-66-6 | Zinc | 318.00 | | | P |
| | Cyanide | .85 | | | C |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BLACK Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEMQ98

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-4

Level (low/med): LOW Date Received: 12/20/90

% Solids: 66.6

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6480.00 | | | P |
| 7440-36-0 | Antimony | 6.60 | U | | P |
| 7440-38-2 | Arsenic | 9.50 | | | F |
| 7440-39-3 | Barium | 617.00 | | | P |
| 7440-41-7 | Beryllium | .88 | B | | P |
| 7440-43-9 | Cadmium | 1.90 | | | P |
| 7440-70-2 | Calcium | 8470.00 | | | P |
| 7440-47-3 | Chromium | 23.70 | | | P |
| 7440-48-4 | Cobalt | 8.30 | B | | P |
| 7440-50-8 | Copper | 31.40 | | | P |
| 7439-89-6 | Iron | 15600.00 | | | P |
| 7439-92-1 | Lead | 776.00 | | | P |
| 7439-95-4 | Magnesium | 1600.00 | | | P |
| 7439-96-5 | Manganese | 992.00 | | | P |
| 7439-97-6 | Mercury | .08 | U | | CV |
| 7440-02-0 | Nickel | 26.70 | | | P |
| 7440-09-7 | Potassium | 731.00 | B | | P |
| 7782-49-2 | Selenium | 1.30 | B | | F |
| 7440-22-4 | Silver | 1.20 | U | | P |
| 7440-23-5 | Sodium | 338.00 | B | | P |
| 7440-28-0 | Thallium | .60 | U | | F |
| 7440-62-2 | Vanadium | 16.10 | | | P |
| 7440-66-6 | Zinc | 436.00 | | | P |
| | Cyanide | .53 | B | | C |

Color Before: BLACK Clarity Before: Texture: MED

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEMQ99

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-5

Level (low/med): LOW Date Received: 12/20/90

% Solids: 86.8

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6450.00 | | | P |
| 7440-36-0 | Antimony | 5.10 | U | | P |
| 7440-38-2 | Arsenic | 20.50 | | | F |
| 7440-39-3 | Barium | 92.80 | | | P |
| 7440-41-7 | Beryllium | .62 | B | | P |
| 7440-43-9 | Cadmium | 1.20 | U | | P |
| 7440-70-2 | Calcium | 4540.00 | | | P |
| 7440-47-3 | Chromium | 726.00 | | | P |
| 7440-48-4 | Cobalt | 86.80 | | | P |
| 7440-50-8 | Copper | 32.90 | | | P |
| 7439-89-6 | Iron | 20900.00 | | | P |
| 7439-92-1 | Lead | 60.10 | | | P |
| 7439-95-4 | Magnesium | 2540.00 | | | P |
| 7439-96-5 | Manganese | 507.00 | | | P |
| 7439-97-6 | Mercury | .06 | U | | CV |
| 7440-02-0 | Nickel | 512.00 | | | P |
| 7440-09-7 | Potassium | 528.00 | B | | P |
| 7782-49-2 | Selenium | .55 | B | | F |
| 7440-22-4 | Silver | .98 | B | | P |
| 7440-23-5 | Sodium | 41.50 | U | | P |
| 7440-28-0 | Thallium | .46 | U | | F |
| 7440-62-2 | Vanadium | 20.40 | | | P |
| 7440-66-6 | Zinc | 62.20 | | | P |
| | Cyanide | .20 | B | | C |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEMS57

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-6

Level (low/med): LOW Date Received: 12/20/90

% Solids: 73.7

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5060.00 | | | P |
| 7440-36-0 | Antimony | 6.00 | U | | P |
| 7440-38-2 | Arsenic | 10.90 | | | F |
| 7440-39-3 | Barium | 286.00 | | | P |
| 7440-41-7 | Beryllium | .86 | B | | P |
| 7440-43-9 | Cadmium | 15.10 | | | P |
| 7440-70-2 | Calcium | 14400.00 | | | P |
| 7440-47-3 | Chromium | 18000.00 | | | P |
| 7440-48-4 | Cobalt | 2450.00 | | | P |
| 7440-50-8 | Copper | 719.00 | | | P |
| 7439-89-6 | Iron | 204000.00 | | | P |
| 7439-92-1 | Lead | 845.00 | | | P |
| 7439-95-4 | Magnesium | 4840.00 | | | P |
| 7439-96-5 | Manganese | 5990.00 | | | P |
| 7439-97-6 | Mercury | 3.60 | | | CV |
| 7440-02-0 | Nickel | 7930.00 | | | P |
| 7440-09-7 | Potassium | 472.00 | B | | P |
| 7782-49-2 | Selenium | .92 | B | W | F |
| 7440-22-4 | Silver | 3.50 | | | P |
| 7440-23-5 | Sodium | 238.00 | B | | P |
| 7440-28-0 | Thallium | .54 | U | WHM 2/22/91 | F |
| 7440-62-2 | Vanadium | 91.90 | | | P |
| 7440-66-6 | Zinc | 1910.00 | | | P |
| | Cyanide | .81 | | | C |

Color Before: BROWN Clarity Before: Texture: MED

Color After: GREEN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMS58

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-7

Level (low/med): LOW Date Received: 12/20/90

% Solids: 80.9

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10000.00 | | | P |
| 7440-36-0 | Antimony | 5.40 | U | | P |
| 7440-38-2 | Arsenic | 26.40 | | | F |
| 7440-39-3 | Barium | 187.00 | | | P |
| 7440-41-7 | Beryllium | .82 | B | | P |
| 7440-43-9 | Cadmium | 6.70 | | | P |
| 7440-70-2 | Calcium | 24300.00 | | | P |
| 7440-47-3 | Chromium | 11000.00 | | | P |
| 7440-48-4 | Cobalt | 382.00 | | | P |
| 7440-50-8 | Copper | 39400.00 | | | P |
| 7439-89-6 | Iron | 223000.00 | | | P |
| 7439-92-1 | Lead | 1190.00 | | | P |
| 7439-95-4 | Magnesium | 5950.00 | | | P |
| 7439-96-5 | Manganese | 3580.00 | | | P |
| 7439-97-6 | Mercury | 1.70 | | | CV |
| 7440-02-0 | Nickel | 7570.00 | | | P |
| 7440-09-7 | Potassium | 584.00 | B | | P |
| 7782-49-2 | Selenium | 1.60 | | + | F |
| 7440-22-4 | Silver | 6.60 | | | P |
| 7440-23-5 | Sodium | 103.00 | B | | P |
| 7440-28-0 | Thallium | .49 | U | | F |
| 7440-62-2 | Vanadium | 80.20 | | | P |
| 7440-66-6 | Zinc | 1730.00 | | | P |
| | Cyanide | .64 | | | C |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: GREEN Clarity After: Artifacts: YES

Comments:
VISIBLE ARTIFACTS: METAL CHIPS SIMILAR TO SAMPLE 0M11-1 (MEMM01)

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EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEMS59

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (soil/water): SOIL Lab Sample ID: 0M11-8

Level (low/med): LOW Date Received: 12/20/90

% Solids: 78.4

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5000.00 | | | P |
| 7440-36-0 | Antimony | 5.60 | U | | P |
| 7440-38-2 | Arsenic | 23.20 | | W | F |
| 7440-39-3 | Barium | 84.80 | | | P |
| 7440-41-7 | Beryllium | .78 | B | | P |
| 7440-43-9 | Cadmium | 3.80 | | | P |
| 7440-70-2 | Calcium | 6830.00 | | | P |
| 7440-47-3 | Chromium | 4490.00 | | | P |
| 7440-48-4 | Cobalt | 821.00 | | | P |
| 7440-50-8 | Copper | 167.00 | | | P |
| 7439-89-6 | Iron | 77100.00 | | | P |
| 7439-92-1 | Lead | 179.00 | | | P |
| 7439-95-4 | Magnesium | 2850.00 | | | P |
| 7439-96-5 | Manganese | 762.00 | | | P |
| 7439-97-6 | Mercury | .24 | | | CV |
| 7440-02-0 | Nickel | 4070.00 | | | P |
| 7440-09-7 | Potassium | 419.00 | B | | P |
| 7782-49-2 | Selenium | 4.30 | | S | F |
| 7440-22-4 | Silver | 1.00 | U | | P |
| 7440-23-5 | Sodium | 82.30 | B | | P |
| 7440-28-0 | Thallium | .51 | U | | F |
| 7440-62-2 | Vanadium | 27.30 | | | P |
| 7440-66-6 | Zinc | 114.00 | | | P |
| | Cyanide | .40 | B | | C |

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: Artifacts:

Comments:

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3
BLANKS

Lab name: N.F.T. INC. Contract: 68-D0-0145

Lab code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 31.0 | U | 31.0 | U | 31.0 | U | 31.0 | U | 6.200 | U | P |
| Antimony | 22.0 | U | 22.0 | U | 22.0 | U | 22.0 | U | 4.400 | U | P |
| Arsenic | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | .200 | U | F |
| Barium | 2.0 | U | 2.0 | U | 2.4 | B | 2.0 | U | .400 | U | P |
| Beryllium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | .400 | U | P |
| Cadmium | 5.0 | U | 5.0 | U | 5.0 | U | 5.0 | U | 1.000 | U | P |
| Calcium | 28.0 | U | 28.0 | U | 28.0 | U | -30.8 | B | 5.600 | U | P |
| Chromium | 7.0 | U | 7.0 | U | 7.0 | U | 7.0 | U | 1.400 | U | P |
| Cobalt | 6.0 | U | 6.0 | U | 6.5 | B | 6.0 | U | 1.200 | U | P |
| Copper | 3.0 | U | 8.0 | B | 14.3 | B | 6.4 | B | .600 | U | P |
| Iron | 9.0 | U | 10.6 | B | 30.6 | B | 9.6 | B | 1.800 | U | P |
| Lead | 28.0 | U | 28.0 | U | 28.0 | U | 28.0 | U | 5.600 | U | P |
| Magnesium | 16.0 | U | 16.0 | U | 16.0 | U | 16.0 | U | 3.200 | U | P |
| Manganese | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | .400 | U | P |
| Mercury | .2 | U | .2 | U | .2 | U | .2 | U | .100 | U | CV |
| Nickel | 18.0 | U | 18.0 | U | 18.0 | U | 18.0 | U | 3.600 | U | P |
| Potassium | 341.0 | U | 341.0 | U | 341.0 | U | 341.0 | U | 68.200 | U | P |
| Selenium | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | .200 | U | F |
| Silver | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | .800 | U | P |
| Sodium | 180.0 | U | 180.0 | U | 180.0 | U | 180.0 | U | 36.000 | U | P |
| Thallium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | -.400 | B | F |
| Vanadium | 5.0 | U | 5.0 | U | 5.0 | U | 5.0 | U | 1.000 | U | P |
| Zinc | 8.0 | U | 8.0 | U | 8.0 | U | 8.0 | U | 1.600 | U | P |
| Cyanide | 3.0 | U | 3.0 | U | 3.0 | U | | | .150 | U | C |

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3
BLANKS

Lab name: N.F.T. INC. Contract: 68-D0-0145

Lab code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | 31.0 | U | | | | | | | P |
| Antimony | | | 22.0 | U | | | | | | | P |
| Arsenic | | | 1.0 | U | 1.0 | U | | | | | F |
| Barium | | | 2.0 | U | | | | | | | P |
| Beryllium | | | 2.0 | U | | | | | | | P |
| Cadmium | | | 5.0 | U | | | | | | | P |
| Calcium | | | 28.0 | U | | | | | | | P |
| Chromium | | | 7.0 | U | | | | | | | P |
| Cobalt | | | 6.0 | U | | | | | | | P |
| Copper | | | 3.2 | B | | | | | | | P |
| Iron | | | 11.2 | B | | | | | | | P |
| Lead | | | 28.0 | U | | | | | | | P |
| Magnesium | | | 16.0 | U | | | | | | | P |
| Manganese | | | 2.0 | U | | | | | | | P |
| Mercury | | | | | | | | | | | NR |
| Nickel | | | 18.0 | U | | | | | | | P |
| Potassium | | | 341.0 | U | | | | | | | P |
| Selenium | | | 1.0 | U | 1.0 | U | | | | | F |
| Silver | | | 4.0 | U | | | | | | | P |
| Sodium | | | 180.0 | U | | | | | | | P |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | 5.0 | U | | | | | | | P |
| Zinc | | | 8.0 | U | | | | | | | P |
| Cyanide | 3.0 | U | 3.2 | B | 3.2 | B | | | .150 | U | C |

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3
BLANKS

Lab name: N.F.T. INC. Contract: 68-D0-0145

Lab code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | -34.7 | B | -53.4 | B | | | | | | | P |
| Antimony | 22.0 | U | 22.0 | U | | | | | | | P |
| Arsenic | 1.0 | U | 1.0 | U | | | | | | | F |
| Barium | 2.0 | U | 2.0 | U | | | | | | | P |
| Beryllium | 2.0 | U | 2.0 | U | | | | | | | P |
| Cadmium | 5.0 | U | 5.0 | U | | | | | | | P |
| Calcium | -46.7 | B | -72.9 | B | | | | | | | P |
| Chromium | 7.0 | U | 7.0 | U | | | | | | | P |
| Cobalt | 6.0 | U | 6.0 | U | | | | | | | P |
| Copper | 3.0 | U | 3.0 | U | | | | | | | P |
| Iron | 9.0 | U | 9.0 | U | | | | | | | P |
| Lead | | | | | | | | | | | NR |
| Magnesium | 16.0 | U | 16.0 | U | | | | | | | P |
| Manganese | 2.0 | U | 2.0 | U | | | | | | | P |
| Mercury | | | | | | | | | | | NR |
| Nickel | 18.0 | U | 18.0 | U | | | | | | | P |
| Potassium | 341.0 | U | -357.4 | B | | | | | | | P |
| Selenium | 1.0 | U | 1.0 | U | | | | | | | F |
| Silver | 4.0 | U | 4.0 | U | | | | | | | P |
| Sodium | 180.0 | U | 180.0 | U | | | | | | | P |
| Thallium | | | | | | | | | | | NR |
| Vanadium | 5.0 | U | 5.0 | U | | | | | | | P |
| Zinc | 8.0 | U | 8.0 | U | | | | | | | P |
| Cyanide | 3.0 | U | 3.0 | U | | | | | .150 | U | C |

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEMM01S

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix: SOIL Level (low/med): MED

% Solids for Sample: 65.5

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

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | 15853.0168 | | 5777.8260 | | 610.69 | 1649.8 | | P |
| Antimony | 75-125 | 48.5221 | | 6.7176 | U | 152.67 | 31.8 | N | P |
| Arsenic | 75-125 | 20.1221 | | 15.5725 | | 12.21 | 37.3 | N | F |
| Barium | 75-125 | 909.6153 | | 314.3573 | | 610.69 | 97.5 | | P |
| Beryllium | 75-125 | 15.6824 | | .8580 | B | 15.27 | 97.1 | | P |
| Cadmium | 75-125 | 23.3771 | | 10.8885 | | 15.27 | 81.8 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | | 23016.4672 | | 24524.4733 | | 61.07 | -2469.3 | | P |
| Cobalt | | 3978.9008 | | 4484.5038 | | 152.67 | -331.2 | | P |
| Copper | | 3318.1740 | | 6062.5649 | | 76.34 | -3595.0 | | P |
| Iron | | 220196.7328 | | 226834.5649 | | 305.34 | -2173.9 | | P |
| Lead | | 857.0290 | | 1299.2672 | | 152.67 | -289.7 | | P |
| Magnesium | | | | | | | | | NR |
| Manganese | | 8456.2321 | | 8631.1573 | | 152.67 | -114.6 | | P |
| Mercury | 75-125 | 2.6237 | | .9672 | | 1.53 | 108.3 | | CV |
| Nickel | | 10601.5450 | | 11161.8015 | | 152.67 | -367.0 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 2.2901 | | .4275 | B | 3.05 | 61.1 | N | F |
| Silver | 75-125 | 17.2947 | | 5.0382 | | 15.27 | 80.3 | | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 14.5954 | | .6107 | U | 15.27 | 95.6 | | F |
| Vanadium | 75-125 | 243.2153 | | 103.0840 | | 152.67 | 91.8 | | P |
| Zinc | | 1624.6931 | | 1860.4153 | | 152.67 | -154.4 | | P |
| Cyanide | 75-125 | 28.2537 | | .6824 | B | 38.17 | 72.2 | N | C |

Comments:

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEMQ98S

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 66.6

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

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | 7343.0661 | | 6484.4895 | | 600.60 | 143.0 | | P |
| Antimony | 75-125 | 125.4474 | | 6.6066 | U | 150.15 | 83.5 | | P |
| Arsenic | 75-125 | 19.1892 | | 9.4895 | | 12.01 | 80.8 | | F |
| Barium | 75-125 | 1228.8559 | | 617.0691 | | 600.60 | 101.9 | | P |
| Beryllium | 75-125 | 15.3574 | | .8799 | B | 15.02 | 96.4 | | P |
| Cadmium | 75-125 | 15.0931 | | 1.9489 | | 15.02 | 87.5 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 82.2853 | | 23.7087 | | 60.06 | 97.5 | | P |
| Cobalt | 75-125 | 156.6727 | | 8.3303 | B | 150.15 | 98.8 | | P |
| Copper | 75-125 | 109.0871 | | 31.3664 | | 75.08 | 103.5 | | P |
| Iron | | 22709.9429 | | 15640.4444 | | 300.30 | 2354.1 | | P |
| Lead | | 945.2132 | | 775.6727 | | 150.15 | 112.9 | | P |
| Magnesium | | | | | | | | | NR |
| Manganese | | 1510.9880 | | 992.4144 | | 150.15 | 345.4 | | P |
| Mercury | 75-125 | 1.7387 | | .0751 | U | 1.50 | 115.9 | | CV |
| Nickel | 75-125 | 169.8649 | | 26.7387 | | 150.15 | 95.3 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 4.6547 | | 1.2913 | B | 3.00 | 112.1 | | F |
| Silver | 75-125 | 13.5766 | | 1.2012 | U | 15.02 | 90.4 | | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 14.2643 | | .6006 | U | 15.02 | 95.0 | | F |
| Vanadium | 75-125 | 166.4054 | | 16.0751 | | 150.15 | 100.1 | | P |
| Zinc | 75-125 | 618.7688 | | 435.7237 | | 150.15 | 121.9 | | P |
| Cyanide | | | | | | | | | NR |

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEMM01A

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix: SOIL Level (low/med): MED

Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | 22.00 | U | 22.00 | U | 120.0 | 0.0 | | P |
| 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 | | | | | | | | | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | 30.92 | | 8.94 | B | 20.0 | 109.9 | | C |

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MEMM01D

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (water/soil): SOIL Level (low/med): MED

% Solids for Sample: 65.5 % Solids for Duplicate: 69.5

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | %RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 5777.8260 | | 5972.5985 | | 3.3 | | P |
| Antimony | | 6.7176 | U | 6.7176 | U | | | P |
| Arsenic | | 15.5725 | | 17.3740 | | 10.9 | | F |
| Barium | | 314.3573 | | 480.0000 | | 41.7 | * | P |
| Beryllium | | .8580 | B | .6412 | B | 28.9 | | P |
| Cadmium | | 10.8885 | | 9.8992 | | 9.5 | | P |
| Calcium | | 25114.7084 | | 8749.8015 | | 96.6 | * | P |
| Chromium | | 24524.4733 | | 19426.5496 | | 23.2 | * | P |
| Cobalt | | 4484.5038 | | 2457.2824 | | 58.4 | * | P |
| Copper | | 6062.5649 | | 14106.4916 | | 79.8 | * | P |
| Iron | | 226834.5649 | | 197029.9084 | | 14.1 | | P |
| Lead | | 1299.2672 | | 1542.9496 | | 17.1 | | P |
| Magnesium | 1526.7 | 12057.4809 | | 4122.0702 | | 98.1 | * | P |
| Manganese | | 8631.1573 | | 7242.9802 | | 17.5 | | P |
| Mercury | .2 | .9672 | | 1.2725 | | 27.3 | * | CV |
| Nickel | | 11161.8015 | | 8518.4244 | | 26.9 | * | P |
| Potassium | | 501.6458 | B | 497.3832 | B | .9 | | P |
| Selenium | | .4275 | B | .3053 | U | 200.0 | | F |
| Silver | 3.1 | 5.0382 | | 9.0351 | | 56.8 | * | P |
| Sodium | | 137.9969 | B | 249.1328 | B | 57.4 | | P |
| Thallium | | .6107 | U | .6107 | U | | | F |
| Vanadium | | 103.0840 | | 88.7756 | | 14.9 | | P |
| Zinc | | 1860.4153 | | 1767.2824 | | 5.1 | | P |
| Cyanide | | .6824 | B | .7665 | | 11.6 | | C |

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6
DUPLICATES

EPA SAMPLE NO.

MEMQ98D

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

Matrix (water/soil): SOIL Level (low/med): LOW

% Solids for Sample: 66.6 % Solids for Duplicate: 67.0

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

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | %RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 6484.4895 | | 6909.4655 | | 6.3 | | P |
| Antimony | | 6.6066 | U | 6.6066 | U | | | P |
| Arsenic | 3.0 | 9.4895 | | 9.2192 | | 2.9 | | F |
| Barium | | 617.0691 | | 683.6066 | | 10.2 | | P |
| Beryllium | | .8799 | B | .8619 | B | 2.1 | | P |
| Cadmium | 1.5 | 1.9489 | | 1.5465 | | 23.0 | | P |
| Calcium | | 8468.4685 | | 9218.7207 | | 8.5 | | P |
| Chromium | | 23.7087 | | 25.7688 | | 8.3 | | P |
| Cobalt | | 8.3303 | B | 11.3544 | B | 30.7 | | P |
| Copper | 7.5 | 31.3664 | | 32.0841 | | 2.3 | | P |
| Iron | | 15640.4444 | | 12887.3093 | | 19.3 | | P |
| Lead | | 775.6727 | | 853.3544 | | 9.5 | | P |
| Magnesium | 1501.5 | 1600.8018 | | 1618.5616 | | 1.1 | | P |
| Manganese | | 992.4144 | | 1124.0450 | | 12.4 | | P |
| Mercury | | .0751 | U | .0751 | U | | | CV |
| Nickel | 12.0 | 26.7387 | | 24.2102 | | 9.9 | | P |
| Potassium | | 731.2102 | B | 782.3273 | B | 6.8 | | P |
| Selenium | | 1.2913 | B | 1.2913 | B | 0.0 | | F |
| Silver | | 1.2012 | U | 1.2012 | U | | | P |
| Sodium | | 338.2883 | B | 271.3093 | B | 22.0 | | P |
| Thallium | | .6006 | U | .6006 | U | | | F |
| Vanadium | 15.0 | 16.0751 | | 17.6126 | | 9.1 | | P |
| Zinc | | 435.7237 | | 442.8769 | | 1.6 | | P |
| Cyanide | | | | | | | | NR |

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10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

ICP ID Number: TJA ICAP-61 Date: 11/09/90

Flame AA ID Number:

Furnace AA ID Number:

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | 308.22 | | 200 | 31.0 | P |
| Antimony | 206.84 | | 60 | 22.0 | P |
| Arsenic | | | 10 | | NR |
| Barium | 493.41 | | 200 | 2.0 | P |
| Beryllium | 313.04 | | 5 | 2.0 | P |
| Cadmium | 228.80 | | 5 | 5.0 | P |
| Calcium | 317.93 | | 5000 | 28.0 | P |
| Chromium | 267.72 | | 10 | 7.0 | P |
| Cobalt | 228.80 | | 50 | 6.0 | P |
| Copper | 324.75 | | 25 | 3.0 | P |
| Iron | 259.94 | | 100 | 9.0 | P |
| Lead | 220.35 | | 3 | 28.0 | P |
| Magnesium | 279.08 | | 5000 | 16.0 | P |
| Manganese | 257.61 | | 15 | 2.0 | P |
| Mercury | | | 0.2 | | NR |
| Nickel | 231.60 | | 40 | 18.0 | P |
| Potassium | 766.49 | | 5000 | 341.0 | P |
| Selenium | | | 5 | | NR |
| Silver | 328.07 | | 10 | 4.0 | P |
| Sodium | 589.00 | | 5000 | 180.0 | P |
| Thallium | | | 10 | | NR |
| Vanadium | 292.40 | | 50 | 5.0 | P |
| Zinc | 213.86 | | 20 | 8.0 | P |

Comments:

U.S. EPA - CLP

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

ICP ID Number: Date: 11/01/90

Flame AA ID Number:

Furnace AA ID Number: PE Z5100

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | | | 200 | | NR |
| Antimony | | | 60 | | NR |
| Arsenic | 193.70 | BZ | 10 | 1.0 | F |
| Barium | | | 200 | | NR |
| Beryllium | | | 5 | | NR |
| Cadmium | | | 5 | | NR |
| Calcium | | | 5000 | | NR |
| Chromium | | | 10 | | NR |
| Cobalt | | | 50 | | NR |
| Copper | | | 25 | | NR |
| Iron | | | 100 | | NR |
| Lead | | | 3 | | NR |
| Magnesium | | | 5000 | | NR |
| Manganese | | | 15 | | NR |
| Mercury | | | 0.2 | | NR |
| Nickel | | | 40 | | NR |
| Potassium | | | 5000 | | NR |
| Selenium | 196.00 | BZ | 5 | 1.0 | F |
| Silver | | | 10 | | NR |
| Sodium | | | 5000 | | NR |
| Thallium | 276.80 | BZ | 10 | 2.0 | F |
| Vanadium | | | 50 | | NR |
| Zinc | | | 20 | | NR |

Comments:

U.S. EPA - CLP

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: N.F.T. INC. Contract: 68-D0-0145

Lab Code: NFT Case No.: 15580 SAS No.: SDG No.: MEMM01

ICP ID Number: Date: 10/25/90

Flame AA ID Number: FISHER HG-3

Furnace AA ID Number:

| Analyte | Wave-length (nm) | Back ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | | | 200 | | NR |
| Antimony | | | 60 | | NR |
| Arsenic | | | 10 | | NR |
| Barium | | | 200 | | NR |
| Beryllium | | | 5 | | NR |
| Cadmium | | | 5 | | NR |
| Calcium | | | 5000 | | NR |
| Chromium | | | 10 | | NR |
| Cobalt | | | 50 | | NR |
| Copper | | | 25 | | NR |
| Iron | | | 100 | | NR |
| Lead | | | 3 | | NR |
| Magnesium | | | 5000 | | NR |
| Manganese | | | 15 | | NR |
| Mercury | 253.70 | | 0.2 | .1 | CV |
| Nickel | | | 40 | | NR |
| Potassium | | | 5000 | | NR |
| Selenium | | | 5 | | NR |
| Silver | | | 10 | | NR |
| Sodium | | | 5000 | | NR |
| Thallium | | | 10 | | NR |
| Vanadium | | | 50 | | NR |
| Zinc | | | 20 | | NR |

Comments:

3/27/91

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 4/8/91

SUBJECT: Review of Region V CLP Data Received for Review on February 20, 1991

FROM: Curtis Ross, Director (ESCRL) Central Regional Laboratory Patrick J. Chunlla for

TO: Data User: FIT

4/11/91

We have reviewed the data for the following case(s).

SITE NAME: CENTRAL IRON & METAL (MI) SMO Case No. 15811

EPA Data Set No. _____ No. of Samples: 7 D.U./Activity Numbers TFA/TFA102

CRL No. 91FS37S33 - S37, D33 91FS04R38

SMO Traffic No. ENA18 - 23, 25

CLP Laboratory: HAZLETON Hrs. Required for Review: 10+2=12 w/ wilson

Following are our findings.

The laboratory recieved seven (7) samples for full organic analysis. The sample were recieved in Good Condition on January 30 and 31, 1991.

All samples met Extraction and analysis holding time.

A large number of calibration outliers were noted in the SVOA Analysis

The reviewer comments and findings are included in the following pages

Zujad Rajh
3-18-91

( ) Data are acceptable for use.
(✓) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Dr. Alfred Haeberer/Joan Fisk/Gary Ward, EPA Support Services
Ross K. Robson EMSL-Las Vegas
[illegible] Management Office

CONTRACTOR: HAZLETON CASE 15811

Narrative

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

1. HOLDING TIMES:

The laboratory received a total of seven (7) water samples on the 30th and 31st of January 1991. The samples were received in good condition for full organic analysis.

All water samples were analyzed for VOA within the fourteen (14) days holding time criteria for water.

All water samples were extracted for SVOA and Pesticide/PCBs within the seven (7) days holding time criteria for water.

All SVOA and Pesticide/PCBs were analyzed within the forty (40) days from date of extraction required by the holding time protocol.

2. GC/MS TUNING AND GC PERFORMANCE:

GC/MS tuning complied with the mass list and ion abundance criteria for BFB and DFTPP.

DBC retention time met the QC required retention time (>12 minutes) criteria for both the primary column.

DDT and Endrin degradation check using evaluation mix B of the quantitation column were acceptable (<20%).

RT shift of DBC on primary columns met QC criteria for packed columns. No confirmation analysis was needed or reported.

3. CALIBRATION:

Initial and continuing calibration of VOA and SVOA standards were evaluated for the target compound list (TCL) and outliers were recorded on the outlier forms included as part of this

Reviewed by: Ziyad A. Rajabi ZAR
Phone: (312) 886-2919
Date: March 18, 1991

narrative. 2 compounds were labeled (R) "Unusable" for the semivolatile calibration performed on 2/1/91 due to low response factor (<0.05). In addition, a considerable number of semivolatile compounds (13) were outside the %D for continuing calibration performed on 2/6/91.

Linearity check of pesticide standards based on calibration factor (CF) of evaluation mix A,B,C were within 10 % RSD on the primary column.

The %D on continuing calibration met 15% criteria for the primary column.

4. METHOD BLANK:

VBLK51 and VBLK53 are the low level VOA method blanks. VBLK51 contained no TCLs or TICs. VBLK53 contained Acetone and no TICs. Acetone is a common laboratory contaminant. The presence Acetone in any of the associated samples is flagged as non-detect (U) when sample result is less than (<) 10x the blank result. All VOA blanks and samples contained 1 unreported peak (approx. 36 scans) at the beginning of the chromatogram. The two peaks were labeled as CO2 but no spectra were provided.

SBLK29 and SBLK32 are the low level semi-volatile method blanks. SBLK29 and SBLK32 contained no TCLs and no TICs.

PBLK-1 is the pesticide method blanks. No pesticide residue were present in the blanks.

5. SURROGATE RECOVERY:

All water surrogates for VOA SVOA and pesticides met QC criteria.

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND RPD:

Sample ENA20 was used as the water spike for low level VOA, SVOA and Pesticide samples. Water VOA and pesticides matrix spike, matrix spike duplicate recovery and %RPDs met all QC

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Phone: (312) 886-2919
Date: March 18, 1991

criteria. Water SVOA matrix spike, matrix spike duplicate recovery and %RPDs met all QC criteria except for high %RPD in the case of 4-Nitrophenol.

7. FIELD BLANK AND FIELD DUPLICATE:

ENA18 and ENA19 are the field duplicates. ENA25 is the field blank designated in this data case.

8. INTERNAL STANDARDS:

All VOA SVOA internal standard areas and RTs met QC criteria.

All %D for Pesticide/PCB standards met QC criteria.

9. COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

All VOA, SVOA, Pesticide/PCBs quantitative results were properly reported. The CRQLs were adjusted to reflect all sample dilutions.

10. COMPOUND IDENTIFICATION :

Target compounds and TICs were identified by "best fit" library search method therefore results are acceptable.

11. SYSTEM PERFORMANCE:

VOA, SVOA GC/MS, and Pesticides GC baseline indicated acceptable performance.

12. OVERALL CASE ASSESSMENT:

VOA water sample ENA18 contained 1 TCL and no TICs. Sample ENA19 contained 1 TCL and no TICs. Sample ENA20 contained 1 TCL and no TICs. Sample ENA21 contained no TCLs and no TICs. Sample

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Date: March 18, 1991

ENA22 contained 4 TCLs and no TICs. Sample ENA23 contained no TCLs and 1 TIC. Sample ENA25 contained 1 TCL and no TICs.

SVOA water sample ENA18 contained no TCLs and no TICs. Sample ENA19 contained no TCLs and no TICs. Sample ENA20 contained no TCLs and 3 TICs. Sample ENA21 contained no TCLs and 1 TIC. Sample ENA22 contained no TCLs and no TICs. Sample ENA23 contained 1 TCLs and no TICs. Sample ENA25 contained no TCL and no TICs.

Pesticides samples contained no TCLs.

This reviewer found no additional case problems to be noted.

Reviewed by: Ziyad A. Rajabi
Phone: (312) 886-2919
Date: March 18, 1991

# CALIBRATION OUTLIERS
## VOLATILE HSL COMPOUNDS

CASE/SAS # 15811 CONTRACTOR Hazleton

| Instrument # Incos50A | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 12/12/90 | | | 2/1/91 1320 | | | 2/4/91 1311 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | .823 | | | | | | .501 | 39.1 | J | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | | | | | | | | | | | | | | | |
| Carbon Disulfide | 3.583 | | | | | | 2.626 | 26.7 | J | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | .347 | | | .496 | 42.9 | J | | | | | | | | | |
| 2-Hexanone | .355 | | | .531 | 49.6 | J | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | .421 | | | .584 | 38.7 | J | .550 | 30.6 | J | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |
| (SS) 1,2-Dichloroethane-D4 | 2.212 | | | | | | 2.777 | 25.5 | J | | | | | | |

AFFECTED SAMPLES:

Reviewer's Initials/Date: ZR 3-18-91

* These flags should be applied to the analytes on the sample data sheets.

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 15811 CONTRACTOR Hazleton

| Instrument # INCOS51B | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 10/09/90 | | | 2/01/91 1822 | | | 2/06/91 838 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | - | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | .664 | | | .835 | 25.8 | J | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | 3.492 | | | | | | 2.315 | 33.7 | J | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | 1.741 | | | | | | 1.146 | 34.2 | J | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | .770 | | | | | | .554 | 28.1 | J | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | .340 | | | .087 | 74.4 | J | ~~.087~~ | ~~74.4~~ | ~~J~~ | ZR | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | .466 | | | .326 | 30.0 | J | .188 | 59.7 | J | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | -- | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | .640 | | | | | | .288 | 55.0 | J | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | .371 | | | .044 | 88.1 | R | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | .165 | | | .110 | 33.3 | J | .108 | 34.6 | J | | | | | | |
| 4-Nitrophenol | .165 | | | | | | .110 | 33.3 | J | | | | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| | | |
|---|---|---|
| SBLK29 | SBLK32 | |
| ENA 18 | ENA23 | |
| ENA 19 | | |
| ENA 20 | | |
| ENA 20MS | | |
| ENA 20MSD | | |
| ENA 21 | | |
| ENA22 | | |
| ENA25 | | |

Reviewer Initials/Date: ZR 3-18-91

* These flags should be applied to the analytes on the sample data sheets.

# CALIBRATION OUTLIERS
## SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 15811 CONTRACTOR Hazleton

| Instrument # INCOS5IB | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 10/09/90 | | | 2/01/91 1872 | | | 2/06/91 838 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | - | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | .356 | | | | | | .267 | 25.0 | J | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | .297 | | | .112 | 62.3 | J | | | | | | | | | |
| 4,6-Dinitro-2-Methylphenol | .145 | | | | | | .107 | 26.2 | J | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | .003 | | | | | | .663 | 33.9 | J | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | 1.295 | | | | | | 0.897 | 30.7 | J | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | | | | | | | | | | | | | | | |
| Dibenz(a,h)Anthracene | | | | | | | | | | | | | | | |
| Benzo(g,h,i) Perylene | | | | | | | | | | | | | | | |
| 3,3' Dichlorobenzidine | .128 | | | .041 | 68.0 | R | .214 | 71.1 | J | | | | | | |
| Nitrobenzene-d5 | .493 | | | | | | .311 | 36.9 | J | | | | | | |
| 2,4,6 Tribromophenol | .245 | | | | | | .171 | 30.2 | J | | | | | | |

ZR 3-18-91

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: [illegible] 3-18-91

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 1/14/91 FIT Receipt Date 2/20/91 Review Completed 3/28/91

TO: B. Slaughter
FROM: C. Kouros
SUBJECT: Central Iron & Metal
PAN: MI0358SB (1 hour charged for review) Case # 15580

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # 8 | Low Soil | # | Low Soil |
| | Low Water | | Low Water |
| | Drinking Water | | Drinking Water |
| | Other | | Other |

Project Data Status _____ Completed!!

✓ Incomplete, awaiting org low water, inorg Soil & Water

FIT Data Review Findings:

***Check Data Sheets for Transcription Errors***

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 9 Page No. _____ Date Sampled 12/8/90

0759:2

recycled paper

2/12 Page 1 of 10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 2/19/91

2/20

SUBJECT: Review of Region V CLP Data
Received for Review on Jan 14, 1991

FROM: Curtis Ross, Director (ESCRL) Patrick J. Churilla for
Central Regional Laboratory

TO: Data User: Pit

We have reviewed the data for the following case(s).

SITE NAME: Central Iron + Metal (MI) SMO Case No. 15580

EPA Data Set No. _____ No. of Samples: 8 D.U./Activity Numbers 1

CRL No. _____

SMO Traffic No. ENA12-16 ENB73-78

CLP Laboratory: Gulf Hrs. Required for Review: 10 + 2 = 12 wks

Following are our findings.

THIS DATA REVIEW IS FOR THE ANALYSIS OF 8 SOILS FOR VOA, S-VOA AND PESTICIDE/PCB. THERE WERE NO MAJOR PROBLEMS WHICH WOULD CAUSE THE DATA TO BE CALLED UNUSABLE. HOWEVER, THERE ARE SEVERAL POINTS WHICH ARE OF IMPORTANCE TO BE DISCUSSED IN THE FOLLOWING NARRATIVE.

Robert Kathy
Weston/ESAT
2/15/91

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Dr. Alfred Haeberer/Joan Fisk/Gary Ward, EPA Support Services
Ross K. Robinson, [illegible]
[illegible]

1 Holding Time

VOA: Sampling date=12/18/90; Samples received by lab=12/19/90;

VOA soils are to be analyzed within 7 days of the sampling date; if they are not, the samples are estimated.

All VOA sample fractions were analyzed 9 to 11 days past the sampling date, which is 2 to 4 days past the permissible 7 days. All VOA samples are estimated(J) for positives and estimated (UJ) for negatives.

S-VOA: The holding times are satisfactory.

Pesticides: All holding times were met.

2 GC/MS Tuning and GC Instrument Performance

The GC/MS tuning was satisfactory as was that of the GC instrument performance.

3 Calibration

Calibration outliers are listed in the calibration outlier forms.
The continuous Pesticide calibration of 1/2/91(0026) on DB-608 has Heptachlor over the 15% limit; corresponding positives are estimated(J).

4 Blanks
VOA: VBLKL1, VBLKL2 and VBLKL3 contained Methylene Chloride and Acetone at less than 10X CRQL.

When a common contaminant is present in a corresponding sample as shown by FormIV at less than 10X the amount in the blank, the compound in the sample is given the Quant Limit(U).

S-VOA: The S-VOA blanks contained 1 to 4 Tic's which are estimated(J).

Pesticides: The pesticide blanks were clean.

5 Surrogates

VOA: Toluene-d8 was above QC limits for ENA12, ENA13, ENA15, ENB73, ENB75 and ENB75RE. Bromoflurobenzene was below QC limits for ENA12, ENA12RE, ENA13RE, ENA15, ENA16, ENA16RE, ENB73, ENB73RE and ENB75. ENA15RE had satisfactory results.

The VOA sample fractions of ENA12,ENA12RE, ENA13, ENA13RE, ENA16, ENA16RE, ENB73, ENB73RE, ENB75 and ENB75RE are estimated(J) for positives and estimated(UJ) for negatives.

S-VOA: 2,4,6-Tribromophenol was above QC limits in ENA14. No flagging is necessary.

Pesticides: The Pesticide surrogates were above advisory QC limits for ENA14, ENA15, ENB73, ENB74, ENB75 and ENA14MS. These pesticide sample fractions are estimated(J) for positives and estimated(UJ) for negatives.

6 Matrix Spikes

VOA: The spikes on ENA14 had the MSD%REC above QC limits for Toluene.

S-VOA: ENA 12 had the MS and MSD%REC of 2,4-Dinitrotoluene above limits. This was a med level analysis.

The low level ENA14 had the MS and MSD%REC above limits for 2,4-Dinitrotoluene and Pyrene. The %RPD of Pyrene was elevated.

Pesticides: ENA14 had the MS and MSD%REC of all tested compounds above limits except for Lindane. The %RPD of Dieldrin was elevated.

The corresponding unspiked samples are estimated(J) for the above listed compounds.

7 Duplicates

No duplicates or blanks were listed as being in dataset.

8 Internal Standards

VOA: ENA12 had 1,4-Difluorobenzene and Chlorobenzene out of limits. ENA12RE had Chlorobenzene out of limits. The compounds calculated on Chlorobenzene in ENA12 and ENA12RE are estimated(J) for positives and estimated(UJ) for negatives.

ENB75 and ENB75RE had 1,4-Difluorobenzene and Chlorobenzene out of limits. These two sample fractions are flagged as above for the compounds calculated on these 2 internal standards.

A list of the Internal Standards and the compounds they calculate follow on table 4.

9 Compound Identification

The results were well interpreted by the analyst.

10 Compound Quantitation

The CRQL's were calculated based on dilutions and concentrations. Errors of 2X (high) were observed for CRQL's of ENA12MS, ENA12MSD and ENA12.

## 11 System Performance

The S-VOA sample fractions have a large contaminant in the chromatograms which should have been cleaned prior to analysis.

## 12 Overall Asessment

All S-VOA samples contained 20 TIC's due to the previously mentioned impurity being present in the samples.

CASE/SAS # 15580

# CALIBRATION OUTLIERS
## VOLATILE HSL COMPOUNDS

CONTRACTOR Gulf

| Instrument # E | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 12-26-90 | | | 12/27/90 0903 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | 1.511 | 38.0 | J | 1.432 | | | | | | | | | | | |
| Acetone | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

VBLK 11
ENA 12

AFFECTED SAMPLES:

Reviewer's Initials/Date: RK 2-14-91

* These flags should be applied to the analytes on the sample data sheets.

# CALIBRATION OUTLIERS
## VOLATILE HSL COMPOUNDS

CASE/SAS # 15580 CONTRACTOR Gulf

| Instrument # E | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 2/28/90 | | | 12/28/90 2057 | | | 12/29/90 0941 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | 1.584 | | | 2.490 | 31.9 | J | 1.544 | | | | | | | | |
| Acetone | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | 0.045 | 22.1 | J/R | 0.041 | 14.6 | J/R | 0.051 | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| | |
|---|---|
| VBLK L2 | VBLK L3 |
| ENA 13 | ENA 13RE |
| ENA 15 | ENA 14 |
| ENA 16 | ENA 15RE |
| ENB 73-74 | ENA 16RE |
| | ENB 73RE |
| | ENB 75 |
| | ENB 75RE |
| | ENA 12RE |
| | ENA 14ms/msD |

Reviewer's Initials/Date: RK 2-14-91

* These flags should be applied to the analytes on the sample data sheets.

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 15580 CONTRACTOR GULF

| Instrument # B | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 12-15-90 | | | 1/7/91 1059 | | | 1/8/91 1200 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | - | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | | | | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | 0.252 | | | 0.210 | | | 0.334 | 32.5 | J | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | -- | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | 0.154 | | | 0.058 | 62.3 | | 0.232 | 50.6 | J | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | | | | | | | | | | | | | | | |
| 4-Nitrophenol | | | | | | | | | | | | | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

SBLK 1M1
ENA12 DIL/MSD
ENA 12
SBLK 4RE
SBLK L2
ENB 73-75
ENB 74RE
ENB 73RE
ENA 15-16
ENA 15RE

Reviewer Initials/Date: RK 2-14-91

* These flags should be applied to the analytes on the sample data sheets.

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 15580 CONTRACTOR EMCF

| Instrument # B | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 12-15-90 | | | 1/7/91 1054 | | | 1/8/91 1200 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | - | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | 0.136 | | | 0.120 | | | 0.215 | 60.3 | J | | | | | | |
| 4,6-Dinitro-2-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | | | | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | 1.000 | | | 0.594 | | | 0.729 | 22.1 | J | | | | | | |
| Dibenz(a,h)Anthracene | | | | | | | | | | | | | | | |
| Benzo(g,h,i) Perylene | | | | | | | | | | | | | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: RK 2-14-91

8/87

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 15580 CONTRACTOR GULF

| Instrument # V | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 12-11-90 | | | 1/4/91 1021 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | - | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | | | | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | -- | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | 0.114 | 34.2 | J | 0.099 | | | | | | | | | | | |
| 4-Nitrophenol | | | | | | | | | | | | | | | - |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

SBLK1
ENA 13-14
ENA 14 MS/MSD

Reviewer Initials/Date: RK 2-14-91

* These flags should be applied to the analytes on the sample data sheets.

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 15580 CONTRACTOR EMCF

| Instrument # 4 | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 12-11-90 | | | 1/4/00 1021 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | - | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | | | | | | | | | | | | | | | |
| 4,6-Dinitro-2-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | | | | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | | | | | | | | | | | | | | | |
| Dibenz(a,h)Anthracene | | | | | | | | | | | | | | | |
| Benzo(g,h,i) Perylene | | | | | | | | | | | | | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: RK 2/14/91

8/87

# DATA REPORTING QUALIFIERS

For reporting results to EPA, the following result qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24% moisture and a 1 to 10 dilution factor, the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330\ U)}{D} \times df \qquad \text{where } D = \frac{100 - \%\ \text{moisture}}{100}$$

and df = dilution factor

$$\text{at 24\% moisture, } D = \frac{100-24}{100} - 0.76$$

$$\frac{(330\ U)}{.76} \times 10 = 4300\ U$$ rounded to the appropriate number of significant figures

For soil sample subjected to GPC clean-up procedures, the CRQL is also multiplied by 2, to account for the fact that only half of the extract is recovered.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration is 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1 to 10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, report the concentration as 300J on Form I.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides $\geq$10 ng/ul in the final extract shall be confirmed by GC/MS.

2



B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample and all concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that TIC is a suspected aldol-condensation product.

X - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the Sample Data Summary Package and the Case Narrative. If more than one is required, use "Y" and "Z", as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

## * TABLE 4

### VOLATILE INTERNAL STANDARDS WITH CORRESPONING TCL ANALYTES ASSIGNED FOR QUANTITATION

| Bromochloromethane | 1,4-Difluorobenzene | Chlorobenzene-$d_5$ |
|---|---|---|
| Chloromethane | 2- Butanone | 2-Hexanone |
| Bromomethane | 1,1,1-Trichloroethane | 4-Methyl-2-Pentanone |
| *Vinyl Chloride | Carbon Tetrachloride | Tetrachloroethene |
| Chloroethane | Vinyl Acetate | 1,1,2,2-Tetrachloroethane |
| Methylene Chloride | Bromodichloromethane | *Toluene |
| Acetone | *1,2-Dichloropropane | Chlorobenzene |
| Carbon Disulfide | trans-1,3-Dichloropropane | *Ethylbenzene |
| *1,1-Dichloroethene | Trichloroethene | Styrene |
| 1,1-Dichloroethane | Dibromochloromethane | Xylene (total) |
| 1,2-Dichloroethene (total) | 1,1,2-Trichloroethane | Bromofluorobenzene (surr) |
| *Chloroform | Benzene | Toluene-$d_8$ (surr) |
| 1,2-Dichloroethane | cis-1,3-Dichloropropene | |
| 1,2-Dichloroethane-$d_4$ (surr) | Bromoform | |

(surr) = surrogate compound
*Calibration check compounds

### SEMIVOLATILE INTERNAL STANDARDS WITH CORRESPONDING TCL ANALYTES ASSIGNED FOR QUANTITATION

| 1,4-Dichlorobenzene-$d_4$ | Naphthalene-$d_8$ | Acenaphthene-$d_{10}$ | Phenanthrene-$d_{10}$ | Chrysene-$d_{12}$ | Perylene-$d_{12}$ |
|---|---|---|---|---|---|
| Phenol | Nitrobenzene | Hexachlorocyclopentadiene | 4,6-Dinitro-2-methylphenol | Pyrene | Di-n-octyl Phthalate |
| bis(2-Chloroethyl) ether | Isophorone | 2,4,6-Trichlorophenol | N-nitrosodiphenylamine | Butylbenzyl Phthalate | Benzo(b)fluoranthene |
| 2-Chlorophenol | 2-Nitrophenol | 2,4,5-Trichlorophenol | 1,2-Diphenylhydrazine | 3,3'-Dichlorobenzidine | Benzo(k)fluoranthene |
| 1,3-Dichlorobenzene | 2,4-Dimethylphenol | 2-Chloronaphthalene | 4-Bromophenyl Phenyl Ether | Benzo(a)anthracene | Benzo(a)pyrene |
| 1,4-Dichlorobenzene | Benzoic acid | 2-Nitroaniline | Hexachlorobenzene | bis(2-ethylhe Phthalate | Indeno(1,2,3-cd) pyrene |
| Benzyl Alcohol | bis(2-Chloroethoxy)methane | Dimethyl Phthalate | Pentachlorophenol | Chrysene | Dibenz(a,h) anthracene |
| 1,2-Dichlorobenzene | 2,4-Dichlorophenol | Acenaphthylene | Phenanthrene | Terphenyl-$d_{14}$ (surr) | Benzo(g,h,i) perylene |
| 2-Methylphenol | 1,2,4-Trichlorobenzene | 3-Nitroaniline | Anthracene | | |
| bis(2-Chloroisopropyl)ether | Naphthalene | Acenaphthene | Di-n-butyl Phthalate | | |
| 4-Methylphenol | 4-Chloroaniline | 2,4-Dinitrophenol | Fluoranthene | | |
| N-nitroso-Di-n-propylamine | Hexachlorobutadiene | 4-Nitrophenol | | | |
| Hexachloroethane | 4-Chloro-3-methylphenol | Dibenzofuran | | | |
| 2-Fluorophenol (surr) | 2-Methylnaphthalene | 2,4-Dinitrotoluene | | | |
| Phenol-$d_6$ (surr) | Nitrobenzene-$d_5$ (surr) | 2,6-Dinitrotoluene | | | |
| | | Diethyl Phthalate | | | |
| | | 4-Chlorophenyl-phenyl ether | | | |
| | | Fluorene | | | |
| | | 4-Nitroaniline | | | |
| | | 2-Fluorobiphenyl (surr) | | | |
| | | 2,4,6-Tribromo Phenol (surr) | | | |

Surr = surrogate compound

Gulf South Environmental Laboratory
Contract 68-D9-0038

Case 15580
SDG No. ENA12

Narrative

Case 15580 consisted of eight (8) soil samples which were received by Gulf South Environmental Laboratory on December 19, 1990 and logged in as Episode FNH. The samples were identified as follows:

| | | | |
|---|---|---|---|
| ENA12 | ENA14 | ENA16 | ENB74 |
| ENA13 | ENA15 | ENB73 | ENB75 |

The samples were analyzed for volatile organics, semivolatile organics, and pesticide/PCBs.

Volatile

All samples except for ENA14 and ENB74 required reanalysis because of low recovery of d5-chlorobenzene and, in some cases, 1,4-difluorobenzene. Low recovery of bromofluorobenzene and high recovery of d8-toluene were also noted for these samples. Reanalyses yielded similar results. Both runs are being submitted for these samples.

Semivolatile

Sample ENA12 was analyzed according to the medium soil procedure. Samples ENB74, ENB73, and ENA15 were reanalyzed because the retention time of d12-perylene was outside QC limits. Both runs are being submitted for these three samples as the reanalyses yielded similar results. The presence of dieldrin in ENA13 was confirmed by GC/MS. For quantitation of tentatively identified compounds in these samples, interferences precluded the use of the nearest internal standard and another standard was chosen.

Pesticides/PCB

Sample ENA13 required a 1:100 dilution for dieldrin, and dieldrin was confirmed by GC/MS.

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

Shelley R Antoine

Shelley R. Antoine
GC/MS Laboratory Manager

1/10/91

Date

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Level:(low/med) LOW

| | EPA SAMPLE NO. | S1 (TOL)# | S2 (BFB)# | S3 (DCE)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | ENA12 | 121 * | 68 * | 97 | 0 | 2 |
| 02 | ENA12RE | 112 | 70 * | 90 | 0 | 1 |
| 03 | ENA13 | 118 * | 75 | 105 | 0 | 1 |
| 04 | ENA13RE | 113 | 73 * | 89 | 0 | 1 |
| 05 | ENA14 | 103 | 84 | 88 | 0 | 0 |
| 06 | ENA15 | 121 * | 72 * | 100 | 0 | 2 |
| 07 | ENA15RE | 107 | 76 | 89 | 0 | 0 |
| 08 | ENA16 | 115 | 72 * | 103 | 0 | 1 |
| 09 | ENA16RE | 108 | 72 * | 81 | 0 | 1 |
| 10 | ENB73 | 122 * | 70 * | 106 | 0 | 2 |
| 11 | ENB73RE | 113 | 73 * | 87 | 0 | 1 |
| 12 | ENB74 | 112 | 79 | 108 | 0 | 0 |
| 13 | ENB75 | 138 * | 63 * | 89 | 0 | 2 |
| 14 | ENB75RE | 120 * | 75 | 94 | 0 | 1 |
| 15 | ENA14MS | 107 | 83 | 93 | 0 | 0 |
| 16 | ENA14MSD | 111 | 84 | 95 | 0 | 0 |
| 17 | VBLKL1 | 100 | 93 | 95 | 0 | 0 |
| 18 | VBLKL2 | 101 | 94 | 108 | 0 | 0 |
| 19 | VBLKL3 | 100 | 91 | 92 | 0 | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (TOL) | = Toluene-d8 | ( 81-117) |
| S2 (BFB) | = Bromofluorobenzene | ( 74-121) |
| S3 (DCE) | = 1,2-Dichloroethane-d4 | ( 70-121) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

000001



FORM II VOA-2  1/87 Rev.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Level:(low/med) LOW

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | ENA13 | 97 | 100 | 82 | 73 | 64 | 119 | 0 | 0 |
| 02 | ENA14 | 97 | 98 | 90 | 74 | 65 | 125 * | 0 | 1 |
| 03 | ENA15 | 86 | 98 | 60 | 62 | 69 | 75 | 0 | 0 |
| 04 | ENA15RE | 90 | 97 | 57 | 67 | 79 | 83 | 0 | 0 |
| 05 | ENA16 | 91 | 102 | 80 | 67 | 78 | 87 | 0 | 0 |
| 06 | ENB73 | 74 | 84 | 49 | 53 | 65 | 67 | 0 | 0 |
| 07 | ENB73RE | 74 | 84 | 49 | 59 | 67 | 67 | 0 | 0 |
| 08 | ENB74 | 94 | 105 | 68 | 72 | 84 | 94 | 0 | 0 |
| 09 | ENB74RE | 93 | 106 | 63 | 70 | 84 | 95 | 0 | 0 |
| 10 | ENB75 | 88 | 95 | 64 | 66 | 74 | 80 | 0 | 0 |
| 11 | ENA14MS | 91 | 93 | 79 | 71 | 61 | 106 | 0 | 0 |
| 12 | ENA14MSD | 93 | 92 | 71 | 71 | 61 | 112 | 0 | 0 |
| 13 | SBLKL1 | 94 | 97 | 83 | 73 | 62 | 118 | 0 | 0 |
| 14 | SBLKL1RE | 90 | 97 | 74 | 68 | 80 | 90 | 0 | 0 |
| 15 | SBLKL2 | 93 | 99 | 79 | 65 | 50 | 36 | 0 | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | ( 23-120) |
| S2 (FBP) | = 2-Fluorobiphenyl | ( 30-115) |
| S3 (TPH) | = Terphenyl | ( 18-137) |
| S4 (PHL) | = Phenol-d5 | ( 24-113) |
| S5 (2FP) | = 2-Fluorophenol | ( 25-121) |
| S6 (TBP) | = 2,4,6-Tribromophenol | ( 19-122) |

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

000001



FORM II SV-2

1/87 Rev.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Level:(low/med) MED

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | ENA12 | 84 | 92 | 55 | 59 | 64 | 85 | 0 | 0 |
| 02 | ENA12MS | 81 | 93 | 56 | 58 | 64 | 86 | 0 | 0 |
| 03 | ENA12MSD | 85 | 94 | 57 | 62 | 67 | 85 | 0 | 0 |
| 04 | SBLKM1 | 85 | 97 | 69 | 58 | 63 | 91 | 0 | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | ( 23-120) |
| S2 (FBP) | = 2-Fluorobiphenyl | ( 30-115) |
| S3 (TPH) | = Terphenyl | ( 18-137) |
| S4 (PHL) | = Phenol-d5 | ( 24-113) |
| S5 (2FP) | = 2-Fluorophenol | ( 25-121) |
| S6 (TBP) | = 2,4,6-Tribromophenol | ( 19-122) |

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

2F

# SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Level:(low/med) LOW

| | EPA SAMPLE NO. | S1 (DBC)# | OTHER |
|---|---|---|---|
| 01 | ENA12 | 136 | 0 |
| 02 | ENA13 | 105 | 0 |
| 03 | ENA13DL | 88 | 0 |
| 04 | ENA14 | 182 * | 0 |
| 05 | ENA15 | 192 * | 0 |
| 06 | ENA16 | 83 | 0 |
| 07 | ENB73 | 280 * | 0 |
| 08 | ENB74 | 462 * | 0 |
| 09 | ENB75 | 462 * | 0 |
| 10 | ENA14MS | 170 * | 0 |
| 11 | ENA14MSD | 145 | 0 |
| 12 | PBLKL1 | 115 | 0 |
| 13 | PBLKL2 | 71 | 0 |
| 14 | PBLKL2RE | 53 | 0 |

ADVISORY QC LIMITS

S1 (DBC) = Dibutlychlorendate ( 20-150)

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

000001



FORM II PEST-2 1/87 Rev.

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix Spike - EPA Sample No.: ENA14 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 58.1 | 0 | 66.6 | 115 | 59-172 |
| Trichloroethene | 58.1 | 0 | 66.0 | 114 | 62-137 |
| Benzene | 58.1 | 0 | 75.2 | 129 | 66-142 |
| Toluene | 58.1 | 5.88 | 84.5 | 135 | 59-139 |
| Chlorobenzene | 58.1 | 0 | 67.9 | 117 | 60-133 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 58.1 | 68.0 | 117 | -2 | 22 | 59-172 |
| Trichloroethene | 58.1 | 69.1 | 119 | -4 | 24 | 62-137 |
| Benzene | 58.1 | 79.3 | 136 | -5 | 21 | 66-142 |
| Toluene | 58.1 | 93.3 | 150 * | -11 | 21 | 59-139 |
| Chlorobenzene | 58.1 | 74.0 | 127 | -8 | 21 | 60-133 |

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 1 out of 10 outside limits

COMMENTS: ENA14 SOIL-5G CASE:15580
RTX-502.2 60M X .53MM 35/4220@6 INST. E

000002

3D

# SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix Spike - EPA Sample No.: ENA12  Level:(low/med) MED

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 290000 | 0 | 205000 | 71 | 26- 90 |
| 2-Chlorophenol | 290000 | 0 | 232000 | 80 | 25-102 |
| 1,4-Dichlorobenzene | 145000 | 0 | 109000 | 75 | 28 104 |
| N-Nitroso-di-n-prop.(1) | 145000 | 0 | 115000 | 79 | 41 126 |
| 1,2,4-Trichlorobenzene | 145000 | 0 | 123000 | 85 | 38 107 |
| 4-Chloro-3-methylphenol | 290000 | 0 | 231000 | 80 | 26 103 |
| Acenaphthene | 145000 | 0 | 142000 | 98 | 31-137 |
| 4-Nitrophenol | 290000 | 0 | 213000 | 73 | 11-114 |
| 2,4-Dinitrotoluene | 145000 | 0 | 136000 | 94 * | 28- 89 |
| Pentachlorophenol | 290000 | 0 | 134000 | 46 | 17-109 |
| Pyrene | 145000 | 0 | 81200 | 56 | 35-142 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 290000 | 214000 | 74 | -4 | 35 | 26- 90 |
| 2-Chlorophenol | 290000 | 249000 | 86 | -7 | 50 | 25-102 |
| 1,4-Dichlorobenzene | 145000 | 117000 | 81 | -8 | 27 | 28 104 |
| N-Nitroso-di-n-prop.(1) | 145000 | 121000 | 83 | -5 | 38 | 41 126 |
| 1,2,4-Trichlorobenzene | 145000 | 133000 | 92 | -8 | 23 | 38 107 |
| 4-Chloro-3-methylphenol | 290000 | 241000 | 83 | -4 | 33 | 26 103 |
| Acenaphthene | 145000 | 146000 | 101 | -3 | 19 | 31-137 |
| 4-Nitrophenol | 290000 | 247000 | 85 | -15 | 50 | 11-114 |
| 2,4-Dinitrotoluene | 145000 | 136000 | 94 * | 0 | 47 | 28- 89 |
| Pentachlorophenol | 290000 | 153000 | 53 | -14 | 47 | 17-109 |
| Pyrene | 145000 | 85200 | 59 | -5 | 36 | 35-142 |

(1) N-Nitroso-di-n-propylamine

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

RPD: 0 out of 11 outside limits
Spike Recovery: 2 out of 22 outside limits

COMMENTS: ENA12 (MED SOIL) CASE:15580
0.32MM RTX-5 FSCC (1.0U) 45/4-300@12 INST B

3D

# SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix Spike - EPA Sample No.: ENA14  Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 7770 | 0 | 6450 | 83 | 26- 90 |
| 2-Chlorophenol | 7770 | 0 | 6980 | 90 | 25-102 |
| 1,4-Dichlorobenzene | 3890 | 0 | 3070 | 79 | 28 104 |
| N-Nitroso-di-n-prop.(1) | 3890 | 0 | 3370 | 87 | 41 126 |
| 1,2,4-Trichlorobenzene | 3890 | 0 | 3250 | 84 | 38 107 |
| 4-Chloro-3-methylphenol | 7770 | 0 | 6780 | 87 | 26 103 |
| Acenaphthene | 3890 | 0 | 4050 | 104 | 31-137 |
| 4-Nitrophenol | 7770 | 0 | 6490 | 84 | 11-114 |
| 2,4-Dinitrotoluene | 3890 | 0 | 3840 | 99 * | 28- 89 |
| Pentachlorophenol | 7770 | 0 | 4690 | 60 | 17-109 |
| Pyrene | 3890 | 633 | 6410 | 148 * | 35-142 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 7770 | 6410 | 82 | 1 | 35 | 26- 90 |
| 2-Chlorophenol | 7770 | 7020 | 90 | 0 | 50 | 25-102 |
| 1,4-Dichlorobenzene | 3890 | 3110 | 80 | -1 | 27 | 28 104 |
| N-Nitroso-di-n-prop.(1) | 3890 | 3380 | 87 | 0 | 38 | 41 126 |
| 1,2,4-Trichlorobenzene | 3890 | 3300 | 85 | -1 | 23 | 38 107 |
| 4-Chloro-3-methylphenol | 7770 | 7020 | 90 | -3 | 33 | 26 103 |
| Acenaphthene | 3890 | 4080 | 105 | -1 | 19 | 31-137 |
| 4-Nitrophenol | 7770 | 6730 | 87 | -4 | 50 | 11-114 |
| 2,4-Dinitrotoluene | 3890 | 3650 | 94 * | 5 | 47 | 28- 89 |
| Pentachlorophenol | 7770 | 5800 | 75 | -22 | 47 | 17-109 |
| Pyrene | 3890 | 12700 | 310 * | -71 * | 36 | 35-142 |

(1) N-Nitroso-di-n-propylamine

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

RPD: 1 out of 11 outside limits
Spike Recovery: 4 out of 22 outside limits

COMMENTS: ENA14 LOW SOIL 15580
0.32MM X 30M RTX-5 1.0UM 45/4-300@15 INST F

3F

# SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix Spike - EPA Sample No.: ENA14 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 31.0 | 0 | 35.5 | 114 | 46-127 |
| Heptachlor | 31.0 | 0 | 55.3 | 178 * | 35-130 |
| Aldrin | 31.0 | 0 | 48.8 | 157 * | 34-132 |
| Dieldrin | 77.6 | 0 | 143 | 184 * | 31-134 |
| Endrin | 77.6 | 0 | 111 | 143 * | 42-139 |
| 4,4'-DDT | 77.6 | 0 | 211 | 272 * | 23-134 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 31.0 | 38.4 | 124 | -8 | 50 | 46-127 |
| Heptachlor | 31.0 | 52.6 | 170 * | 5 | 31 | 35-130 |
| Aldrin | 31.0 | 45.5 | 147 * | 7 | 43 | 34-132 |
| Dieldrin | 77.6 | 228 | 294 * | -46 * | 38 | 31-134 |
| Endrin | 77.6 | 167 | 215 * | -40 | 45 | 42-139 |
| 4,4'-DDT | 77.6 | 167 | 215 * | 23 | 50 | 23-134 |

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

* Values outside of QC limits

RPD: 1 out of 6 outside limits
Spike Recovery: 10 out of 12 outside limits

COMMENTS: AROCLOR 1254 PRESENT.

000002

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Lab File ID: EVB122790A  Lab Sample ID: VBLKL1

Date Analyzed: 12/27/90  Time Analyzed: 0946

Matrix: (soil/water) SOIL  Level:(low/med) LOW

Instrument ID: E

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | ENA12 | FNH01 | VOFNH01 | 1431 |

COMMENTS: VBLKL BLANK# SOIL-5GRS, CASE:
RTX-502.2 60M X .53MM 35/4220@6 INST. E

000003



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4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Lab File ID: EVB122890B  Lab Sample ID: VBLKL2

Date Analyzed: 12/28/90  Time Analyzed: 2138

Matrix: (soil/water) SOIL  Level:(low/med) LOW

Instrument ID: E

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | ENA13 | FNH02 | VOFNH02 | 007 |
| 02 | ENA15 | FNH04 | VOFNH04 | 121 |
| 03 | ENA16 | FNH05 | VOFNH05 | 158 |
| 04 | ENB73 | FNH06 | VOFNH06 | 235 |
| 05 | ENB74 | FNH07 | VOFNH07 | 312 |

COMMENTS: VBLKL BLANK# SOIL-5RS. CASE:
RTX-502.2 60M X .53MM 35/4220@6 INST. E

000004

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Lab File ID: EVB122990A Lab Sample ID: VBLKL3

Date Analyzed: 12/29/90 Time Analyzed: 1017

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: E

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | ENA12RE | FNH01RE | VOFNH01R1 | 2041 |
| 02 | ENA13RE | FNH02RE | VOFNH02R | 1109 |
| 03 | ENA14 | FNH03 | VOFNH03R | 1157 |
| 04 | ENA15RE | FNH04RE | VOFNH04R | 1227 |
| 05 | ENA16RE | FNH05RE | VOFNH05R | 1303 |
| 06 | ENB73RE | FNH06RE | VOFHN06R | 1347 |
| 07 | ENB75 | FNH08 | VOFNH08R | 1503 |
| 08 | ENB75RE | FNH08RE | VOFNH08R1 | 1541 |
| 09 | ENA14MS | FNH03MS | VOFNH03MS | 1618 |
| 10 | ENA14MSD | FNH03MSD | VOFNH03MSD | 1656 |

COMMENTS: VBLKL BLANK# SOIL-5G CASE:
RTX-502.2 60M X .53MM 35/4220@6 INST. E

000005

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Lab File ID: SVBSM027B1 Lab Sample ID: SBLKM1

Date Extracted: 12/21/90 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 01/07/91 Time Analyzed: 1407

Matrix: (soil/water) SOIL Level:(low/med) MED

Instrument ID: B

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | ENA12 | FNH01 | SVFNH01 | 01/07/91 |
| 02 | ENA12MS | FNH01MS | SVFNH01MS | 01/07/91 |
| 03 | ENA12MSD | FNH01MSD | SVFNH01MSD | 01/07/91 |

COMMENTS: SBLKM1 (MED SOIL - BSM9027B1) CASE:15580
0.32MM RTX-5 FSCC (1.0U) 45/4-300@12 INST B

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Lab File ID: SVBSL063B2R Lab Sample ID: SBLKL2

Date Extracted: 12/20/90 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 01/08/91 Time Analyzed: 1335

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: B

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | ENA15 | FNH04 | SVFNH04R | 01/08/91 |
| 02 | ENA15RE | FNH04RE | SVFNH04R2 | 01/08/91 |
| 03 | ENA16 | FNH05 | SVFNH05 | 01/08/91 |
| 04 | ENB73 | FNH06 | SVFNH06 | 01/08/91 |
| 05 | ENB73RE | FNH06RE | SVFNH06R | 01/08/91 |
| 06 | ENB75 | FNH08 | SVFNH08 | 01/08/91 |

COMMENTS: SBLKL2 (LOW SOIL - GPC - BSL9063B2) CASE:15580
0.32MM RTX-5 FSCC (1.0U) 45/4-300@12 INST B

000006



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4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Lab File ID: SVBSL063B1R  Lab Sample ID: SBLKL1RE

Date Extracted: 12/20/90  Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 01/08/91  Time Analyzed: 1248

Matrix: (soil/water) SOIL  Level:(low/med) LOW

Instrument ID: B

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | ENB74 | FNH07 | SVFNH07 | 01/08/91 |
| 02 | ENB74RE | FNH07RE | SVFNH07R | 01/08/91 |

COMMENTS: SBLKL1RE (LOW SOIL - BSL9063B1) CASE:15580
0.32MM RTX-5 FSCC (1.0U) 45/4-300@12 INST B

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Lab File ID: SVBSL063B1  Lab Sample ID: SBLKL1

Date Extracted: 12/20/90  Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 01/04/91  Time Analyzed: 1306

Matrix: (soil/water) SOIL  Level:(low/med) LOW

Instrument ID: F

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | ENA13 | FNH02 | SVFNH02 | 01/04/91 |
| 02 | ENA14 | FNH03 | SVFNH03 | 01/04/91 |
| 03 | ENA14MS | FNH03MS | SVFNH03MS | 01/04/91 |
| 04 | ENA14MSD | FNH03MSD | SVFNH03MSD | 01/04/91 |

COMMENTS: SBLKL LOW SOIL 15580 EPA
0.32MM X 30M RTX-5 1.0UM 45/4-300@15 INST F

000008



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4C

# PESTICIDE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Lab Sample ID: PPSL053B1  Lab File ID: _____

Matrix:(soil/water) SOIL  Level:(low/med) LOW

Date Extracted: 12/20/90  Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 01/01/91  Date Analyzed (2): 01/01/91

Time Analyzed (1): 0758  Time Analyzed (2): 0758

Instrument ID (1): GCF  Instrument ID (2): GCF

GC Column ID (1): DB-608  GC Column ID (2): DB-1701

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | ENA13 | FNH02 | 01/01/91 | 01/01/91 |
| 02 | ENA14 | FNH03 | 01/01/91 | 01/01/91 |
| 03 | ENB74 | FNH07 | 01/01/91 | 01/01/91 |
| 04 | ENA14MS | FNH03MS | 01/01/91 | 01/01/91 |
| 05 | ENA14MSD | FNH03MSD | 01/01/91 | 01/01/91 |

COMMENTS:

000003

4C

# PESTICIDE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Lab Sample ID: PPSL053B2  Lab File ID: _____

Matrix:(soil/water) SOIL  Level:(low/med) LOW

Date Extracted: 12/20/90  Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 01/01/91  Date Analyzed (2): 01/01/91

Time Analyzed (1): 0952  Time Analyzed (2): 0952

Instrument ID (1): GCF  Instrument ID (2): GCF

GC Column ID (1): DB-608  GC Column ID (2): DB-1701

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | ENA12 | FNH01 | 01/01/91 | 01/01/91 |
| 02 | ENA15 | FNH04 | 01/01/91 | 01/01/91 |
| 03 | ENA16 | FNH05 | 01/01/91 | 01/01/91 |
| 04 | ENB73 | FNH06 | 01/01/91 | 01/01/91 |
| 05 | ENB75 | FNH08 | 01/01/91 | 01/01/91 |

COMMENTS:

000004

4C

# PESTICIDE METHOD BLANK SUMMARY

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Lab Sample ID: PPSL053B2RE  Lab File ID: _____

Matrix:(soil/water) SOIL  Level:(low/med) LOW

Date Extracted: 12/20/90  Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 01/04/91  Date Analyzed (2): 01/04/91

Time Analyzed (1): 0315  Time Analyzed (2): 0315

Instrument ID (1): GCF  Instrument ID (2): GCF

GC Column ID (1): DB-608  GC Column ID (2): DB-1701

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

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | ENA13DL | FNH02DL | 01/04/91 | 01/04/91 |

COMMENTS:

000005



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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKL1

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: VBLKL1

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: EVB122790A

Level: (low/med) LOW  Date Received: _____

% Moisture: not dec. _____  Date Analyzed: 12/27/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 5 | |
| 67-64-1 | Acetone | 4 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (total) | 5 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKL1

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: VBLKL1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EVB122790A

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/27/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKL2

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: VBLKL2

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: EVB122890B

Level: (low/med) LOW  Date Received:

% Moisture: not dec.  Date Analyzed: 12/28/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 10 | |
| 67-64-1 | Acetone | 8 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (total) | 5 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKL2

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: VBLKL2

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EVB122890B

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/28/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKL3

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: VBLKL3

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: EVB122990A

Level: (low/med) LOW  Date Received: _____

% Moisture: not dec. _____  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 3 | J |
| 67-64-1 | Acetone | 7 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (total) | 5 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKL3

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: ____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: VBLKL3

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: EVB122990A

Level: (low/med) LOW  Date Received: ____

% Moisture: not dec. ____  Date Analyzed: 12/29/90

Column (pack/cap) CAP  Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000317

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKL1

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: SBLKL1

Sample wt/vol: 3.0 (g/mL) G  Lab File ID: SVBSL063B1

Level: (low/med) LOW  Date Received: _____

% Moisture: not dec. _____ dec. _____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N  pH: 8.3  Dilution Factor: 0.100

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 330 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 330 | U |
| 95-57-8 | 2-Chlorophenol | 330 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 330 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 330 | U |
| 100-51-6 | Benzyl Alcohol | 330 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 330 | U |
| 95-48-7 | 2-Methylphenol | 330 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 330 | U |
| 106-44-5 | 4-Methylphenol | 330 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 330 | U |
| 67-72-1 | Hexachloroethane | 330 | U |
| 98-95-3 | Nitrobenzene | 330 | U |
| 78-59-1 | Isophorone | 330 | U |
| 88-75-5 | 2-Nitrophenol | 330 | U |
| 105-67-9 | 2,4-Dimethylphenol | 330 | U |
| 65-85-0 | Benzoic Acid | 1600 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 330 | U |
| 120-83-2 | 2,4-Dichlorophenol | 330 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 330 | U |
| 91-20-3 | Naphthalene | 330 | U |
| 106-47-8 | 4-Chloroaniline | 330 | U |
| 87-68-3 | Hexachlorobutadiene | 330 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 330 | U |
| 91-57-6 | 2-Methylnaphthalene | 330 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 330 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 330 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1600 | U |
| 91-58-7 | 2-Chloronaphthalene | 330 | U |
| 88-74-4 | 2-Nitroaniline | 1600 | U |
| 131-11-3 | Dimethyl Phthalate | 330 | U |
| 208-96-8 | Acenaphthylene | 330 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 330 | U |

001030

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKL1

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: SBLKL1

Sample wt/vol: 3.0 (g/mL) G  Lab File ID: SVBSL063B1

Level: (low/med) LOW  Date Received:

% Moisture: not dec.  dec.  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N  pH: 8.3  Dilution Factor: 0.100

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1600 | U |
| 83-32-9 | Acenaphthene | 330 | U |
| 51-28-5 | 2,4-Dinitrophenol | 1600 | U |
| 100-02-7 | 4-Nitrophenol | 1600 | U |
| 132-64-9 | Dibenzofuran | 330 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 330 | U |
| 84-66-2 | Diethylphthalate | 330 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 330 | U |
| 86-73-7 | Fluorene | 330 | U |
| 100-01-6 | 4-Nitroaniline | 1600 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 1600 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 330 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 330 | U |
| 118-74-1 | Hexachlorobenzene | 330 | U |
| 87-86-5 | Pentachlorophenol | 1600 | U |
| 85-01-8 | Phenanthrene | 330 | U |
| 120-12-7 | Anthracene | 330 | U |
| 84-74-2 | Di-n-Butylphthalate | 330 | U |
| 206-44-0 | Fluoranthene | 330 | U |
| 129-00-0 | Pyrene | 330 | U |
| 85-68-7 | Butylbenzylphthalate | 330 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 660 | U |
| 56-55-3 | Benzo(a)Anthracene | 330 | U |
| 218-01-9 | Chrysene | 330 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 330 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 330 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 330 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 330 | U |
| 50-32-8 | Benzo(a)Pyrene | 330 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 330 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 330 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 330 | U |

(1) - Cannot be separated from Diphenylamine

001031

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKL1

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKL1

Sample wt/vol: 3.0 (g/mL) G Lab File ID: SVBSL063B1

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N pH: 8.3 Dilution Factor: 0.100

Number TICs found: 4

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN KETONE | 6.12 | 270 | J |
| 2. | UNKNOWN KETONE | 6.75 | 3300 | J |
| 3. | UNKNOWN KETONE | 7.23 | 220 | J |
| 4. | UNKNOWN KETONE | 7.90 | 22 | J |

001032

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKL1RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: SBLKL1RE

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVBSL063B1R

Level: (low/med) LOW  Date Received:

% Moisture: not dec.  dec.  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N  pH: 8.3  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 330 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 330 | U |
| 95-57-8 | 2-Chlorophenol | 330 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 330 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 330 | U |
| 100-51-6 | Benzyl Alcohol | 330 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 330 | U |
| 95-48-7 | 2-Methylphenol | 330 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 330 | U |
| 106-44-5 | 4-Methylphenol | 330 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 330 | U |
| 67-72-1 | Hexachloroethane | 330 | U |
| 98-95-3 | Nitrobenzene | 330 | U |
| 78-59-1 | Isophorone | 330 | U |
| 88-75-5 | 2-Nitrophenol | 330 | U |
| 105-67-9 | 2,4-Dimethylphenol | 330 | U |
| 65-85-0 | Benzoic Acid | 1600 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 330 | U |
| 120-83-2 | 2,4-Dichlorophenol | 330 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 330 | U |
| 91-20-3 | Naphthalene | 330 | U |
| 106-47-8 | 4-Chloroaniline | 330 | U |
| 87-68-3 | Hexachlorobutadiene | 330 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 330 | U |
| 91-57-6 | 2-Methylnaphthalene | 330 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 330 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 330 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1600 | U |
| 91-58-7 | 2-Chloronaphthalene | 330 | U |
| 88-74-4 | 2-Nitroaniline | 1600 | U |
| 131-11-3 | Dimethyl Phthalate | 330 | U |
| 208-96-8 | Acenaphthylene | 330 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 330 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKL1RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: ____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: SBLKL1RE

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVBSL063B1R

Level: (low/med) LOW  Date Received: ____

% Moisture: not dec. ____ dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N  pH: 8.3  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1600 | U |
| 83-32-9 | Acenaphthene | 330 | U |
| 51-28-5 | 2,4-Dinitrophenol | 1600 | U |
| 100-02-7 | 4-Nitrophenol | 1600 | U |
| 132-64-9 | Dibenzofuran | 330 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 330 | U |
| 84-66-2 | Diethylphthalate | 330 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 330 | U |
| 86-73-7 | Fluorene | 330 | U |
| 100-01-6 | 4-Nitroaniline | 1600 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 1600 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 330 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 330 | U |
| 118-74-1 | Hexachlorobenzene | 330 | U |
| 87-86-5 | Pentachlorophenol | 1600 | U |
| 85-01-8 | Phenanthrene | 330 | U |
| 120-12-7 | Anthracene | 330 | U |
| 84-74-2 | Di-n-Butylphthalate | 330 | U |
| 206-44-0 | Fluoranthene | 330 | U |
| 129-00-0 | Pyrene | 330 | U |
| 85-68-7 | Butylbenzylphthalate | 330 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 660 | U |
| 56-55-3 | Benzo(a)Anthracene | 330 | U |
| 218-01-9 | Chrysene | 330 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 330 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 330 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 330 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 330 | U |
| 50-32-8 | Benzo(a)Pyrene | 330 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 330 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 330 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 330 | U |

(1) - Cannot be separated from Diphenylamine

001049

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKL1RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKL1RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVBSL063B1R

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.3 Dilution Factor: 1.00

Number TICs found: 2

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN KETONE | 6.15 | 2400 | J |
| 2. | UNKNOWN KETONE | 7.58 | 910 | J |

001059

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKL2

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKL2

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVBSL063B2R

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 8.3 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 660 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 660 | U |
| 95-57-8 | 2-Chlorophenol | 660 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 660 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 660 | U |
| 100-51-6 | Benzyl Alcohol | 660 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 660 | U |
| 95-48-7 | 2-Methylphenol | 660 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 660 | U |
| 106-44-5 | 4-Methylphenol | 660 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 660 | U |
| 67-72-1 | Hexachloroethane | 660 | U |
| 98-95-3 | Nitrobenzene | 660 | U |
| 78-59-1 | Isophorone | 660 | U |
| 88-75-5 | 2-Nitrophenol | 660 | U |
| 105-67-9 | 2,4-Dimethylphenol | 660 | U |
| 65-85-0 | Benzoic Acid | 3200 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 660 | U |
| 120-83-2 | 2,4-Dichlorophenol | 660 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 660 | U |
| 91-20-3 | Naphthalene | 660 | U |
| 106-47-8 | 4-Chloroaniline | 660 | U |
| 87-68-3 | Hexachlorobutadiene | 660 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 660 | U |
| 91-57-6 | 2-Methylnaphthalene | 660 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 660 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 660 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3200 | U |
| 91-58-7 | 2-Chloronaphthalene | 660 | U |
| 88-74-4 | 2-Nitroaniline | 3200 | U |
| 131-11-3 | Dimethyl Phthalate | 660 | U |
| 208-96-8 | Acenaphthylene | 660 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 660 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKL2

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: SBLKL2

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVBSL063B2R

Level: (low/med) LOW  Date Received:

% Moisture: not dec.  dec.  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y  pH: 8.3  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3200 | U |
| 83-32-9 | Acenaphthene | 660 | U |
| 51-28-5 | 2,4-Dinitrophenol | 3200 | U |
| 100-02-7 | 4-Nitrophenol | 3200 | U |
| 132-64-9 | Dibenzofuran | 660 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 660 | U |
| 84-66-2 | Diethylphthalate | 660 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 660 | U |
| 86-73-7 | Fluorene | 660 | U |
| 100-01-6 | 4-Nitroaniline | 3200 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 3200 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 660 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 660 | U |
| 118-74-1 | Hexachlorobenzene | 660 | U |
| 87-86-5 | Pentachlorophenol | 3200 | U |
| 85-01-8 | Phenanthrene | 660 | U |
| 120-12-7 | Anthracene | 660 | U |
| 84-74-2 | Di-n-Butylphthalate | 660 | U |
| 206-44-0 | Fluoranthene | 660 | U |
| 129-00-0 | Pyrene | 660 | U |
| 85-68-7 | Butylbenzylphthalate | 660 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1300 | U |
| 56-55-3 | Benzo(a)Anthracene | 660 | U |
| 218-01-9 | Chrysene | 660 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 660 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 660 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 660 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 660 | U |
| 50-32-8 | Benzo(a)Pyrene | 660 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 660 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 660 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 660 | U |

(1) - Cannot be separated from Diphenylamine

001061

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKL2

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKL2

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVBSL063B2R

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 8.3 Dilution Factor: 1.0

Number TICs found: 3

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN KETONE | 6.15 | 2500 | J |
| 2. | UNKNOWN KETONE | 6.80 | 630 | J |
| 3. | UNKNOWN KETONE | 7.58 | 820 | J |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKM1

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKM1

Sample wt/vol: 2.0 (g/mL) G Lab File ID: SVBSM027B1

Level: (low/med) MED Date Received:

% Moisture: not dec. dec. Date Extracted: 12/21/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/07/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2/0 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 20000 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 20000 | U |
| 95-57-8 | 2-Chlorophenol | 20000 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 20000 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 20000 | U |
| 100-51-6 | Benzyl Alcohol | 20000 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 20000 | U |
| 95-48-7 | 2-Methylphenol | 20000 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 20000 | U |
| 106-44-5 | 4-Methylphenol | 20000 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 20000 | U |
| 67-72-1 | Hexachloroethane | 20000 | U |
| 98-95-3 | Nitrobenzene | 20000 | U |
| 78-59-1 | Isophorone | 20000 | U |
| 88-75-5 | 2-Nitrophenol | 20000 | U |
| 105-67-9 | 2,4-Dimethylphenol | 20000 | U |
| 65-85-0 | Benzoic Acid | 96000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 20000 | U |
| 120-83-2 | 2,4-Dichlorophenol | 20000 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 20000 | U |
| 91-20-3 | Naphthalene | 20000 | U |
| 106-47-8 | 4-Chloroaniline | 20000 | U |
| 87-68-3 | Hexachlorobutadiene | 20000 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 20000 | U |
| 91-57-6 | 2-Methylnaphthalene | 20000 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 20000 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 20000 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 96000 | U |
| 91-58-7 | 2-Chloronaphthalene | 20000 | U |
| 88-74-4 | 2-Nitroaniline | 96000 | U |
| 131-11-3 | Dimethyl Phthalate | 20000 | U |
| 208-96-8 | Acenaphthylene | 20000 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 20000 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKM1

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKM1

Sample wt/vol: 2.0 (g/mL) G Lab File ID: SVBSM027B1

Level: (low/med) MED Date Received:

% Moisture: not dec. dec. Date Extracted: 12/21/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/07/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: ~~2.0~~ 1.0 mm

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 96000 | U |
| 83-32-9 | Acenaphthene | 20000 | U |
| 51-28-5 | 2,4-Dinitrophenol | 96000 | U |
| 100-02-7 | 4-Nitrophenol | 96000 | U |
| 132-64-9 | Dibenzofuran | 20000 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 20000 | U |
| 84-66-2 | Diethylphthalate | 20000 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 20000 | U |
| 86-73-7 | Fluorene | 20000 | U |
| 100-01-6 | 4-Nitroaniline | 96000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 96000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 20000 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 20000 | U |
| 118-74-1 | Hexachlorobenzene | 20000 | U |
| 87-86-5 | Pentachlorophenol | 96000 | U |
| 85-01-8 | Phenanthrene | 20000 | U |
| 120-12-7 | Anthracene | 20000 | U |
| 84-74-2 | Di-n-Butylphthalate | 20000 | U |
| 206-44-0 | Fluoranthene | 20000 | U |
| 129-00-0 | Pyrene | 20000 | U |
| 85-68-7 | Butylbenzylphthalate | 20000 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 40000 | U |
| 56-55-3 | Benzo(a)Anthracene | 20000 | U |
| 218-01-9 | Chrysene | 20000 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 20000 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 20000 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 20000 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 20000 | U |
| 50-32-8 | Benzo(a)Pyrene | 20000 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 20000 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 20000 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 20000 | U |

(1) - Cannot be separated from Diphenylamine

001077

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKM1

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: SBLKM1

Sample wt/vol: 2.0 (g/mL) G Lab File ID: SVBSM027B1

Level: (low/med) MED Date Received:

% Moisture: not dec. dec. Date Extracted: 12/21/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/07/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: ~~2.0~~ 1.0

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 18.54 | 53000 | J |

001078

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKL1

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: PPSL053B1

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

Level: (low/med) LOW  Date Received: _____

% Moisture: not dec. ____ dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) N  pH: 8.3  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.0 | U |
| 319-85-7 | beta-BHC | 8.0 | U |
| 319-86-8 | delta-BHC | 8.0 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.0 | U |
| 76-44-8 | Heptachlor | 8.0 | U |
| 309-00-2 | Aldrin | 8.0 | U |
| 1024-57-3 | Heptachlor epoxide | 8.0 | U |
| 959-98-8 | Endosulfan I | 8.0 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 80 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 80 | U |
| 5103-74-2 | gamma-Chlordane | 80 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 80 | U |
| 11104-28-2 | Aroclor-1221 | 80 | U |
| 11141-16-5 | Aroclor-1232 | 80 | U |
| 53469-21-9 | Aroclor-1242 | 80 | U |
| 12672-29-6 | Aroclor-1248 | 80 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKL~~Z~~RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: PFSL053B~~Z~~RE

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

Level: (low/med) LOW  Date Received:

% Moisture: not dec. ____ dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N  pH: 8.3  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.0 | U |
| 319-85-7 | beta-BHC | 8.0 | U |
| 319-86-8 | delta-BHC | 8.0 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.0 | U |
| 76-44-8 | Heptachlor | 8.0 | U |
| 309-00-2 | Aldrin | 8.0 | U |
| 1024-57-3 | Heptachlor epoxide | 8.0 | U |
| 959-98-8 | Endosulfan I | 8.0 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 80 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 80 | U |
| 5103-74-2 | gamma-Chlordane | 80 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 80 | U |
| 11104-28-2 | Aroclor-1221 | 80 | U |
| 11141-16-5 | Aroclor-1232 | 80 | U |
| 53469-21-9 | Aroclor-1242 | 80 | U |
| 12672-29-6 | Aroclor-1248 | 80 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

000314

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKL2

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: PPSL053B2

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

Level: (low/med) LOW  Date Received: _____

% Moisture: not dec. ____ dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) Y  pH: 8.3  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 16 | U |
| 319-85-7 | beta-BHC | 16 | U |
| 319-86-8 | delta-BHC | 16 | U |
| 58-89-9 | gamma-BHC (Lindane) | 16 | U |
| 76-44-8 | Heptachlor | 16 | U |
| 309-00-2 | Aldrin | 16 | U |
| 1024-57-3 | Heptachlor epoxide | 16 | U |
| 959-98-8 | Endosulfan I | 16 | U |
| 60-57-1 | Dieldrin | 32 | U |
| 72-55-9 | 4,4'-DDE | 32 | U |
| 72-20-8 | Endrin | 32 | U |
| 33213-65-9 | Endosulfan II | 32 | U |
| 72-54-8 | 4,4'-DDD | 32 | U |
| 1031-07-8 | Endosulfan sulfate | 32 | U |
| 50-29-3 | 4,4'-DDT | 32 | U |
| 72-43-5 | Methoxychlor | 160 | U |
| 53494-70-5 | Endrin ketone | 32 | U |
| 5103-71-9 | alpha-Chlordane | 160 | U |
| 5103-74-2 | gamma-Chlordane | 160 | U |
| 8001-35-2 | Toxaphene | 320 | U |
| 12674-11-2 | Aroclor-1016 | 160 | U |
| 11104-28-2 | Aroclor-1221 | 160 | U |
| 11141-16-5 | Aroclor-1232 | 160 | U |
| 53469-21-9 | Aroclor-1242 | 160 | U |
| 12672-29-6 | Aroclor-1248 | 160 | U |
| 11097-69-1 | Aroclor-1254 | 320 | U |
| 11096-82-5 | Aroclor-1260 | 320 | U |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA12

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH01

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 31 Date Analyzed: 12/27/90

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 14 | U |
| 74-83-9 | Bromomethane | 14 | U |
| 75-01-4 | Vinyl Chloride | 14 | U |
| 75-00-3 | Chloroethane | 14 | U |
| 75-09-2 | Methylene Chloride | 40 | ~~B~~ U |
| 67-64-1 | Acetone | 28 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 78-93-3 | 2-Butanone | 14 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 108-05-4 | Vinyl Acetate | 14 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 14 | U |
| 591-78-6 | 2-Hexanone | 14 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |
| 108-88-3 | Toluene | 21 | |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 1330-20-7 | Xylene (total) | 7 | U |

RK 2-14-91

000015

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA12

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH01

Sample wt/vol: 2.0 (g/mL) G Lab File ID: SVFNH01

Level: (low/med) MED Date Received: 12/19/90

% Moisture: not dec. 31 dec. Date Extracted: 12/21/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/07/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~2.0~~ 1.0

Number TICs found: 21

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 12.84 | 200000 | J |
| 2. | UNKNOWN HYDROCARBON | 13.82 | 450000 | J |
| 3. | NAPHTHALENE,-TRIMETHYL- | 14.34 | 140000 | J |
| 4. | UNKNOWN HYDROCARBON | 14.75 | 240000 | J |
| 5. | UNKNOWN HYDROCARBON | 15.64 | 300000 | J |
| 6. | UNKNOWN HYDROCARBON | 16.49 | 210000 | J |
| 7. | UNKNOWN HYDROCARBON | 17.29 | 200000 | J |
| 8. | UNKNOWN HYDROCARBON | 18.05 | 190000 | J |
| 9. | UNKNOWN HYDROCARBON | 18.55 | 200000 | J |
| 10. | UNKNOWN HYDROCARBON | 18.62 | 110000 | J |
| 11. | UNKNOWN HYDROCARBON | 19.07 | 170000 | J |
| 12. | UNKNOWN HYDROCARBON | 19.77 | 480000 | J |
| 13. | UNKNOWN HYDROCARBON | 19.94 | 170000 | J |
| 14. | UNKNOWN HYDROCARBON | 20.32 | 340000 | J |
| 15. | UNKNOWN HYDROCARBON | 20.44 | 380000 | J |
| 16. | UNKNOWN HYDROCARBON | 20.57 | 310000 | J |
| 17. | UNKNOWN HYDROCARBON | 20.67 | 240000 | J |
| 18. | UNKNOWN HYDROCARBON | 20.84 | 220000 | J |
| 19. | UNKNOWN HYDROCARBON | 21.14 | 460000 | J |
| 20. | UNKNOWN HYDROCARBON | 21.32 | 160000 | J |
| 21. | UNKNOWN HYDROCARBON | 21.67 | 390000 | J |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA12

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH01

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 31 Date Analyzed: 12/27/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 6

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | CYCLIC UNKNOWN HYDROCARBON | 7.48 | 11 | J |
| 2. | UNKNOWN HYDROCARBON | 15.15 | 11 | J |
| 3. | UNKNOWN HYDROCARBON | 15.34 | 6.9 | J |
| 4. | UNKNOWN HYDROCARBON | 15.94 | 260 | J |
| 5. | UNKNOWN HYDROCARBON | 16.20 | 39 | J |
| 6. | UNKNOWN HYDROCARBON | 16.45 | 65 | J |

000016

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA12RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH01RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH01R1

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 31 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 14 | U |
| 74-83-9 | Bromomethane | 14 | U |
| 75-01-4 | Vinyl Chloride | 14 | U |
| 75-00-3 | Chloroethane | 14 | U |
| 75-09-2 | Methylene Chloride | 30 | ~~B~~ U |
| 67-64-1 | Acetone | 14 | U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 78-93-3 | 2-Butanone | 14 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 108-05-4 | Vinyl Acetate | 14 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 14 | U |
| 591-78-6 | 2-Hexanone | 14 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |
| 108-88-3 | Toluene | 4 | J |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 1330-20-7 | Xylene (total) | 7 | U |

RK 2/14/91

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA12RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH01RE

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH01R1

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 31  Date Analyzed: 12/29/90

Column (pack/cap) CAP  Dilution Factor: 1.0

Number TICs found: 5  CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 6.08 | 1.0 | J |
| 2. | UNKNOWN HYDROCARBON | 7.48 | 5.7 | J |
| 3. | CYCLIC UNKNOWN HYDROCARBON | 15.94 | 180 | J |
| 4. | UNKNOWN HYDROCARBON | 16.20 | 41 | J |
| 5. | UNKNOWN HYDROCARBON | 16.45 | 55 | J |

000048

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA13

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH02

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH02

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 35  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 48 | ~~B~~ U |
| 67-64-1 | Acetone | 20 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 8 | U |
| 75-35-4 | 1,1-Dichloroethene | 8 | U |
| 75-34-3 | 1,1-Dichloroethane | 8 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 8 | U |
| 67-66-3 | Chloroform | 8 | U |
| 107-06-2 | 1,2-Dichloroethane | 8 | U |
| 78-93-3 | 2-Butanone | 15 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 8 | U |
| 56-23-5 | Carbon Tetrachloride | 8 | U |
| 108-05-4 | Vinyl Acetate | 15 | U |
| 75-27-4 | Bromodichloromethane | 8 | U |
| 78-87-5 | 1,2-Dichloropropane | 8 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 8 | U |
| 79-01-6 | Trichloroethene | 8 | U |
| 124-48-1 | Dibromochloromethane | 8 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 8 | U |
| 71-43-2 | Benzene | 8 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 8 | U |
| 75-25-2 | Bromoform | 8 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 8 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 8 | U |
| 108-88-3 | Toluene | 10 | |
| 108-90-7 | Chlorobenzene | 8 | U |
| 100-41-4 | Ethylbenzene | 8 | U |
| 100-42-5 | Styrene | 8 | U |
| 1330-20-7 | Xylene (total) | 8 | U |

RK 2-14-91

000077

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA13

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH02

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 35 dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

Number TICs found: 20

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN KETONE | 6.72 | 3000 | BJ |
| 2. | UNKNOWN KETONE | 6.95 | 800 | BJ |
| 3. | UNKNOWN KETONE | 7.25 | 1400 | BJ |
| 4. | UNKNOWN KETONE | 7.90 | 570 | BJ |
| 5. | UNKNOWN KETONE | 8.70 | 660 | J |
| 6. 103-82-2 | BENZENEACETIC ACID | 11.02 | 350 | J |
| 7. | NAPHTHALENEDIONE,-HYDROXY- | 13.70 | 720 | J |
| 8. | FATTY ACID | 17.04 | 340 | J |
| 9. 60-57-1 | DIELDRIN | 18.97 | 11000 | J |
| 10. | UNKNOWN HYDROCARBON | 20.44 | 620 | J |
| 11. | UNKNOWN HYDROCARBON | 21.64 | 1900 | J |
| 12. | UNKNOWN HYDROCARBON | 22.64 | 860 | J |
| 13. | UNKNOWN HYDROCARBON | 23.10 | 2100 | J |
| 14. | UNKNOWN HYDROCARBON | 23.17 | 1300 | J |
| 15. | UNKNOWN | 24.39 | 450 | J |
| 16. | UNKNOWN HYDROCARBON | 25.22 | 2200 | J |
| 17. | UNKNOWN HYDROCARBON | 25.36 | 530 | J |
| 18. | UNKNOWN STEROL | 27.54 | 920 | J |
| 19. | UNKNOWN HYDROCARBON | 28.37 | 500 | J |
| 20. | UNKNOWN STEROL | 29.57 | 1900 | J |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA13

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH02

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH02

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 35 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000078

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA13RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH02RE

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH02R

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 35  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 12 | ~~B~~ U |
| 67-64-1 | Acetone | 15 | U |
| 75-15-0 | Carbon Disulfide | 8 | U |
| 75-35-4 | 1,1-Dichloroethene | 8 | U |
| 75-34-3 | 1,1-Dichloroethane | 8 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 8 | U |
| 67-66-3 | Chloroform | 8 | U |
| 107-06-2 | 1,2-Dichloroethane | 8 | U |
| 78-93-3 | 2-Butanone | 15 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 8 | U |
| 56-23-5 | Carbon Tetrachloride | 8 | U |
| 108-05-4 | Vinyl Acetate | 15 | U |
| 75-27-4 | Bromodichloromethane | 8 | U |
| 78-87-5 | 1,2-Dichloropropane | 8 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 8 | U |
| 79-01-6 | Trichloroethene | 8 | U |
| 124-48-1 | Dibromochloromethane | 8 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 8 | U |
| 71-43-2 | Benzene | 8 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 8 | U |
| 75-25-2 | Bromoform | 8 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 8 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 8 | U |
| 108-88-3 | Toluene | 8 | U |
| 108-90-7 | Chlorobenzene | 8 | U |
| 100-41-4 | Ethylbenzene | 8 | U |
| 100-42-5 | Styrene | 8 | U |
| 1330-20-7 | Xylene (total) | 8 | U |

RK 2-14-91

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA13RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH02RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH02R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 35 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

000092

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA14

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH03

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH03R

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 14  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 25 | ~~B~~ U |
| 67-64-1 | Acetone | ~~12~~ 7 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 6 | |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | 6 | U |

RK 2/1/91

000101

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA14

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH03

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 14 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

Number TICs found: 19

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN KETONE | 6.72 | 2300 | BJ |
| 2. | UNKNOWN KETONE | 6.95 | 470 | BJ |
| 3. | UNKNOWN KETONE | 7.22 | 610 | BJ |
| 4. | UNKNOWN KETONE | 7.82 | 190 | J |
| 5. | UNKNOWN KETONE | 7.88 | 590 | BJ |
| 6. | UNKNOWN KETONE | 8.69 | 350 | J |
| 7. | UNKNOWN HYDROCARBON | 15.12 | 250 | J |
| 8. | UNKNOWN PNA (MW 216) | 19.14 | 210 | J |
| 9. | UNKNOWN PNA (MW 216) | 19.25 | 140 | J |
| 10. | UNKNOWN HYDROCARBON | 20.44 | 170 | J |
| 11. | UNKNOWN HYDROCARBON | 21.60 | 470 | J |
| 12. | UNKNOWN HYDROCARBON | 22.27 | 510 | J |
| 13. | UNKNOWN HYDROCARBON | 22.62 | 230 | J |
| 14. | UNKNOWN HYDROCARBON + UNKNOW | 23.07 | 460 | J |
| 15. | UNKNOWN HYDROCARBON | 23.15 | 390 | J |
| 16. | UNKNOWN PNA (MW 252) | 23.50 | 350 | J |
| 17. | UNKNOWN HYDROCARBON | 25.21 | 250 | J |
| 18. | UNKNOWN PNA (MW 276) | 27.41 | 450 | J |
| 19. | UNKNOWN | 29.54 | 510 | J |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA14

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH03

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH03R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 14 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

000102

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH04

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 41 | ~~B~~ U |
| 67-64-1 | Acetone | 15 | U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 78-93-3 | 2-Butanone | 15 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 108-05-4 | Vinyl Acetate | 15 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |
| 108-88-3 | Toluene | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 1330-20-7 | Xylene (total) | 7 | U |

RK 2/14/91

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA15

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH04R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

Number TICs found: 20

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 17.44 | 2500 | J |
| 2. | 1,1-BIPHENYL, -PENTACHLORO- | 19.05 | 2300 | J |
| 3. | UNKNOWN HYDROCARBON | 19.84 | 1900 | J |
| 4. | UNKNOWN | 19.99 | 2900 | J |
| 5. | UNKNOWN | 20.10 | 4300 | J |
| 6. | UNKNOWN | 20.24 | 2100 | J |
| 7. | UNKNOWN | 20.37 | 6000 | J |
| 8. | UNKNOWN | 20.50 | 4600 | J |
| 9. | UNKNOWN | 20.65 | 9700 | J |
| 10. | UNKNOWN | 20.84 | 3700 | J |
| 11. | UNKNOWN | 20.97 | 1900 | J |
| 12. | UNKNOWN | 21.35 | 3500 | J |
| 13. | UNKNOWN | 21.67 | 1900 | J |
| 14. | UNKNOWN | 22.45 | 4900 | J |
| 15. | UNKNOWN | 22.64 | 2000 | J |
| 16. | UNKNOWN | 22.77 | 3300 | J |
| 17. | UNKNOWN HYDROCARBON | 23.62 | 5000 | J |
| 18. | UNKNOWN | 25.92 | 3500 | J |
| 19. | UNKNOWN | 26.69 | 4700 | J |
| 20. | UNKNOWN | 33.64 | 2100 | J |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA15

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH04

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000116

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH04R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 9 | ~~B~~ U |
| 67-64-1 | Acetone | ~~8~~ 15 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 78-93-3 | 2-Butanone | 15 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 108-05-4 | Vinyl Acetate | 15 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |
| 108-88-3 | Toluene | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 1330-20-7 | Xylene (total) | 7 | U |

RK 2/19/91

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA15RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH04R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000126

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA16

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH05

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 32 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 43 | ~~B~~ U |
| 67-64-1 | Acetone | 39 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 78-93-3 | 2-Butanone | 15 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 108-05-4 | Vinyl Acetate | 15 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |
| 108-88-3 | Toluene | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 1330-20-7 | Xylene (total) | 7 | U |

RK 2-14-91



FORM I VOA 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA16

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH05

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 32 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

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

Number TICs found: 20

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN KETONE | 6.23 | 2500 | BJ |
| 2. | UNKNOWN KETONE | 6.87 | 1700 | BJ |
| 3. | UNKNOWN PNA (MW 192) | 17.45 | 1100 | J |
| 4. | MIXTURE UNKNOWN PNA (MW 190 | 17.62 | 1300 | J |
| 5. | UNKNOWN PNA (MW 204) | 17.97 | 580 | J |
| 6. | UNKNOWN PNA (MW 216) | 19.80 | 3100 | J |
| 7. | MIXTURE UNKNOWN PNA (MW 216 | 20.00 | 1200 | J |
| 8. | UNKNOWN PNA (MW 216) | 20.17 | 1300 | J |
| 9. | UNKNOWN | 20.49 | 2000 | J |
| 10. | UNKNOWN PNA (MW 230) | 20.62 | 2700 | J |
| 11. | UNKNOWN | 20.70 | 1800 | J |
| 12. | UNKNOWN PNA (MW 230) | 20.79 | 2200 | J |
| 13. | UNKNOWN PNA (MW 234) | 21.02 | 1300 | J |
| 14. | UNKNOWN PNA (MW 228) | 21.09 | 1500 | J |
| 15. | FATTY ACID ESTER | 21.17 | 2000 | J |
| 16. | UNKNOWN PNA (MW 228) | 21.60 | 12000 | J |
| 17. | UNKNOWN PNA (MW 228) | 21.92 | 1800 | J |
| 18. | UNKNOWN PNA (MW 252) | 26.57 | 2600 | J |
| 19. | UNKNOWN KETONE | 6.55 | 730 | J |
| 20. | UNKNOWN KETONE | 7.65 | 1500 | BJ |

000385

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA16

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH05

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 32 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000138

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA16RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH05RE

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH05R

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 32  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 11 | ~~B~~ U |
| 67-64-1 | Acetone | 14 | ~~BJ~~ U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 78-93-3 | 2-Butanone | 15 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 108-05-4 | Vinyl Acetate | 15 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |
| 108-88-3 | Toluene | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 1330-20-7 | Xylene (total) | 7 | U |

RK 2-14-91

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA16RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH05RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH05R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 32 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH06

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 60 | ~~B~~ U |
| 67-64-1 | Acetone | 12 ~~7~~ | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 22 | |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | 6 | U |

U RK 2-4-91

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB73

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH06

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH06

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 20  Date Analyzed: 12/29/90

Column (pack/cap) CAP  Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000162

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB73

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH06

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

Number TICs found: 21

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 17.47 | 3300 | J |
| 2. | UNKNOWN HYDROCARBON | 17.69 | 2700 | J |
| 3. | UNKNOWN | 19.57 | 1400 | J |
| 4. | UNKNOWN | 19.99 | 4100 | J |
| 5. | UNKNOWN | 20.14 | 2300 | J |
| 6. | UNKNOWN PNA (MW 216) | 20.29 | 4600 | J |
| 7. | UNKNOWN | 20.39 | 9500 | J |
| 8. | UNKNOWN | 20.59 | 10000 | J |
| 9. | UNKNOWN HYDROCARBON | 20.69 | 8200 | J |
| 10. | UNKNOWN HYDROCARBON | 20.84 | 5400 | J |
| 11. | UNKNOWN HYDROCARBON | 21.00 | 2200 | J |
| 12. | UNKNOWN | 21.30 | 2500 | J |
| 13. | UNKNOWN | 22.45 | 4700 | J |
| 14. | UNKNOWN | 22.59 | 1900 | J |
| 15. | UNKNOWN | 22.77 | 2200 | J |
| 16. | UNKNOWN | 23.60 | 3900 | J |
| 17. | UNKNOWN | 24.92 | 1200 | J |
| 18. | UNKNOWN STEROL | 25.87 | 3500 | J |
| 19. | UNKNOWN | 26.24 | 1100 | J |
| 20. | UNKNOWN | 26.67 | 4400 | J |
| 21. | UNKNOWN | 28.14 | 1300 | J |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH06RE

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFHN06R

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 20  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 27 | ~~B~~ U |
| 67-64-1 | Acetone | ~~6~~ 12 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 8 | |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | 6 | U |

RK 2/4-91

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB73RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFHN06R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000178

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB74

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH07

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH07

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 19  Date Analyzed: 12/29/90

Column: (pack/cap) CAP  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 100 | ~~B~~ ~~10~~ |
| 67-64-1 | Acetone | 12 ~~10~~ | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 39 | |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | 6 | U |

RK 2-14-91

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB74

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: ENH07

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VOFNH07

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 19  Date Analyzed: 12/29/90

Column (pack/cap) CAP  Dilution Factor: 1.0

Number TICs found: 0  CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000188

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB74

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH07

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

Number TICs found: 21

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 17.69 | 760 | J |
| 2. | UNKNOWN HYDROCARBON | 18.29 | 580 | J |
| 3. | UNKNOWN HYDROCARBON | 19.14 | 700 | J |
| 4. 25429-29-2 | 1,1-BIPHENYL, PENTACHLORO + | 19.64 | 950 | J |
| 5. | UNKNOWN | 19.85 | 620 | J |
| 6. | UNKNOWN HYDROCARBON | 20.14 | 1400 | J |
| 7. | UNKNOWN | 20.45 | 5600 | J |
| 8. | UNKNOWN | 20.54 | 2500 | J |
| 9. | UNKNOWN HYDROCARBON | 20.67 | 3800 | J |
| 10. | UNKNOWN HYDROCARBON | 20.85 | 1400 | J |
| 11. | UNKNOWN HYDROCARBON | 20.99 | 840 | J |
| 12. | UNKNOWN | 21.12 | 770 | J |
| 13. | UNKNOWN HYDROCARBON | 21.52 | 840 | J |
| 14. | UNKNOWN | 21.82 | 630 | J |
| 15. 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 22.02 | 1200 | J |
| 16. | UNKNOWN HYDROCARBON | 22.50 | 540 | J |
| 17. | UNKNOWN HYDROCARBON | 23.10 | 940 | J |
| 18. | UNKNOWN | 23.57 | 1400 | J |
| 19. | UNKNOWN | 23.64 | 580 | J |
| 20. | UNKNOWN | 26.01 | 1900 | J |
| 21. | UNKNOWN HYDROCARBON | 26.76 | 1100 | J |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB75

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH08R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 53 | ~~B~~ N |
| 67-64-1 | Acetone | 12 | U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 5 | J |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | 6 | U |

AK 2-14-91

000201

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB75

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH08R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000202

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB75RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH08R1

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 Date Analyzed: 12/29/90

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 52 | ~~B~~ W |
| 67-64-1 | Acetone | 12 | U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 10 | |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | 6 | U |

RK 2-14-91

000213

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB75RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VOFNH08R1

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 Date Analyzed: 12/29/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

000214

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA12

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH01

Sample wt/vol: 2.0 (g/mL) G Lab File ID: SVFNH01

Level: (low/med) MED Date Received: 12/19/90

% Moisture: not dec. 31 dec. Date Extracted: 12/21/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/07/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~2.6~~ 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 29000 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 29000 | U |
| 95-57-8 | 2-Chlorophenol | 29000 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 29000 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 29000 | U |
| 100-51-6 | Benzyl Alcohol | 29000 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 29000 | U |
| 95-48-7 | 2-Methylphenol | 29000 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 29000 | U |
| 106-44-5 | 4-Methylphenol | 29000 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 29000 | U |
| 67-72-1 | Hexachloroethane | 29000 | U |
| 98-95-3 | Nitrobenzene | 29000 | U |
| 78-59-1 | Isophorone | 29000 | U |
| 88-75-5 | 2-Nitrophenol | 29000 | U |
| 105-67-9 | 2,4-Dimethylphenol | 29000 | U |
| 65-85-0 | Benzoic Acid | 140000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 29000 | U |
| 120-83-2 | 2,4-Dichlorophenol | 29000 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 29000 | U |
| 91-20-3 | Naphthalene | 29000 | U |
| 106-47-8 | 4-Chloroaniline | 29000 | U |
| 87-68-3 | Hexachlorobutadiene | 29000 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 29000 | U |
| 91-57-6 | 2-Methylnaphthalene | 29000 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 29000 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 29000 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 140000 | U |
| 91-58-7 | 2-Chloronaphthalene | 29000 | U |
| 88-74-4 | 2-Nitroaniline | 140000 | U |
| 131-11-3 | Dimethyl Phthalate | 29000 | U |
| 208-96-8 | Acenaphthylene | 29000 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 29000 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA12

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH01

Sample wt/vol: 2.0 (g/mL) G  Lab File ID: SVFNH01

Level: (low/med) MED  Date Received: 12/19/90

% Moisture: not dec. 31  dec.  Date Extracted: 12/21/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/07/91

GPC Cleanup: (Y/N) N  pH: 7.0  Dilution Factor: 2/0 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 140000 | U |
| 83-32-9 | Acenaphthene | 29000 | U |
| 51-28-5 | 2,4-Dinitrophenol | 140000 | U |
| 100-02-7 | 4-Nitrophenol | 140000 | U |
| 132-64-9 | Dibenzofuran | 29000 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 29000 | U |
| 84-66-2 | Diethylphthalate | 29000 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 29000 | U |
| 86-73-7 | Fluorene | 29000 | U |
| 100-01-6 | 4-Nitroaniline | 140000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 140000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 29000 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 29000 | U |
| 118-74-1 | Hexachlorobenzene | 29000 | U |
| 87-86-5 | Pentachlorophenol | 140000 | U |
| 85-01-8 | Phenanthrene | 29000 | U |
| 120-12-7 | Anthracene | 29000 | U |
| 84-74-2 | Di-n-Butylphthalate | 29000 | U |
| 206-44-0 | Fluoranthene | 29000 | U |
| 129-00-0 | Pyrene | 29000 | U |
| 85-68-7 | Butylbenzylphthalate | 29000 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 57000 | U |
| 56-55-3 | Benzo(a)Anthracene | 29000 | U |
| 218-01-9 | Chrysene | 29000 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 15000 | J |
| 117-84-0 | Di-n-Octyl Phthalate | 29000 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 29000 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 29000 | U |
| 50-32-8 | Benzo(a)Pyrene | 29000 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 29000 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 29000 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 29000 | U |

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA13

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH02

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 35 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 510 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 510 | U |
| 95-57-8 | 2-Chlorophenol | 510 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 510 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 510 | U |
| 100-51-6 | Benzyl Alcohol | 510 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 510 | U |
| 95-48-7 | 2-Methylphenol | 510 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 510 | U |
| 106-44-5 | 4-Methylphenol | 510 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 510 | U |
| 67-72-1 | Hexachloroethane | 510 | U |
| 98-95-3 | Nitrobenzene | 510 | U |
| 78-59-1 | Isophorone | 510 | U |
| 88-75-5 | 2-Nitrophenol | 510 | U |
| 105-67-9 | 2,4-Dimethylphenol | 510 | U |
| 65-85-0 | Benzoic Acid | 2500 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 510 | U |
| 120-83-2 | 2,4-Dichlorophenol | 510 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 510 | U |
| 91-20-3 | Naphthalene | 510 | U |
| 106-47-8 | 4-Chloroaniline | 510 | U |
| 87-68-3 | Hexachlorobutadiene | 510 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 510 | U |
| 91-57-6 | 2-Methylnaphthalene | 510 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 510 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 510 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 2500 | U |
| 91-58-7 | 2-Chloronaphthalene | 510 | U |
| 88-74-4 | 2-Nitroaniline | 2500 | U |
| 131-11-3 | Dimethyl Phthalate | 510 | U |
| 208-96-8 | Acenaphthylene | 510 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 510 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA13

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH02

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 35 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 2500 | U |
| 83-32-9 | Acenaphthene | 510 | U |
| 51-28-5 | 2,4-Dinitrophenol | 2500 | U |
| 100-02-7 | 4-Nitrophenol | 2500 | U |
| 132-64-9 | Dibenzofuran | 510 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 510 | U |
| 84-66-2 | Diethylphthalate | 510 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 510 | U |
| 86-73-7 | Fluorene | 510 | U |
| 100-01-6 | 4-Nitroaniline | 2500 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 2500 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 510 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 510 | U |
| 118-74-1 | Hexachlorobenzene | 510 | U |
| 87-86-5 | Pentachlorophenol | 2500 | U |
| 85-01-8 | Phenanthrene | 510 | U |
| 120-12-7 | Anthracene | 510 | U |
| 84-74-2 | Di-n-Butylphthalate | 510 | U |
| 206-44-0 | Fluoranthene | 510 | U |
| 129-00-0 | Pyrene | 510 | U |
| 85-68-7 | Butylbenzylphthalate | 510 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1000 | U |
| 56-55-3 | Benzo(a)Anthracene | 510 | U |
| 218-01-9 | Chrysene | 510 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 510 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 510 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 510 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 510 | U |
| 50-32-8 | Benzo(a)Pyrene | 510 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 510 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 510 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 510 | U |

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA14

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH03

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVFNH03

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 14  dec. _____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N  pH: 7.2  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 380 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 380 | U |
| 95-57-8 | 2-Chlorophenol | 380 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 380 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 380 | U |
| 100-51-6 | Benzyl Alcohol | 380 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 380 | U |
| 95-48-7 | 2-Methylphenol | 380 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 380 | U |
| 106-44-5 | 4-Methylphenol | 380 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 380 | U |
| 67-72-1 | Hexachloroethane | 380 | U |
| 98-95-3 | Nitrobenzene | 380 | U |
| 78-59-1 | Isophorone | 380 | U |
| 88-75-5 | 2-Nitrophenol | 380 | U |
| 105-67-9 | 2,4-Dimethylphenol | 380 | U |
| 65-85-0 | Benzoic Acid | 1900 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 380 | U |
| 120-83-2 | 2,4-Dichlorophenol | 380 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 380 | U |
| 91-20-3 | Naphthalene | 380 | U |
| 106-47-8 | 4-Chloroaniline | 380 | U |
| 87-68-3 | Hexachlorobutadiene | 380 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 380 | U |
| 91-57-6 | 2-Methylnaphthalene | 380 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 380 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 380 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1900 | U |
| 91-58-7 | 2-Chloronaphthalene | 380 | U |
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 131-11-3 | Dimethyl Phthalate | 380 | U |
| 208-96-8 | Acenaphthylene | 380 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 380 | U |

000162

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA14

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH03

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVFNH03

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 14  dec.  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N  pH: 7.2  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 380 | U |
| 51-28-5 | 2,4-Dinitrophenol | 1900 | U |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 380 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 380 | U |
| 84-66-2 | Diethylphthalate | 380 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 380 | U |
| 86-73-7 | Fluorene | 380 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 1900 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 380 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 380 | U |
| 118-74-1 | Hexachlorobenzene | 380 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 380 | U |
| 120-12-7 | Anthracene | 380 | U |
| 84-74-2 | Di-n-Butylphthalate | 380 | U |
| 206-44-0 | Fluoranthene | 840 | |
| 129-00-0 | Pyrene | 630 | |
| 85-68-7 | Butylbenzylphthalate | 380 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 770 | U |
| 56-55-3 | Benzo(a)Anthracene | 360 | J |
| 218-01-9 | Chrysene | 620 | |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 380 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 380 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 690 | |
| 207-08-9 | Benzo(k)Fluoranthene | 620 | |
| 50-32-8 | Benzo(a)Pyrene | 410 | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 220 | J |
| 53-70-3 | Dibenz(a,h)Anthracene | 380 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 250 | J |

(1) - Cannot be separated from Diphenylamine

000163

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH04R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 980 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 980 | U |
| 95-57-8 | 2-Chlorophenol | 980 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 980 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 980 | U |
| 100-51-6 | Benzyl Alcohol | 980 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 980 | U |
| 95-48-7 | 2-Methylphenol | 980 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 980 | U |
| 106-44-5 | 4-Methylphenol | 980 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 980 | U |
| 67-72-1 | Hexachloroethane | 980 | U |
| 98-95-3 | Nitrobenzene | 980 | U |
| 78-59-1 | Isophorone | 980 | U |
| 88-75-5 | 2-Nitrophenol | 980 | U |
| 105-67-9 | 2,4-Dimethylphenol | 980 | U |
| 65-85-0 | Benzoic Acid | 4800 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 980 | U |
| 120-83-2 | 2,4-Dichlorophenol | 980 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 980 | U |
| 91-20-3 | Naphthalene | 980 | U |
| 106-47-8 | 4-Chloroaniline | 980 | U |
| 87-68-3 | Hexachlorobutadiene | 980 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 980 | U |
| 91-57-6 | 2-Methylnaphthalene | 980 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 980 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 980 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 4800 | U |
| 91-58-7 | 2-Chloronaphthalene | 980 | U |
| 88-74-4 | 2-Nitroaniline | 4800 | U |
| 131-11-3 | Dimethyl Phthalate | 980 | U |
| 208-96-8 | Acenaphthylene | 980 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 980 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH04R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 4800 | U |
| 83-32-9 | Acenaphthene | 980 | U |
| 51-28-5 | 2,4-Dinitrophenol | 4800 | U |
| 100-02-7 | 4-Nitrophenol | 4800 | U |
| 132-64-9 | Dibenzofuran | 980 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 980 | U |
| 84-66-2 | Diethylphthalate | 980 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 980 | U |
| 86-73-7 | Fluorene | 980 | U |
| 100-01-6 | 4-Nitroaniline | 4800 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 4800 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 980 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 980 | U |
| 118-74-1 | Hexachlorobenzene | 980 | U |
| 87-86-5 | Pentachlorophenol | 4800 | U |
| 85-01-8 | Phenanthrene | 980 | U |
| 120-12-7 | Anthracene | 980 | U |
| 84-74-2 | Di-n-Butylphthalate | 9200 | |
| 206-44-0 | Fluoranthene | 980 | U |
| 129-00-0 | Pyrene | 980 | U |
| 85-68-7 | Butylbenzylphthalate | 980 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 2000 | U |
| 56-55-3 | Benzo(a)Anthracene | 980 | U |
| 218-01-9 | Chrysene | 980 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 980 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 980 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 980 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 980 | U |
| 50-32-8 | Benzo(a)Pyrene | 980 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 980 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 980 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 980 | U |

(1) - Cannot be separated from Diphenylamine

000246

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENA15RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH04R2

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

Number TICs found: 20

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 17.52 | 3700 | J |
| 2. | UNKNOWN | 18.25 | 1600 | J |
| 3. | UNKNOWN | 19.34 | 3300 | J |
| 4. | UNKNOWN | 19.45 | 3900 | J |
| 5. 25429-29-2 | 1,1-BIPHENYL, PENTACHLORO- | 19.65 | 9800 | J |
| 6. | UNKNOWN | 19.77 | 6100 | J |
| 7. | UNKNOWN | 19.85 | 7100 | J |
| 8. | UNKNOWN | 19.99 | 8900 | J |
| 9. | UNKNOWN | 20.09 | 5300 | J |
| 10. | UNKNOWN | 20.20 | 6700 | J |
| 11. 26601-64-9 | 1,1-BIPHENYL, HEXACHLORO- | 20.35 | 9300 | J |
| 12. | UNKNOWN | 20.45 | 8000 | J |
| 13. | UNKNOWN | 20.57 | 5600 | J |
| 14. | UNKNOWN | 20.67 | 5300 | J |
| 15. 26601-64-9 | 1,1-BIPHENYL,-HEXACHLORO- | 20.82 | 2100 | J |
| 16. | UNKNOWN | 20.95 | 1900 | J |
| 17. | UNKNOWN | 21.10 | 1600 | J |
| 18. | UNKNOWN | 21.39 | 1800 | J |
| 19. | UNKNOWN | 22.55 | 6000 | J |
| 20. | UNKNOWN | 17.90 | 2500 | J |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH04R2

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 980 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 980 | U |
| 95-57-8 | 2-Chlorophenol | 980 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 980 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 980 | U |
| 100-51-6 | Benzyl Alcohol | 980 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 980 | U |
| 95-48-7 | 2-Methylphenol | 980 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 980 | U |
| 106-44-5 | 4-Methylphenol | 980 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 980 | U |
| 67-72-1 | Hexachloroethane | 980 | U |
| 98-95-3 | Nitrobenzene | 980 | U |
| 78-59-1 | Isophorone | 980 | U |
| 88-75-5 | 2-Nitrophenol | 980 | U |
| 105-67-9 | 2,4-Dimethylphenol | 980 | U |
| 65-85-0 | Benzoic Acid | 4800 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 980 | U |
| 120-83-2 | 2,4-Dichlorophenol | 980 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 980 | U |
| 91-20-3 | Naphthalene | 980 | U |
| 106-47-8 | 4-Chloroaniline | 980 | U |
| 87-68-3 | Hexachlorobutadiene | 980 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 980 | U |
| 91-57-6 | 2-Methylnaphthalene | 980 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 980 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 980 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 4800 | U |
| 91-58-7 | 2-Chloronaphthalene | 980 | U |
| 88-74-4 | 2-Nitroaniline | 4800 | U |
| 131-11-3 | Dimethyl Phthalate | 980 | U |
| 208-96-8 | Acenaphthylene | 980 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 980 | U |

000315

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH04RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH04R2

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 33 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 4800 | U |
| 83-32-9 | Acenaphthene | 980 | U |
| 51-28-5 | 2,4-Dinitrophenol | 4800 | U |
| 100-02-7 | 4-Nitrophenol | 4800 | U |
| 132-64-9 | Dibenzofuran | 980 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 980 | U |
| 84-66-2 | Diethylphthalate | 980 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 980 | U |
| 86-73-7 | Fluorene | 980 | U |
| 100-01-6 | 4-Nitroaniline | 4800 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 4800 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 980 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 980 | U |
| 118-74-1 | Hexachlorobenzene | 980 | U |
| 87-86-5 | Pentachlorophenol | 4800 | U |
| 85-01-8 | Phenanthrene | 980 | U |
| 120-12-7 | Anthracene | 980 | U |
| 84-74-2 | Di-n-Butylphthalate | 9500 | |
| 206-44-0 | Fluoranthene | 980 | U |
| 129-00-0 | Pyrene | 980 | U |
| 85-68-7 | Butylbenzylphthalate | 980 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 2000 | U |
| 56-55-3 | Benzo(a)Anthracene | 980 | U |
| 218-01-9 | Chrysene | 980 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 980 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 980 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 980 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 980 | U |
| 50-32-8 | Benzo(a)Pyrene | 980 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 980 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 980 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 980 | U |

(1) - Cannot be separated from Diphenylamine

000316

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA16

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH05

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 32 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 960 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 960 | U |
| 95-57-8 | 2-Chlorophenol | 960 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 960 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 960 | U |
| 100-51-6 | Benzyl Alcohol | 960 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 960 | U |
| 95-48-7 | 2-Methylphenol | 960 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 960 | U |
| 106-44-5 | 4-Methylphenol | 960 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 960 | U |
| 67-72-1 | Hexachloroethane | 960 | U |
| 98-95-3 | Nitrobenzene | 960 | U |
| 78-59-1 | Isophorone | 960 | U |
| 88-75-5 | 2-Nitrophenol | 960 | U |
| 105-67-9 | 2,4-Dimethylphenol | 960 | U |
| 65-85-0 | Benzoic Acid | 4700 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 960 | U |
| 120-83-2 | 2,4-Dichlorophenol | 960 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 960 | U |
| 91-20-3 | Naphthalene | 580 | J |
| 106-47-8 | 4-Chloroaniline | 960 | U |
| 87-68-3 | Hexachlorobutadiene | 960 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 960 | U |
| 91-57-6 | 2-Methylnaphthalene | 340 | J |
| 77-47-4 | Hexachlorocyclopentadiene | 960 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 960 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 4700 | U |
| 91-58-7 | 2-Chloronaphthalene | 960 | U |
| 88-74-4 | 2-Nitroaniline | 4700 | U |
| 131-11-3 | Dimethyl Phthalate | 960 | U |
| 208-96-8 | Acenaphthylene | 960 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 960 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA16

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH05

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVFNH05

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 32  dec.  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/08/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 4700 | U |
| 83-32-9 | Acenaphthene | 970 | |
| 51-28-5 | 2,4-Dinitrophenol | 4700 | U |
| 100-02-7 | 4-Nitrophenol | 4700 | U |
| 132-64-9 | Dibenzofuran | 700 | J |
| 121-14-2 | 2,4-Dinitrotoluene | 960 | U |
| 84-66-2 | Diethylphthalate | 960 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 960 | U |
| 86-73-7 | Fluorene | 1200 | |
| 100-01-6 | 4-Nitroaniline | 4700 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 4700 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 960 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 960 | U |
| 118-74-1 | Hexachlorobenzene | 960 | U |
| 87-86-5 | Pentachlorophenol | 4700 | U |
| 85-01-8 | Phenanthrene | 10000 | |
| 120-12-7 | Anthracene | 2100 | |
| 84-74-2 | Di-n-Butylphthalate | 960 | U |
| 206-44-0 | Fluoranthene | 8100 | |
| 129-00-0 | Pyrene | 7500 | |
| 85-68-7 | Butylbenzylphthalate | 960 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1900 | U |
| 56-55-3 | Benzo(a)Anthracene | 3600 | |
| 218-01-9 | Chrysene | 4100 | |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 960 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 960 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 3700 | |
| 207-08-9 | Benzo(k)Fluoranthene | 3200 | |
| 50-32-8 | Benzo(a)Pyrene | 3800 | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 3000 | |
| 53-70-3 | Dibenz(a,h)Anthracene | 960 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 810 | J |

(1) - Cannot be separated from Diphenylamine

000385

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH06

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 820 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 820 | U |
| 95-57-8 | 2-Chlorophenol | 820 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 820 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 820 | U |
| 100-51-6 | Benzyl Alcohol | 820 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 820 | U |
| 95-48-7 | 2-Methylphenol | 820 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 820 | U |
| 106-44-5 | 4-Methylphenol | 820 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 820 | U |
| 67-72-1 | Hexachloroethane | 820 | U |
| 98-95-3 | Nitrobenzene | 820 | U |
| 78-59-1 | Isophorone | 820 | U |
| 88-75-5 | 2-Nitrophenol | 820 | U |
| 105-67-9 | 2,4-Dimethylphenol | 820 | U |
| 65-85-0 | Benzoic Acid | 4000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 820 | U |
| 120-83-2 | 2,4-Dichlorophenol | 820 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 820 | U |
| 91-20-3 | Naphthalene | 820 | U |
| 106-47-8 | 4-Chloroaniline | 820 | U |
| 87-68-3 | Hexachlorobutadiene | 820 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 820 | U |
| 91-57-6 | 2-Methylnaphthalene | 820 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 820 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 820 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 4000 | U |
| 91-58-7 | 2-Chloronaphthalene | 820 | U |
| 88-74-4 | 2-Nitroaniline | 4000 | U |
| 131-11-3 | Dimethyl Phthalate | 820 | U |
| 208-96-8 | Acenaphthylene | 820 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 820 | U |

000485

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH06

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 4000 | U |
| 83-32-9 | Acenaphthene | 820 | U |
| 51-28-5 | 2,4-Dinitrophenol | 4000 | U |
| 100-02-7 | 4-Nitrophenol | 4000 | U |
| 132-64-9 | Dibenzofuran | 820 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 820 | U |
| 84-66-2 | Diethylphthalate | 820 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 820 | U |
| 86-73-7 | Fluorene | 820 | U |
| 100-01-6 | 4-Nitroaniline | 4000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 4000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 820 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 820 | U |
| 118-74-1 | Hexachlorobenzene | 820 | U |
| 87-86-5 | Pentachlorophenol | 4000 | U |
| 85-01-8 | Phenanthrene | 740 | J |
| 120-12-7 | Anthracene | 210 | J |
| 84-74-2 | Di-n-Butylphthalate | 820 | U |
| 206-44-0 | Fluoranthene | 1700 | |
| 129-00-0 | Pyrene | 890 | |
| 85-68-7 | Butylbenzylphthalate | 820 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1600 | U |
| 56-55-3 | Benzo(a)Anthracene | 550 | J |
| 218-01-9 | Chrysene | 880 | |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 820 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 820 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 770 | J |
| 207-08-9 | Benzo(k)Fluoranthene | 1000 | |
| 50-32-8 | Benzo(a)Pyrene | 630 | J |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 820 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 820 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 820 | U |

(1) - Cannot be separated from Diphenylamine

000488

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH06R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 820 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 820 | U |
| 95-57-8 | 2-Chlorophenol | 820 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 820 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 820 | U |
| 100-51-6 | Benzyl Alcohol | 820 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 820 | U |
| 95-48-7 | 2-Methylphenol | 820 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 820 | U |
| 106-44-5 | 4-Methylphenol | 820 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 820 | U |
| 67-72-1 | Hexachloroethane | 820 | U |
| 98-95-3 | Nitrobenzene | 820 | U |
| 78-59-1 | Isophorone | 820 | U |
| 88-75-5 | 2-Nitrophenol | 820 | U |
| 105-67-9 | 2,4-Dimethylphenol | 820 | U |
| 65-85-0 | Benzoic Acid | 4000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 820 | U |
| 120-83-2 | 2,4-Dichlorophenol | 820 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 820 | U |
| 91-20-3 | Naphthalene | 820 | U |
| 106-47-8 | 4-Chloroaniline | 820 | U |
| 87-68-3 | Hexachlorobutadiene | 820 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 820 | U |
| 91-57-6 | 2-Methylnaphthalene | 820 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 820 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 820 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 4000 | U |
| 91-58-7 | 2-Chloronaphthalene | 820 | U |
| 88-74-4 | 2-Nitroaniline | 4000 | U |
| 131-11-3 | Dimethyl Phthalate | 820 | U |
| 208-96-8 | Acenaphthylene | 820 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 820 | U |

000575

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73RE

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: ____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH06RE

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVFNH06R

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 20  dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y  pH: 7.5  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 4000 | U |
| 83-32-9 | Acenaphthene | 820 | U |
| 51-28-5 | 2,4-Dinitrophenol | 4000 | U |
| 100-02-7 | 4-Nitrophenol | 4000 | U |
| 132-64-9 | Dibenzofuran | 820 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 820 | U |
| 84-66-2 | Diethylphthalate | 820 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 820 | U |
| 86-73-7 | Fluorene | 820 | U |
| 100-01-6 | 4-Nitroaniline | 4000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 4000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 820 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 820 | U |
| 118-74-1 | Hexachlorobenzene | 820 | U |
| 87-86-5 | Pentachlorophenol | 4000 | U |
| 85-01-8 | Phenanthrene | 880 | |
| 120-12-7 | Anthracene | 140 | J |
| 84-74-2 | Di-n-Butylphthalate | 820 | U |
| 206-44-0 | Fluoranthene | 1800 | |
| 129-00-0 | Pyrene | 900 | |
| 85-68-7 | Butylbenzylphthalate | 820 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1600 | U |
| 56-55-3 | Benzo(a)Anthracene | 1200 | |
| 218-01-9 | Chrysene | 1500 | |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 820 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 820 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 910 | |
| 207-08-9 | Benzo(k)Fluoranthene | 940 | |
| 50-32-8 | Benzo(a)Pyrene | 820 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 820 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 820 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 820 | U |

(1) - Cannot be separated from Diphenylamine

000576

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB73RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH06RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH06R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 20 dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

Number TICs found: 20

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 17.49 | 4600 | J |
| 2. | UNKNOWN | 17.70 | 2700 | J |
| 3. | UNKNOWN | 18.09 | 1600 | J |
| 4. | UNKNOWN | 18.27 | 1700 | J |
| 5. | UNKNOWN | 20.19 | 1500 | J |
| 6. | UNKNOWN | 20.42 | 9400 | J |
| 7. | UNKNOWN | 20.57 | 7000 | J |
| 8. | UNKNOWN | 20.69 | 7700 | J |
| 9. | UNKNOWN | 20.85 | 3300 | J |
| 10. | UNKNOWN | 21.37 | 1900 | J |
| 11. | UNKNOWN | 22.49 | 6100 | J |
| 12. | UNKNOWN | 22.70 | 2000 | J |
| 13. | UNKNOWN | 22.82 | 2200 | J |
| 14. | UNKNOWN HYDROCARBON | 23.64 | 5100 | J |
| 15. | UNKNOWN | 24.74 | 1100 | J |
| 16. | UNKNOWN | 25.00 | 1200 | J |
| 17. | UNKNOWN STEROL | 25.97 | 4300 | J |
| 18. | UNKNOWN | 26.32 | 2000 | J |
| 19. | UNKNOWN | 26.76 | 5600 | J |
| 20. | UNKNOWN | 27.46 | 1200 | J |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB74

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH07

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 410 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 410 | U |
| 95-57-8 | 2-Chlorophenol | 410 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 410 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 410 | U |
| 100-51-6 | Benzyl Alcohol | 410 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 410 | U |
| 95-48-7 | 2-Methylphenol | 410 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 410 | U |
| 106-44-5 | 4-Methylphenol | 410 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 410 | U |
| 67-72-1 | Hexachloroethane | 410 | U |
| 98-95-3 | Nitrobenzene | 410 | U |
| 78-59-1 | Isophorone | 410 | U |
| 88-75-5 | 2-Nitrophenol | 410 | U |
| 105-67-9 | 2,4-Dimethylphenol | 410 | U |
| 65-85-0 | Benzoic Acid | 2000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 410 | U |
| 120-83-2 | 2,4-Dichlorophenol | 410 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 410 | U |
| 91-20-3 | Naphthalene | 410 | U |
| 106-47-8 | 4-Chloroaniline | 410 | U |
| 87-68-3 | Hexachlorobutadiene | 410 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 410 | U |
| 91-57-6 | 2-Methylnaphthalene | 410 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 410 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 410 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 2000 | U |
| 91-58-7 | 2-Chloronaphthalene | 410 | U |
| 88-74-4 | 2-Nitroaniline | 2000 | U |
| 131-11-3 | Dimethyl Phthalate | 410 | U |
| 208-96-8 | Acenaphthylene | 410 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 410 | U |

000659

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB74

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH07

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 2000 | U |
| 83-32-9 | Acenaphthene | 410 | U |
| 51-28-5 | 2,4-Dinitrophenol | 2000 | U |
| 100-02-7 | 4-Nitrophenol | 2000 | U |
| 132-64-9 | Dibenzofuran | 410 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 410 | U |
| 84-66-2 | Diethylphthalate | 410 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 410 | U |
| 86-73-7 | Fluorene | 410 | U |
| 100-01-6 | 4-Nitroaniline | 2000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 2000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 410 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 410 | U |
| 118-74-1 | Hexachlorobenzene | 410 | U |
| 87-86-5 | Pentachlorophenol | 2000 | U |
| 85-01-8 | Phenanthrene | 190 | J |
| 120-12-7 | Anthracene | 410 | U |
| 84-74-2 | Di-n-Butylphthalate | 410 | U |
| 206-44-0 | Fluoranthene | 200 | J |
| 129-00-0 | Pyrene | 150 | J |
| 85-68-7 | Butylbenzylphthalate | 410 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 820 | U |
| 56-55-3 | Benzo(a)Anthracene | 410 | U |
| 218-01-9 | Chrysene | 410 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 590 | |
| 117-84-0 | Di-n-Octyl Phthalate | 410 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 410 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 410 | U |
| 50-32-8 | Benzo(a)Pyrene | 410 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 410 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 410 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 410 | U |

(1) - Cannot be separated from Diphenylamine

000360

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB74RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH07RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH07R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 410 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 410 | U |
| 95-57-8 | 2-Chlorophenol | 410 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 410 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 410 | U |
| 100-51-6 | Benzyl Alcohol | 410 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 410 | U |
| 95-48-7 | 2-Methylphenol | 410 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 410 | U |
| 106-44-5 | 4-Methylphenol | 410 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 410 | U |
| 67-72-1 | Hexachloroethane | 410 | U |
| 98-95-3 | Nitrobenzene | 410 | U |
| 78-59-1 | Isophorone | 410 | U |
| 88-75-5 | 2-Nitrophenol | 410 | U |
| 105-67-9 | 2,4-Dimethylphenol | 410 | U |
| 65-85-0 | Benzoic Acid | 2000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 410 | U |
| 120-83-2 | 2,4-Dichlorophenol | 410 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 410 | U |
| 91-20-3 | Naphthalene | 410 | U |
| 106-47-8 | 4-Chloroaniline | 410 | U |
| 87-68-3 | Hexachlorobutadiene | 410 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 410 | U |
| 91-57-6 | 2-Methylnaphthalene | 410 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 410 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 410 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 2000 | U |
| 91-58-7 | 2-Chloronaphthalene | 410 | U |
| 88-74-4 | 2-Nitroaniline | 2000 | U |
| 131-11-3 | Dimethyl Phthalate | 410 | U |
| 208-96-8 | Acenaphthylene | 410 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 410 | U |

000738

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB74RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH07RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH07R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 2000 | U |
| 83-32-9 | Acenaphthene | 410 | U |
| 51-28-5 | 2,4-Dinitrophenol | 2000 | U |
| 100-02-7 | 4-Nitrophenol | 2000 | U |
| 132-64-9 | Dibenzofuran | 410 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 410 | U |
| 84-66-2 | Diethylphthalate | 410 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 410 | U |
| 86-73-7 | Fluorene | 410 | U |
| 100-01-6 | 4-Nitroaniline | 2000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 2000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 410 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 410 | U |
| 118-74-1 | Hexachlorobenzene | 410 | U |
| 87-86-5 | Pentachlorophenol | 2000 | U |
| 85-01-8 | Phenanthrene | 200 | J |
| 120-12-7 | Anthracene | 410 | U |
| 84-74-2 | Di-n-Butylphthalate | 410 | U |
| 206-44-0 | Fluoranthene | 210 | J |
| 129-00-0 | Pyrene | 180 | J |
| 85-68-7 | Butylbenzylphthalate | 410 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 820 | U |
| 56-55-3 | Benzo(a)Anthracene | 410 | U |
| 218-01-9 | Chrysene | 410 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 710 | |
| 117-84-0 | Di-n-Octyl Phthalate | 410 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 410 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 410 | U |
| 50-32-8 | Benzo(a)Pyrene | 410 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 410 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 410 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 410 | U |

(1) - Cannot be separated from Diphenylamine

000739

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB74RE

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH07RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH07R

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

Number TICs found: 21

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 17.60 | 560 | J |
| 2. | UNKNOWN | 17.72 | 730 | J |
| 3. | UNKNOWN HYDROCARBON | 19.65 | 720 | J |
| 4. | UNKNOWN | 20.27 | 1100 | J |
| 5. | UNKNOWN | 20.45 | 3200 | J |
| 6. | UNKNOWN | 20.55 | 2800 | J |
| 7. | UNKNOWN HYDROCARBON | 20.67 | 3800 | J |
| 8. | UNKNOWN HYDROCARBON | 20.84 | 1400 | J |
| 9. | UNKNOWN | 20.97 | 800 | J |
| 10. | UNKNOWN | 21.12 | 780 | J |
| 11. | UNKNOWN HYDROCARBON | 21.59 | 1100 | J |
| 12. 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 22.09 | 1100 | J |
| 13. | UNKNOWN HYDROCARBON | 22.57 | 850 | J |
| 14. | UNKNOWN HYDROCARBON | 23.24 | 580 | J |
| 15. | UNKNOWN | 23.74 | 2900 | J |
| 16. | UNKNOWN | 26.21 | 2700 | J |
| 17. | UNKNOWN | 26.97 | 1700 | J |
| 18. | UNKNOWN | 28.51 | 1100 | J |
| 19. | UNKNOWN | 31.66 | 1100 | J |
| 20. | UNKNOWN | 34.14 | 600 | J |
| 21. | UNKNOWN HYDROCARBON | 39.94 | 940 | J |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB75

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH08

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 820 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 820 | U |
| 95-57-8 | 2-Chlorophenol | 820 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 820 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 820 | U |
| 100-51-6 | Benzyl Alcohol | 820 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 820 | U |
| 95-48-7 | 2-Methylphenol | 820 | U |
| 108-60-1 | bis(2-Chloroisopropyl)Ether | 820 | U |
| 106-44-5 | 4-Methylphenol | 820 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 820 | U |
| 67-72-1 | Hexachloroethane | 820 | U |
| 98-95-3 | Nitrobenzene | 820 | U |
| 78-59-1 | Isophorone | 820 | U |
| 88-75-5 | 2-Nitrophenol | 820 | U |
| 105-67-9 | 2,4-Dimethylphenol | 820 | U |
| 65-85-0 | Benzoic Acid | 4000 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 820 | U |
| 120-83-2 | 2,4-Dichlorophenol | 820 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 820 | U |
| 91-20-3 | Naphthalene | 820 | U |
| 106-47-8 | 4-Chloroaniline | 820 | U |
| 87-68-3 | Hexachlorobutadiene | 820 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 820 | U |
| 91-57-6 | 2-Methylnaphthalene | 820 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 820 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 820 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 4000 | U |
| 91-58-7 | 2-Chloronaphthalene | 820 | U |
| 88-74-4 | 2-Nitroaniline | 4000 | U |
| 131-11-3 | Dimethyl Phthalate | 820 | U |
| 208-96-8 | Acenaphthylene | 820 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 820 | U |

000817

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB75

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH08

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 4000 | U |
| 83-32-9 | Acenaphthene | 820 | U |
| 51-28-5 | 2,4-Dinitrophenol | 4000 | U |
| 100-02-7 | 4-Nitrophenol | 4000 | U |
| 132-64-9 | Dibenzofuran | 820 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 820 | U |
| 84-66-2 | Diethylphthalate | 820 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 820 | U |
| 86-73-7 | Fluorene | 820 | U |
| 100-01-6 | 4-Nitroaniline | 4000 | U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 4000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 820 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 820 | U |
| 118-74-1 | Hexachlorobenzene | 820 | U |
| 87-86-5 | Pentachlorophenol | 4000 | U |
| 85-01-8 | Phenanthrene | 420 | J |
| 120-12-7 | Anthracene | 330 | J |
| 84-74-2 | Di-n-Butylphthalate | 820 | U |
| 206-44-0 | Fluoranthene | 670 | J |
| 129-00-0 | Pyrene | 1500 | |
| 85-68-7 | Butylbenzylphthalate | 820 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1600 | U |
| 56-55-3 | Benzo(a)Anthracene | 340 | J |
| 218-01-9 | Chrysene | 580 | J |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 820 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 820 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 370 | J |
| 207-08-9 | Benzo(k)Fluoranthene | 350 | J |
| 50-32-8 | Benzo(a)Pyrene | 330 | J |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 820 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 820 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 820 | U |

(1) - Cannot be separated from Diphenylamine

000818

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ENB75

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH08

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH08

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 19 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/91

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.0

Number TICs found: 21

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 15.54 | 8100 | J |
| 2. | 1,1-BIPHENYL, -DIMETHYL- | 15.82 | 2500 | J |
| 3. | UNKNOWN HYDROCARBON | 15.89 | 2400 | J |
| 4. | UNKNOWN | 16.27 | 3500 | J |
| 5. | UNKNOWN HYDROCARBON | 16.42 | 16000 | J |
| 6. | UNKNOWN HYDROCARBON | 16.64 | 2900 | J |
| 7. | 9H-FLUORENE, -DIMETHYL- | 16.82 | 8900 | J |
| 8. | UNKNOWN | 16.92 | 4900 | J |
| 9. | UNKNOWN HYDROCARBON | 17.10 | 16000 | J |
| 10. | UNKNOWN HYDROCARBON + UNKNOW | 17.24 | 2700 | J |
| 11. | UNKNOWN HYDROCARBON + UNKNOW | 17.50 | 5100 | J |
| 12. | UNKNOWN PNA (MW 192) | 17.65 | 5500 | J |
| 13. | UNKNOWN | 17.74 | 5600 | J |
| 14. | UNKNOWN HYDROCARBON + UNKNOW | 17.90 | 4700 | J |
| 15. | UNKNOWN PNA (MW 212) | 18.09 | 7300 | J |
| 16. | UNKNOWN PNA (MW 206) | 18.42 | 8800 | J |
| 17. | UNKNOWN PNA (MW 206) | 18.54 | 11000 | J |
| 18. | UNKNOWN HYDROCARBON + UNKNOW | 20.09 | 2200 | J |
| 19. | UNKNOWN PNA (MW 216) | 20.22 | 1700 | J |
| 20. | UNKNOWN PNA (MW 234) | 20.40 | 1500 | J |
| 21. | UNKNOWN HYDROCARBON + UNKNOW | 20.62 | 2200 | J |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA12

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH01

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

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 31 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 72 | |
| 319-85-7 | beta-BHC | 23 | U |
| 319-86-8 | delta-BHC | 23 | U |
| 58-89-9 | gamma-BHC (Lindane) | 23 | U |
| 76-44-8 | Heptachlor | 23 | U |
| 309-00-2 | Aldrin | 23 | U |
| 1024-57-3 | Heptachlor epoxide | 23 | U |
| 959-98-8 | Endosulfan I | 23 | U |
| 60-57-1 | Dieldrin | 160 | |
| 72-55-9 | 4,4'-DDE | 51 | |
| 72-20-8 | Endrin | 80 | |
| 33213-65-9 | Endosulfan II | 46 | U |
| 72-54-8 | 4,4'-DDD | 46 | U |
| 1031-07-8 | Endosulfan sulfate | 65 | |
| 50-29-3 | 4,4'-DDT | 46 | U |
| 72-43-5 | Methoxychlor | 230 | U |
| 53494-70-5 | Endrin ketone | 55 | |
| 5103-71-9 | alpha-Chlordane | 230 | U |
| 5103-74-2 | gamma-Chlordane | 230 | U |
| 8001-35-2 | Toxaphene | 460 | U |
| 12674-11-2 | Aroclor-1016 | 230 | U |
| 11104-28-2 | Aroclor-1221 | 230 | U |
| 11141-16-5 | Aroclor-1232 | 230 | U |
| 53469-21-9 | Aroclor-1242 | 230 | U |
| 12672-29-6 | Aroclor-1248 | 230 | U |
| 11097-69-1 | Aroclor-1254 | 460 | U |
| 11096-82-5 | Aroclor-1260 | 460 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA13

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH02

Sample wt/vol: 30.0 (g/mL) G  Lab File ID: SVFNH02

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 35  dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) N  pH: 7.2  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 12 | U |
| 319-85-7 | beta-BHC | 12 | U |
| 319-86-8 | delta-BHC | 12 | U |
| 58-89-9 | gamma-BHC (Lindane) | 12 | U |
| 76-44-8 | Heptachlor | 12 | U |
| 309-00-2 | Aldrin | 12 | U |
| 1024-57-3 | Heptachlor epoxide | 12 | U |
| 959-98-8 | Endosulfan I | 12 | U |
| 60-57-1 | Dieldrin | 2000 | CX |
| 72-55-9 | 4,4'-DDE | 25 | U |
| 72-20-8 | Endrin | 240 | C |
| 33213-65-9 | Endosulfan II | 25 | U |
| 72-54-8 | 4,4'-DDD | 25 | U |
| 1031-07-8 | Endosulfan sulfate | 25 | U |
| 50-29-3 | 4,4'-DDT | 25 | U |
| 72-43-5 | Methoxychlor | 120 | U |
| 53494-70-5 | Endrin ketone | 25 | U |
| 5103-71-9 | alpha-Chlordane | 120 | U |
| 5103-74-2 | gamma-Chlordane | 120 | U |
| 8001-35-2 | Toxaphene | 250 | U |
| 12674-11-2 | Aroclor-1016 | 120 | U |
| 11104-28-2 | Aroclor-1221 | 120 | U |
| 11141-16-5 | Aroclor-1232 | 120 | U |
| 53469-21-9 | Aroclor-1242 | 120 | U |
| 12672-29-6 | Aroclor-1248 | 120 | U |
| 11097-69-1 | Aroclor-1254 | 250 | U |
| 11096-82-5 | Aroclor-1260 | 250 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA13DL

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: _____ SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH02DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SVFNH02

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 35 dec. ____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 100

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 1200 | U |
| 319-85-7 | beta-BHC | 1200 | U |
| 319-86-8 | delta-BHC | 1200 | U |
| 58-89-9 | gamma-BHC (Lindane) | 1200 | U |
| 76-44-8 | Heptachlor | 1200 | U |
| 309-00-2 | Aldrin | 1200 | U |
| 1024-57-3 | Heptachlor epoxide | 1200 | U |
| 959-98-8 | Endosulfan I | 1200 | U |
| 60-57-1 | Dieldrin | 24000 | CD |
| 72-55-9 | 4,4'-DDE | 2500 | U |
| 72-20-8 | Endrin | 2500 | U |
| 33213-65-9 | Endosulfan II | 2500 | U |
| 72-54-8 | 4,4'-DDD | 2500 | U |
| 1031-07-8 | Endosulfan sulfate | 2500 | U |
| 50-29-3 | 4,4'-DDT | 2500 | U |
| 72-43-5 | Methoxychlor | 12000 | U |
| 53494-70-5 | Endrin ketone | 2500 | U |
| 5103-71-9 | alpha-Chlordane | 12000 | U |
| 5103-74-2 | gamma-Chlordane | 12000 | U |
| 8001-35-2 | Toxaphene | 25000 | U |
| 12674-11-2 | Aroclor-1016 | 12000 | U |
| 11104-28-2 | Aroclor-1221 | 12000 | U |
| 11141-16-5 | Aroclor-1232 | 12000 | U |
| 53469-21-9 | Aroclor-1242 | 12000 | U |
| 12672-29-6 | Aroclor-1248 | 12000 | U |
| 11097-69-1 | Aroclor-1254 | 25000 | U |
| 11096-82-5 | Aroclor-1260 | 25000 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA14

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH03

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

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 14  dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) N  pH: 7.2  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 9.3 | U |
| 319-85-7 | beta-BHC | 9.3 | U |
| 319-86-8 | delta-BHC | 9.3 | U |
| 58-89-9 | gamma-BHC (Lindane) | 9.3 | U |
| 76-44-8 | Heptachlor | 9.3 | U |
| 309-00-2 | Aldrin | 9.3 | U |
| 1024-57-3 | Heptachlor epoxide | 9.3 | U |
| 959-98-8 | Endosulfan I | 9.3 | U |
| 60-57-1 | Dieldrin | 19 | U |
| 72-55-9 | 4,4'-DDE | 19 | U |
| 72-20-8 | Endrin | 19 | U |
| 33213-65-9 | Endosulfan II | 19 | U |
| 72-54-8 | 4,4'-DDD | 19 | U |
| 1031-07-8 | Endosulfan sulfate | 19 | U |
| 50-29-3 | 4,4'-DDT | 19 | U |
| 72-43-5 | Methoxychlor | 93 | U |
| 53494-70-5 | Endrin ketone | 19 | U |
| 5103-71-9 | alpha-Chlordane | 93 | U |
| 5103-74-2 | gamma-Chlordane | 93 | U |
| 8001-35-2 | Toxaphene | 190 | U |
| 12674-11-2 | Aroclor-1016 | 93 | U |
| 11104-28-2 | Aroclor-1221 | 93 | U |
| 11141-16-5 | Aroclor-1232 | 93 | U |
| 53469-21-9 | Aroclor-1242 | 93 | U |
| 12672-29-6 | Aroclor-1248 | 93 | U |
| 11097-69-1 | Aroclor-1254 | 800 | |
| 11096-82-5 | Aroclor-1260 | 190 | U |

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA15

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH04

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

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 33  dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) Y  pH: 7.7  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 24 | U |
| 319-85-7 | beta-BHC | 24 | U |
| 319-86-8 | delta-BHC | 24 | U |
| 58-89-9 | gamma-BHC (Lindane) | 24 | U |
| 76-44-8 | Heptachlor | 24 | U |
| 309-00-2 | Aldrin | 24 | U |
| 1024-57-3 | Heptachlor epoxide | 24 | U |
| 959-98-8 | Endosulfan I | 24 | U |
| 60-57-1 | Dieldrin | 48 | U |
| 72-55-9 | 4,4'-DDE | 48 | U |
| 72-20-8 | Endrin | 48 | U |
| 33213-65-9 | Endosulfan II | 48 | U |
| 72-54-8 | 4,4'-DDD | 48 | U |
| 1031-07-8 | Endosulfan sulfate | 48 | U |
| 50-29-3 | 4,4'-DDT | 48 | U |
| 72-43-5 | Methoxychlor | 240 | U |
| 53494-70-5 | Endrin ketone | 48 | U |
| 5103-71-9 | alpha-Chlordane | 240 | U |
| 5103-74-2 | gamma-Chlordane | 240 | U |
| 8001-35-2 | Toxaphene | 480 | U |
| 12674-11-2 | Aroclor-1016 | 240 | U |
| 11104-28-2 | Aroclor-1221 | 240 | U |
| 11141-16-5 | Aroclor-1232 | 240 | U |
| 53469-21-9 | Aroclor-1242 | 240 | U |
| 12672-29-6 | Aroclor-1248 | 240 | U MY |
| 11097-69-1 | Aroclor-1254 | 4500 | ~~X~~ 4-1-91 |
| 11096-82-5 | Aroclor-1260 | 480 | U |

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENA16

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 15580 SAS No.: SDG No.: ENA12

Matrix: (soil/water) SOIL Lab Sample ID: FNH05

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

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. 32 dec. Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/01/91

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 24 | U |
| 319-85-7 | beta-BHC | 24 | U |
| 319-86-8 | delta-BHC | 24 | U |
| 58-89-9 | gamma-BHC (Lindane) | 24 | U |
| 76-44-8 | Heptachlor | 24 | U |
| 309-00-2 | Aldrin | 24 | U |
| 1024-57-3 | Heptachlor epoxide | 24 | U |
| 959-98-8 | Endosulfan I | 24 | U |
| 60-57-1 | Dieldrin | 47 | U |
| 72-55-9 | 4,4'-DDE | 47 | U |
| 72-20-8 | Endrin | 47 | U |
| 33213-65-9 | Endosulfan II | 47 | U |
| 72-54-8 | 4,4'-DDD | 47 | U |
| 1031-07-8 | Endosulfan sulfate | 47 | U |
| 50-29-3 | 4,4'-DDT | 47 | U |
| 72-43-5 | Methoxychlor | 240 | U |
| 53494-70-5 | Endrin ketone | 47 | U |
| 5103-71-9 | alpha-Chlordane | 240 | U |
| 5103-74-2 | gamma-Chlordane | 240 | U |
| 8001-35-2 | Toxaphene | 470 | U |
| 12674-11-2 | Aroclor-1016 | 240 | U |
| 11104-28-2 | Aroclor-1221 | 240 | U |
| 11141-16-5 | Aroclor-1232 | 240 | U |
| 53469-21-9 | Aroclor-1242 | 240 | U |
| 12672-29-6 | Aroclor-1248 | 240 | U |
| 11097-69-1 | Aroclor-1254 | 840 | |
| 11096-82-5 | Aroclor-1260 | 470 | U |

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB73

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH06

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

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 20  dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) Y  pH: 7.5  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 20 | U |
| 319-85-7 | beta-BHC | 20 | U |
| 319-86-8 | delta-BHC | 20 | U |
| 58-89-9 | gamma-BHC (Lindane) | 20 | U |
| 76-44-8 | Heptachlor | 20 | U |
| 309-00-2 | Aldrin | 20 | U |
| 1024-57-3 | Heptachlor epoxide | 20 | U |
| 959-98-8 | Endosulfan I | 20 | U |
| 60-57-1 | Dieldrin | 40 | U |
| 72-55-9 | 4,4'-DDE | 40 | U |
| 72-20-8 | Endrin | 40 | U |
| 33213-65-9 | Endosulfan II | 40 | U |
| 72-54-8 | 4,4'-DDD | 40 | U |
| 1031-07-8 | Endosulfan sulfate | 40 | U |
| 50-29-3 | 4,4'-DDT | 40 | U |
| 72-43-5 | Methoxychlor | 200 | U |
| 53494-70-5 | Endrin ketone | 40 | U |
| 5103-71-9 | alpha-Chlordane | 200 | U |
| 5103-74-2 | gamma-Chlordane | 200 | U |
| 8001-35-2 | Toxaphene | 400 | U |
| 12674-11-2 | Aroclor-1016 | 200 | U |
| 11104-28-2 | Aroclor-1221 | 200 | U |
| 11141-16-5 | Aroclor-1232 | 200 | U |
| 53469-21-9 | Aroclor-1242 | 200 | U |
| 12672-29-6 | Aroclor-1248 | 200 | U |
| 11097-69-1 | Aroclor-1254 | 8600 | ~~U~~ |
| 11096-82-5 | Aroclor-1260 | 400 | U |

MY
4-1-91

000070

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB74

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.: _____  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH07

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

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 19  dec. ____  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) N  pH: 8.0  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 9.9 | U |
| 319-85-7 | beta-BHC | 9.9 | U |
| 319-86-8 | delta-BHC | 9.9 | U |
| 58-89-9 | gamma-BHC (Lindane) | 9.9 | U |
| 76-44-8 | Heptachlor | 9.9 | U |
| 309-00-2 | Aldrin | 9.9 | U |
| 1024-57-3 | Heptachlor epoxide | 9.9 | U |
| 959-98-8 | Endosulfan I | 9.9 | U |
| 60-57-1 | Dieldrin | 20 | U |
| 72-55-9 | 4,4'-DDE | 20 | U |
| 72-20-8 | Endrin | 20 | U |
| 33213-65-9 | Endosulfan II | 20 | U |
| 72-54-8 | 4,4'-DDD | 20 | U |
| 1031-07-8 | Endosulfan sulfate | 20 | U |
| 50-29-3 | 4,4'-DDT | 20 | U |
| 72-43-5 | Methoxychlor | 99 | U |
| 53494-70-5 | Endrin ketone | 20 | U |
| 5103-71-9 | alpha-Chlordane | 99 | U |
| 5103-74-2 | gamma-Chlordane | 99 | U |
| 8001-35-2 | Toxaphene | 200 | U |
| 12674-11-2 | Aroclor-1016 | 99 | U |
| 11104-28-2 | Aroclor-1221 | 99 | U |
| 11141-16-5 | Aroclor-1232 | 99 | U |
| 53469-21-9 | Aroclor-1242 | 99 | U |
| 12672-29-6 | Aroclor-1248 | 99 | U |
| 11097-69-1 | Aroclor-1254 | 4400 | E |
| 11096-82-5 | Aroclor-1260 | 200 | U |

MY 4-1-91

000084

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ENB75

Lab Name: G S E L I  Contract: 68-D9-0038

Lab Code: GULF  Case No.: 15580  SAS No.:  SDG No.: ENA12

Matrix: (soil/water) SOIL  Lab Sample ID: FNH08

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

Level: (low/med) LOW  Date Received: 12/19/90

% Moisture: not dec. 19  dec.  Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SONC  Date Analyzed: 01/01/91

GPC Cleanup: (Y/N) Y  pH: 7.3  Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 20 | U |
| 319-85-7 | beta-BHC | 20 | U |
| 319-86-8 | delta-BHC | 20 | U |
| 58-89-9 | gamma-BHC (Lindane) | 20 | U |
| 76-44-8 | Heptachlor | 46 | X |
| 309-00-2 | Aldrin | 20 | U |
| 1024-57-3 | Heptachlor epoxide | 20 | U |
| 959-98-8 | Endosulfan I | 20 | U |
| 60-57-1 | Dieldrin | 40 | U |
| 72-55-9 | 4,4'-DDE | 40 | U |
| 72-20-8 | Endrin | 40 | U |
| 33213-65-9 | Endosulfan II | 40 | U |
| 72-54-8 | 4,4'-DDD | 40 | U |
| 1031-07-8 | Endosulfan sulfate | 40 | U |
| 50-29-3 | 4,4'-DDT | 40 | U |
| 72-43-5 | Methoxychlor | 200 | U |
| 53494-70-5 | Endrin ketone | 40 | U |
| 5103-71-9 | alpha-Chlordane | 200 | U |
| 5103-74-2 | gamma-Chlordane | 200 | U |
| 8001-35-2 | Toxaphene | 400 | U |
| 12674-11-2 | Aroclor-1016 | 200 | U |
| 11104-28-2 | Aroclor-1221 | 200 | U |
| 11141-16-5 | Aroclor-1232 | 200 | U |
| 53469-21-9 | Aroclor-1242 | 200 | U |
| 12672-29-6 | Aroclor-1248 | 200 | U |
| 11097-69-1 | Aroclor-1254 | 3200 | E |
| 11096-82-5 | Aroclor-1260 | 400 | U |

MY 4-1-91

000097

Table A (Cont.)

CONTRACT LABORATORY PROGRAM

TARGET ANALYTE LIST (TAL)

INORGANIC DETECTION LIMITS

| Compound | Procedure | Detection Limits Water (µg/L) | Detection Limits Soil Sediment Sludge (mg/kg) |
|---|---|---|---|
| aluminum | ICP | 200 | 40 |
| antimony | furnace | 60 | 2.4 |
| arsenic | furnace | 10 | 2 |
| barium | ICP | 200 | 40 |
| beryllium | ICP | 5 | 1 |
| cadmium | ICP | 5 | 1 |
| calcium | ICP | 5,000 | 1,000 |
| chromium | ICP | 10 | 2 |
| cobalt | ICP | 50 | 10 |
| copper | ICP | 25 | 5 |
| iron | ICP | 100 | 20 |
| lead | furnace | 5 | 1 |
| magnesium | ICP | 5,000 | 1,000 |
| manganese | ICP | 15 | 3 |
| mercury | cold vapor | 0.2 | 0.008 |
| nickel | ICP | 40 | 8 |
| potassium | ICP | 5,000 | 1,000 |
| selenium | furnace | 5 | 1 |
| silver | ICP | 10 | 2 |
| sodium | ICP | 5,000 | 1,000 |
| thallium | furnace | 10 | 2 |
| tin | ICP | 40 | 8 |
| vanadium | ICP | 50 | 10 |
| zinc | ICP | 20 | 4 |
| cyanide | color | 10 | 2 |

3767:1

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SLUDGE SEDIMENT |
|---|---|---|---|
| Fluorene | 86-73-7 | 10 ug/L | 330 ug/Kg |
| 4-Nitroaniline | 100-01-6 | 50 | 1600 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 50 | 1600 |
| N-nitrosodiphenylamine | 86-30-6 | 10 | 330 |
| 4-Bromophenyl-phenylether | 101-55-3 | 10 | 330 |
| Hexachlorobenzene | 118-74-1 | 10 | 330 |
| Pentachlorophenol | 87-86-5 | 50 | 1600 |
| Phenanthrene | 85-01-8 | 10 | 330 |
| Anthracene | 120-12-7 | 10 | 330 |
| Di-n-butylphthalate | 84-74-2 | 10 | 330 |
| Fluoranthene | 206-44-0 | 10 | 330 |
| Pyrene | 129-00-0 | 10 | 330 |
| Butylbenzylphthalate | 85-68-7 | 10 | 330 |
| 3,3'-Dichlorobenzidine | 91-94-1 | 20 | 660 |
| Benzo(a)anthracene | 56-55-3 | 10 | 330 |
| Chrysene | 218-01-9 | 10 | 330 |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 10 | 330 |
| Di-n-octylphthalate | 117-84-0 | 10 | 330 |
| Benzo(b)fluoranthene | 205-99-2 | 10 | 330 |
| Benzo(k)fluoranthene | 207-08-9 | 10 | 330 |
| Benzo(a)pyrene | 50-32-8 | 10 | 330 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 10 | 330 |
| Dibenz(a,h)anthracene | 53-70-3 | 10 | 330 |
| Benzo(g,h,i)perylene | 191-24-2 | 10 | 330 |

Table A
Contract Laboratory Program
Target Compound List
Pesticide and PCB Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| alpha-BHC | 319-84-6 | 0.05 ug/L | 8 ug/Kg |
| beta-BHC | 319-85-7 | 0.05 | 8 |
| delta-BHC | 319-86-8 | 0.05 | 8 |
| gamma-BHC (Lindane) | 58-89-9 | 0.05 | 8 |
| Heptachlor | 76-44-8 | 0.05 | 8 |
| Aldrin | 309-00-2 | 0.05 | 8 |
| Heptachlor epoxide | 1024-57-3 | 0.05 | 8 |
| Endosulfan I | 959-98-8 | 0.05 | 8 |
| Dieldrin | 60-57-1 | 0.10 | 16 |
| 4,4'-DDE | 72-55-9 | 0.10 | 16 |
| Endrin | 72-20-8 | 0.10 | 16 |
| Endosulfan II | 33213-65-9 | 0.10 | 16 |
| 4,4'-DDD | 72-54-8 | 0.10 | 16 |
| Endosulfan sulfate | 1031-07-8 | 0.10 | 16 |
| 4,4'-DDT | 50-29-3 | 0.10 | 16 |
| Methoxychlor (Mariate) | 72-43-5 | 0.5 | 80 |
| Endrin ketone | 53494-70-5 | 0.10 | 16 |
| alpha-Chlordane | 5103-71-9 | 0.5 | 80 |
| gamma-chlordane | 5103-74-2 | 0.5 | 80 |
| Toxaphene | 8001-35-2 | 1.0 | 160 |
| AROCLOR-1016 | 12674-11-2 | 0.5 | 80 |
| AROCLOR-1221 | 11104-28-2 | 0.5 | 80 |
| AROCLOR-1232 | 11141-16-5 | 0.5 | 80 |
| AROCLOR-1242 | 53469-21-9 | 0.5 | 80 |
| AROCLOR-1248 | 12672-29-6 | 0.5 | 80 |
| AROCLOR-1254 | 11097-69-1 | 1.0 | 160 |
| AROCLOR-1260 | 11096-82-5 | 1.0 | 160 |

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| Phenol | 108-95-2 | 10 ug/L | 330 ug/Kg |
| bis(2-Chloroethyl) ether | 111-44-4 | 10 | 330 |
| 2-Chlorophenol | 95-57-8 | 10 | 330 |
| 1,3-Dichlorobenzene | 541-73-1 | 10 | 330 |
| 1,4-Dichlorobenzene | 106-46-7 | 10 | 330 |
| Benzyl Alcohol | 100-51-6 | 10 | 330 |
| 1,2-Dichlorobenzene | 95-50-1 | 10 | 330 |
| 2-Methylphenol | 95-48-7 | 10 | 330 |
| bis(2-Chloroisopropyl) ether | 108-60-1 | 10 | 330 |
| 4-Methylphenol | 106-44-5 | 10 | 330 |
| N-Nitroso-di-n-dipropylamine | 621-64-7 | 10 | 330 |
| Hexachloroethane | 67-72-1 | 10 | 330 |
| Nitrobenzene | 98-95-3 | 10 | 330 |
| Isophorone | 78-59-1 | 10 | 330 |
| 2-Nitrophenol | 88-75-5 | 10 | 330 |
| 2,4-Dimethylphenol | 105-67-9 | 10 | 330 |
| Benzoic Acid | 65-85-0 | 50 | 1600 |
| bis(2-Chloroethoxy) methane | 111-91-1 | 10 | 330 |
| 2,4-Dichlorophenol | 120-83-2 | 10 | 330 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 10 | 330 |
| Naphthalene | 91-20-3 | 10 | 330 |
| 4-Chloroaniline | 106-47-8 | 10 | 330 |
| Hexachlorobutadiene | 87-68-3 | 10 | 300 |
| 4-Chloro-3-methylphenol | 59-50-7 | 10 | 330 |
| 2-Methylnaphthalene | 91-57-6 | 10 | 330 |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | 330 |
| 2,4,6-Trichlorophenol | 88-06-2 | 10 | 330 |
| 2,4,5-Trichlorophenol | 95-95-4 | 50 | 1600 |
| 2-Chloronaphthalene | 91-58-7 | 10 | 330 |
| 2-Nitroaniline | 88-74-4 | 50 | 1600 |
| Dimethylphthalate | 131-11-3 | 10 | 330 |
| Acenaphthylene | 208-96-8 | 10 | 330 |
| 2,6-Dinitrotoluene | 606-20-2 | 10 | 330 |
| 3-Nitroaniline | 99-09-2 | 50 | 1600 |
| Acenaphthene | 83-32-9 | 10 | 330 |
| 2,4-Dinitrophenol | 51-28-5 | 50 | 1600 |
| 4-Nitrophenol | 100-02-7 | 50 | 1600 |
| Dibenzofuran | 132-64-9 | 10 | 330 |
| 2,4-Dinitrotoluene | 121-14-2 | 10 | 330 |
| Diethylphthalate | 84-66-2 | 10 | 330 |
| 4-Chlorophenyl-phenyl ether | 7005-72-3 | 10 | 330 |

Contract Laboratory Program
Target Compound List
Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| Chloromethane | 74-87-3 | 10 ug/L | 10 ug/Kg |
| Bromomethane | 74-83-9 | 10 | 10 |
| Vinyl chloride | 75-01-4 | 10 | 10 |
| Chloroethane | 75-00-3 | 10 | 10 |
| Methylene chloride | 75-09-2 | 5 | 5 |
| Acetone | 67-64-1 | 10 | 5 |
| Carbon disulfide | 75-15-0 | 5 | 5 |
| 1,1-dichloroethene | 75-35-4 | 5 | 5 |
| 1,1-dichloroethane | 75-34-3 | 5 | 5 |
| 1,2-dichloroethene (total) | 540-59-0 | 5 | 5 |
| Chloroform | 67-66-3 | 5 | 5 |
| 1,2-dichloroethane | 107-06-2 | 5 | 5 |
| 2-butanone (MEK) | 78-93-3 | 10 | 10 |
| 1,1,1-trichloroethane | 71-55-6 | 5 | 5 |
| Carbon tetrachloride | 56-23-5 | 5 | 5 |
| Vinyl acetate | 108-05-4 | 10 | 10 |
| Bromodichloromethane | 75-27-4 | 5 | 5 |
| 1,2-dichloropropane | 78-87-5 | 5 | 5 |
| cis-1,3-dichloropropene | 10061-01-5 | 5 | 5 |
| Trichloroethene | 79-01-6 | 5 | 5 |
| Dibromochloromethane | 124-48-1 | 5 | 5 |
| 1,1,2-trichloroethane | 79-00-5 | 5 | 5 |
| Benzene | 71-43-2 | 5 | 5 |
| Trans-1,3-dichloropropene | 10061-02-6 | 5 | 5 |
| Bromoform | 75-25-2 | 5 | 5 |
| 4-Methyl-2-pentanone | 108-10-1 | 10 | 10 |
| 2-Hexanone | 591-78-6 | 10 | 10 |
| Tetrachloroethene | 127-18-4 | 5 | 5 |
| Tolene | 108-88-3 | 5 | 5 |
| 1,1,2,2-tetrachloroethane | 79-34-5 | 5 | 5 |
| Chlorobenzene | 108-90-7 | 5 | 5 |
| Ethyl benzene | 100-41-4 | 5 | 5 |
| Styrene | 100-42-5 | 5 | 5 |
| Xylenes (total) | 1330-20-7 | 5 | 5 |

RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED Soil SAMPLES

CK 3/28/91

| Physical State* | Waste Characteristics* | Category*** | SI Memo | Sample Collection Information and Parameters | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Date | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | | | | |
| | | | | Time | 1115 | 1130 | 1215 | 1230 | 1320 | 1420 | 1445 | 1500 | | | | |
| | | | | ~~Well Depth (Feet)~~ | | | | | | | | | | | | |
| | | | | ~~CRL Log Number~~ | | | | | | | | | | | | |
| | | | | CLP Organic Traffic Report Number | ENB 73 | ENB 74 | ENB 75 | ENA 12 | ENA 13 | ENA 14 | ENA 15 | ENA 16 | | | | |
| | | | | CLP Inorganic Traffic Report Number | MEMS57 | MEMS58 | MEMS59 | MEMQ97 | MEMQ98 | MEMQ99 | MEMM01 | MEMM02 | | | | |
| | | | | Temperature (°C) | | | | | | | | | | | | |
| | | | | Specific Conductivity (µmhos/cm) | | | | | | | | | | | | |
| | | | | pH | | | | | | | | | | | | |
| | | | | Compound Detected (values in mg/L or µg/kg) | | | | | | | | | | | | |
| | | | | Volatile Organics | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | chloroethane | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | ~~bromoethane~~ | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | vinyl chloride | | | | | | | | | | | | |
| Gas | A,D,G,I | OCC | HH | chloroethane | | | | | | | | | | | | |
| Liquid | A,D,H,I | SOL | HH,CLA | methylene chloride | | | | | | | | | | | | |
| Liquid | E,H,I,A | SOL | K,CLA | acetone | | | | | | | | | | | | |
| Liquid | A,H,I | SOL | SH | carbon disulfide | | | | | | | | | | | | |
| Liquid | A,D,G,I | SOL | HH | 1,1-dichloroethene | | | | | | | | | | | | |
| Liquid | A,D,H,G | SOL | HH | 1,1-dichloroethane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | 1,2-dichloroethene (total) | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | chloroform | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | 1,2-dichloroethane | | | | | | | | | | | | |
| Liquid | A,E,G | SOL | K,CLA | 2-butanone (MEK) | R | R | -- | -- | R | -- | R | R | | | | |
| Liquid | A,D | SOL | HH | 1,1,1-trichloroethane | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | carbon tetrachloride | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HHD | vinyl acetate | | | | | | | | | | | | |
| Liquid | A,D | OCC | HH | bromodichloromethane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | 1,2-dichloropropane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | cis-1,3-dichloropropene | | | | | | | | | | | | |
| Liquid | A,D,G,B | SOL | HH | trichloroethene | | | | | | | | | | | | |
| Liquid | A,D | OCC | HH | dibromochloromethane | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | 1,1,2-trichloroethane | | | | | | | | | | | | |
| Liquid | A,G | SOL | A | benzene | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HH | trans-1,3-dichloropropene | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH,CLA | bromoform | | | | | | | | | | | | |
| Liquid | A,E,G | SOL | K,CLA | 4-methyl-2-pentanone | | | | | | | | | | | | |
| Liquid | A,E,G | SOL | K | 2-hexanone | | | | | | | | | | | | |
| Liquid | A,D | SOL | HH | tetrachloroethene | | | | | | | | | | | | |
| Liquid | A,G,E | SOL | A,CLA | toluene | 22J | 39J | 5J | 21J | 10J | 6J | -- | -- | | | | |
| Liquid | A,D,E | SOL | HH | 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| Liquid | A,D,G | SOL | HA | chlorobenzene | | | | | | | | | | | | |
| Liquid | A,G | SOL | A | ethylbenzene | | | | | | | | | | | | |
| Liquid | A,D,G | OCC | A | styrene | | | | | | | | | | | | |
| Liquid | A,G | SOL | A | xylenes (total) | | | | | | | | | | | | |

Table 4 (Cont.)

| Physical State* | Waste Characteristics** | Category*** | SI Memo | Sample Collection Information and Parameters | Sample Number 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Semivolatile Organics | | | | | | | | | | | | |
| S, thick 1 | A,B,E | OCC | P | phenol | | | | | | | | | | | | |
| Liquid | A,D,B | OCC | HH | bis(2-chloroethyl)ether | | | | | | | | | | | | |
| Liquid | A,D,B | OCC | P | 2-chlorophenol | | | | | | | | | | | | |
| Liquid | A,D,H | SOL | HA | 1,3-dichlorobenzene | | | | | | | | | | | | |
| Solid | A,D,H | OCC | HA | 1,4-dichlorobenzene | | | | | | | | | | | | |
| Liquid | A,D,H | SOL | A | benzyl alcohol | | | | | | | | | | | | |
| Liquid | A,D,H | OCC | HA | 1,2-dichlorobenzene | | | | | | | | | | | | |
| Liquid | A,B | OCC | P | 2-methylphenol | | | | | | | | | | | | |
| | A,D | OCC | HH | bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| Liquid | A,B | OCC | P | 4-methylphenol | | | | | | | | | | | | |
| | A | OCC | H-Amine | n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | hexachloroethane | | | | | | | | | | | | |
| Liquid | A,D | OCC | HA | nitrobenzene | | | | | | | | | | | | |
| Liquid | A,D | OCC | H | isophorone | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 2-nitrophenol | | | | | | | | | | | | |
| Solid | A,B | OCC | P | 2,4-dimethylphenol | | | | | | | | | | | | |
| Solid | A | OCC | A | benzoic acid | | | | | | | | | | | | |
| | A,D | OCC | HH | bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| Liquid | A,D | OCC | P | 2,4-dichlorophenol | | | | | | | | | | | | |
| Liquid | A,D | OCC | HA | 1,2,4-trichlorobenzene | | | | | | | | | | | | |
| Solid | A | OCC | PAH | naphthalene | -- | -- | -- | -- | -- | -- | -- | 580J | | | | |
| Solid | A,D | OCC | HH | 4-chloroaniline | | | | | | | | | | | | |
| Liquid | A,D,B | OCC | HH | hexachlorobutadiene | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 4-chloro-3-methylphenol | | | | | | | | | | | | |
| Liquid | A,D | OCC | PAH | 2-methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | 340J | | | | |
| Liquid | A,D,B | OCC | HH | hexachlorocyclopentadiene | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 2,4,6-trichlorophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 2,4,5-trichlorophenol | | | | | | | | | | | | |
| Liquid | A,D | OCC | PAH | 2-chloronaphthalene | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | 2-nitroaniline | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH,CLA | dimethylphthalate | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | acenaphthylene | | | | | | | | | | | | |
| Solid | A,D | OCC | HA | 2,6-dinitrotoluene | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | 3-nitroaniline | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | acenaphthene | -- | -- | -- | -- | -- | -- | -- | 970 | | | | |
| Solid | A,D,G | OCC | P | 2,4-dinitrophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 4-nitrophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | A | dibenzofuran | -- | -- | -- | -- | -- | -- | -- | 700J | | | | |
| Solid | A,D | OCC | HA | 2,4-dinitrotoluene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PH | diethylphthalate | | | | | | | | | | | | |
| | A,D | OCC | HH | 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | fluorene | -- | -- | -- | -- | -- | -- | -- | 1,200 | | | | |
| Solid | A,D,E | OCC | HH | 4-nitroaniline | | | | | | | | | | | | |
| Solid | A,D | OCC | P | 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| Solid | A,D | OCC | HH | n-nitrosodiphenylamine | | | | | | | | | | | | |
| Liquid | A,D | OCC | HH | 4-bromophenyl-phenylether | | | | | | | | | | | | |
| Solid | A,D | OCC | HA | hexachlorobenzene | | | | | | | | | | | | |
| Solid | A,D | OCC | P | pentachlorophenol | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | phenanthrene | 740J | 190J | 420J | -- | -- | -- | -- | 10,000 | | | | |

Table 4- (Cont.)

| Physical State* | Waste Characteristics** | Category*** | SI Memo | Sample Collection Information and Parameters | Sample Number 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Semivolatile Organics, Cont. | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | anthracene | 210J | -- | 330J | -- | -- | -- | -- | 2100 | | | | |
| Liquid | A,D | OCC | PH,CLA | di-n-butylphthalate | -- | -- | -- | -- | -- | -- | 9200 | -- | | | | |
| Solid | A,D | OCC | PAH | fluoranthene | 1700 | 200J | 670J | -- | -- | 840 | -- | 8100 | | | | |
| Solid | A,D | OCC | PAH | pyrene | 890 | 150J | 1500 | -- | -- | 630 | -- | 7500 | | | | |
| Liquid | A,D | OCC | PH,CLA | butylbenzylphthalate | | | | | | | | | | | | |
| | A,D | OCC | HA | 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[a]anthracene | 550J | -- | 340J | -- | -- | 360J | -- | 3600 | | | | |
| Solid | A,D | OCC | PAH | chrysene | 880 | -- | 580J | -- | -- | 620 | -- | 4100 | | | | |
| Liquid | A,D | OCC | PH,CLA | bis(2-ethylhexyl)phthalate | -- | 590 | -- | 15000J | -- | -- | -- | -- | | | | |
| Liquid | A,D | OCC | PH,CLA | di-n-octylphthalate | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[b]fluoranthene | 770J | -- | 370J | -- | -- | 690 | -- | 3700 | | | | |
| Solid | A,D | OCC | PAH | benzo[k]fluoranthene | 1000 | -- | 350J | -- | -- | 620 | -- | 3200 | | | | |
| Solid | A,D,K,L | OCC | PAH | benzo[a]pyrene | 630J | -- | 330J | -- | -- | 410 | -- | 3800 | | | | |
| Solid | A,D | OCC | PAH | indeno[1,2,3-cd]pyrene | -- | -- | -- | -- | -- | 220J | -- | 3000J | | | | |
| Solid | A,D | OCC | PAH | dibenzo[a,h]anthracene | | | | | | | | | | | | |
| Solid | A,D | OCC | PAH | benzo[g,h,i]perylene | -- | -- | -- | -- | -- | 250J | -- | 810J | | | | |
| | | | | Pesticides/PCBs | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | alpha BHC | -- | -- | -- | 72 | -- | -- | -- | -- | | | | |
| Solid | A,D | PSD | PEST | beta BHC | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | delta BHC | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | gamma BHC (Lindane) | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Heptachlor | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Aldrin | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Heptachlor epoxide | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endosulfan I | | | | | | | | | | | | |
| Solid | A,D,E | PSD | PEST | Dieldrin | -- | -- | -- | 160 | 3000CX | -- | -- | -- | | | | |
| Solid | A,D | PSD | PEST | 4,4'-DDE | -- | -- | -- | 51 | -- | -- | -- | -- | | | | |
| Solid | A,D | PSD | PEST | Endrin | -- | -- | -- | 80 | 240C | -- | -- | -- | | | | |
| Solid | A,D | PSD | PEST | Endosulfan II | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | 4,4'-DDD | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endosulfan sulfate | -- | -- | -- | 65 | -- | -- | -- | -- | | | | |
| Solid | A,D | PSD | PEST | 4,4'-DDT | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Methoxychlor (Mariate) | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Endrin ketone | -- | -- | -- | 55 | -- | -- | -- | -- | | | | |
| Solid | A,D | PSD | PEST | alpha Chlordane | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | gamma Chlordane | | | | | | | | | | | | |
| Solid | A,D | PSD | PEST | Toxaphene | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1016 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1221 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1232 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1242 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1248 | | | | | | | | | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1254 | 3600X | 4400X | 3200X | -- | -- | 800X | 4500X | 840 | | | | |
| Liquid | A,D | OCC | PCB | Aroclor 1260 | | | | | | | | | | | | |
| | | | | | MY 4-1-91 | MY 4-1-91 | MY 4-1-91 | | | | MY 4-1-91 | | | | | |

CK 3/27/91

Table 4- (Cont.)

| Physical State* | Waste Characteristics** | Category*** | SI Memo | Sample Collection Information and Parameters | Sample Number 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MEMS57 | MEMS58 | MEMS59 | MEMQ97 | MEMQ98 | MEMQ99 | MEMM01 | MEMM02 | | | | |
| | | | | Analyte Detected (values in mg/kg or µg/L) | | | | | | | | | | | | |
| Solid | A,D | MES | CSC/CWC | alumina | 5060 | 10,000 | 5000 | 5260 | 6480 | 6450 | 5780 | 6620 | | | | |
| Solid | A,D | MES | HM | antimony | -- | -- | -- | -- | -- | -- | -- | 20.5 | | | | |
| Solid | A,D | MES | HM | arsenic | 10.9 | 26.4 | 23.2WJ | 11 | 9.5 | 20.5 | 15.6NJ | 18.2 | | | | |
| Solid | A,D | MES | CSC/CWC | barium | 286 | 187 | 84.8 | 139 | 617 | 92.8 | 314*J | 332 | | | | |
| Solid | A,D | MES | M | beryllium | 0.86B | 0.82B | 0.78B | 2 | 0.88B | 0.62B | 0.86B | 0.83B | | | | |
| Solid | A,D | MES | HM | cadmium | 15.1 | 6.7 | 3.8 | -- | 1.9 | -- | 10.9 | 5.3 | | | | |
| Solid | D | MES | CSC/CWC | calcium | 14400 | 24300 | 6830 | 11300 | 8470 | 4540 | 25100*J | 7060 | | | | |
| Solid | A,D | MES | HM | chromium | 18000 | 11000 | 4490 | 420 | 23.7 | 726 | 24500 | 360 | | | | |
| Solid | A,D | MES | HM | cobalt | 2450 | 382 | 821 | 51.3 | 8.3B | 86.8 | 4480*J | 32 | | | | |
| Solid | A,D | MES | HM | copper | 719 | 39400 | 167 | 80.6 | 31.4 | 32.9 | 6060*J | 247 | | | | |
| Solid | A,D | MES | HM,CSC;CWC | iron | 204000 | 223000 | 77100 | 29000 | 15600 | 20900 | 227000 | 127000 | | | | |
| Solid | A,D | MES | HM | lead | 845 | 1190 | 179 | 185 | 776 | 60.1 | 1300 | 854 | | | | |
| Solid | A,D | MES | CSC/CWC | magnesium | 4840 | 5950 | 2850 | 2640 | 1600 | 2540 | 12100*J | 2850 | | | | |
| Solid | A,D | MES | HM | manganese | 5990 | 3580 | 762 | 444 | 992 | 507 | 8630 | 1920 | | | | |
| Liquid | A,D | MES | HM | mercury | 3.6 | 1.7 | 0.24 | 0.75 | -- | -- | 0.97 | 0.17 | | | | |
| Solid | A,D | MES | HM | nickel | 7930 | 7570 | 4070 | 206 | 26.7 | 512 | 11200 | 207 | | | | |
| Solid | D | MES | CSC,CWC | potassium | 472B | 584B | 419B | 603B | 731B | 528B | 502B | 652B | | | | |
| Solid | A,D | MES | M | selenium | 0.92BWJ | 1.6+J | 4.3 | 1.5 | 1.3B | 0.55B | 0.43BNJ | 0.41B | | | | |
| Solid | A,D | MES | HM | silver | 3.5 | 6.6 | -- | -- | -- | 0.98B | 5 | 1.2B | | | | |
| Solid | D | MES | CSC,CWC | sodium | 238B | 103B | 82.3B | 124B | 338B | -- | 138B J | 132B | | | | |
| Solid | A,D | MES | HM | thallium | | | | | | | | | | | | |
| Solid | A,D | MES | HM | vanadium | 91.9 | 80.2 | 27.3 | 18.7 | 16.1 | 20.4 | 103 | 49.4 | | | | |
| Solid | A,D | MES | CWL,CSC;HM | zinc | 1910 | 1730 | 114 | 318 | 436 | 62.2 | 1860 | 1050 | | | | |
| Solid | A | IOC | IOC | cyanide | 0.81 | 0.64 | 0.4B | 0.85 | 0.53B | 0.2B | 0.68BNJ | 0.3B | | | | |

— Not detected.

| | | |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRQL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a B qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |
| X | Manual integration of data. | No affect on data quality. |

| ANALYTE QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| E E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S S | Analysis by Method of Standard Additions. | Value is quantitative. |
| R N | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| k k | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| + + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| M | Duplicate injection precision not met. | Value may be semiquantitative. |
| W | Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |
| R | Results are unusable due to a major violation of QC protocols. | Analyte value is not usable. |

Source: Ecology and Environment, Inc. 1989.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name 1,2-Dichloroethane Date

DOT Classification Job Number

CAS Number 107-06-2

**REFERENCES CONSULTED** (circle; also include MSDS if approprate.)
NIOSH/OSHA Pocket Guide Merck Index Hazardline Chris(vol.III)
ACGIH TLV Booklet Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: Sittig, chemical dictionary

**CHEMICAL PROPERTIES**: (Synonyms: Ethylene dichloride, glycol dichloride )
Chemical Formula $ClCH_2CH_2Cl$ MW 99 Ionization Potential 11.12ev
Physical State liquid Boiling Point 183°F Freezing Point -32.3°F
Flash Point 55°F Flammable Limits 6.2-16% Vapor Pressure 62mm
Specific Gravity/Density 1.253 Odor/Odor Threshold 100ppm chloroform

Solubility-water: slightly Solubility-other:
Incompatabilities & Reactivity: Strong oxidizers, caustics, chem. active metals

**TOXICOLOGICAL PROPERTIES**:
**Exposure Limits**: TLV-TWA (ACGIH) 10ppm PEL (OSHA) 50ppm
STEL None est. Ceiling Limits 2ppm/15 min IDLH 1000ppm
**Toxicity Data: (Indicate duration of study)**
Human; IHL Tclo 1000ppm/1Hr Dermal Oral Ldlo 810mg/kg
Rat/Mouse; IHL Dermal Oral
Aquatic: T/M 96:1000-100ppm Other: animal positive carcinogen
Carcinogen human-sus Mutagen exper. Reproductive Toxin exp. teratogen
**Route(s) of exposure - (circle all that apply)**: Inhalation Ingestion
Dermal Contact Eye(ocular) Dermal Absorption Other readily skin absorb

**HANDLING RECOMMENDATIONS**: **(personal protective measures)**
**Respirators**: >any detectable limit-use SCBA
**Protective Clothing**: excel.-viton; good-butyl; poor-vinyl, nitrile, neoprene
**Special Equipment**: Prevent contact w/skin since readily absorbed

**DISPOSAL, FIRE and SPILLS**: **(Use numbered codes; see attached sheets for explanation.)**
Disposal D Fire 6.7 Leaks&Spills 1,3,4,6,9
Decomposition Products: CO, $CO_2$, hydrogen chloride & phosgene gas.

**FIRST AID**:
**ING**: Give large quantities of water, induce vomiting, med. attent.
**IHL**: Move to fresh air, CPR if necessary, medical attent.
**Eye/Skin**: Irrigate immed. w/water, at least 15 min. wash skin throughly with soap & water.

**SYMPTOMS**:
**acute(immediate) exposure effects**: Nausea, vomiting, mental confusion dizziness, headache, skin burns, dermatitis, cornea of eye damage. Acute exposure at high concentrations can result in death due to circulatory & respiratory failure.

**chronic(long term) exposure effects**:
Repeated long terme xposure may result in nervous system disorders, loss of appetite, stomach problems, liver and/or kidney damage. Suspect human

**reproductive effects**: None specified for humans.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

**Chemical Name** 1,1-Dichloroethane **Date** _____

**DOT Classification** _____ **Job Number** _____

**CAS Number** 75-34-3

**REFERENCES CONSULTED** (circle; also include MSDS if approprate.)
NIOSH/OSHA Pocket Guide Merck Index Hazardline Chris(vol.III)
ACGIH TLV Booklet Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: Sittig

**CHEMICAL PROPERTIES**: (Synonyms: 1,1-Ethylidene chloride )
Chemical Formula $CH_3CHCl_2$ MW 99 Ionization Potential not avail
Physical State Liquid Boiling Point 135°F Freezing Point -142°F
Flash Point 17°F Flammable Limits 6-16% Vapor Pressure 182mm
Specific Gravity/Density 1.174 Odor/Odor Threshold 5ppm not reliable
Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers, caustics

**TOXICOLOGICAL PROPERTIES**:
**Exposure Limits:** TLV-TWA (ACGIH) 200ppm PEL (OSHA) 100ppm
STEL 250ppm Ceiling Limits none est. IDLH 4,000ppm
**Toxicity Data: (Indicate duration of study)**
Human; IHL _____ Dermal _____ Oral _____
Rat/Mouse; IHL _____ Dermal _____ Oral LD50 725mg/kg
Aquatic: _____ Other: _____
Carcinogen indef-anim mutagen N/A Reproductive Toxin exper.terat.
**Route(s) of exposure - (circle all that apply):** Inhalation Ingestion
Dermal Contact Eye(ocular) Dermal Absorption Other _____

**HANDLING RECOMMENDATIONS: (personal protective measures)**
**Respirators:** 1000 ppm- APR with chemical cartridge or SCBA; 74000ppm use SCBA
**Protective Clothing:** Excel-viton; Good-butyl; poor-neoprene, nitrile.
**Special Equipment:** None

**DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)**
Disposal D Fire 7 Leaks&Spills 1,3,4,6,9
Decomposition Products: CO, $CO_2$, hydrogen chloride & phosgene gas

**FIRST AID:**
**ING:** Give salt water, induce vomiting, medical atten. immed.
**IHL:** Remove to fresh air, CPR if necessary, medical attent. immed.
**Eye/Skin:** Irrigate/wash immediately with water. Wash skin thoroughly with with soap & water.

**SYMPTOMS:**
**acute(immediate) exposure effects:** Central nervous system depression, coughing, dizziness, nausea, vomiting, drowsiness, unconsciousness.

**chronic(long term) exposure effects:** Liver & kidney damage, lungs & adrenal glands affected from chronic exposure. Prolonged skin contact may produce burns. Alcohol enhances systeunic toxicity.

**reproductive effects:** None specified for humans

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

**Chemical Name** Chloroform **Date** _____

**DOT Classification** _____ **Job Number** _____

**CAS Number** 67-66-3

**REFERENCES CONSULTED** (circle; also include MSDS if approprate.)
NIOSH/OSHA Pocket Guide Merck Index Hazardline Chris(vol.III)
ACGIH TLV Booklet Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: Sittig

**CHEMICAL PROPERTIES:** (Synonyms: Trichloromethane, Formyltrichloride )
Chemical Formula $CHCl_3$ MW 119 Ionization Potential 11.42 ev
Physical State liquid Boiling Point 142°F Freezing Point -82°F
Flash Point not flamm Flammable Limits not flam Vapor Pressure 160mm
Specific Gravity/Density 1.49 Odor/Odor Threshold 205-307ppm
Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong caustics, chemically active metals

**TOXICOLOGICAL PROPERTIES:**
**Exposure Limits:** TLV-TWA (ACGIH) 10ppm PEL (OSHA) 2ppm/60 min.
STEL none est. Ceiling Limits 2ppm/60 min. IDLH 1000ppm
**Toxicity Data: (Indicate duration of study)**
Human; IHL Tclo 1000mg/m3/1Y Dermal _____ Oral _____
Rat/Mouse; IHL Tclo 30ppm/7Hr Dermal _____ Oral _____
Aquatic: Tlm 96: 100-10ppm Other: _____
Carcinogen Sus-human Mutagen neg. Reproductive Toxin exp. teratogen
**Route(s) of exposure - (circle all that apply):** Inhalation Ingestion
Dermal Contact Eye(ocular) Dermal Absorption Other _____

**HANDLING RECOMMENDATIONS: (personal protective measures)**
**Respirators:** 50ppm - 2% in air - APR; >2% - SCBA.
**Protective Clothing:** Excel-viton; Poor-butyl, vinyl, nitrile, neoprene.
**Special Equipment:** Chemical goggles

**DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)**
Disposal B Fire 11.13 Leaks&Spills 1,4,6,9
Decomposition Products: hydrogen chloride & phosgene gas

**FIRST AID:**
**ING:** Induce vomiting, medical attent. immed.
**IHL:** Move to fresh air, CPR if necessary, medical attent.
**Eye/Skin:** Irrigate/flush with water for at least 15 min. Wash skin thoroughly with soap & water.

**SYMPTOMS:**
**acute(immediate) exposure effects:** Dialation of pupils, irritation of conjunctiva & mucous membranes, headache, nausea, dizziness, acts like a narcotic.

**chronic(long term) exposure effects:** Liver and/or kidney damage, heart damage, profound toxemia, sometimes hepatitis for prolonged exposures.

**reproductive effects:** Has produced teratogenic effects in lab animals.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name 1,1,1-Trichloroethane Date _____

DOT Classification _____ Job Number _____

CAS Number 71-55-6

**REFERENCES CONSULTED (circle; also include MSDS if approprate.)**
NIOSH/OSHA Pocket Guide Merck Index Hazardline Chris(vol.III)
ACGIH TLV Booklet Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: _____

**CHEMICAL PROPERTIES:** (Synonyms: Methyl Chloroform, Chlorothane )
Chemical Formula $CH_3CCl_3$ MW 133 Ionization Potential 10.2 ev
Physical State liquid Boiling Point 165° F Freezing Point -36° F
Flash Point None Flammable Limits 7-16% Vapor Pressure 100mm
Specific Gravity/Density 1.31 Odor/Odor Threshold 100pppm/chloroform
Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers,caustics,chem. active metals.

**TOXICOLOGICAL PROPERTIES:**
**Exposure Limits:** TLV-TWA (ACGIH) 350ppm PEL (OSHA) 350ppm
STEL 450 ppm Ceiling Limits 350ppm IDLH 1000ppm
**Toxicity Data: (Indicate duration of study)**
Human; IHL Tclo 920ppm/70M Dermal _____ Oral Tdlo 670mg/kg
Rat/Mouse; IHL Lc10 1000ppm Dermal _____ Oral LD50 1030mg/kg
Aquatic: Tlm 96:100-10ppm Other: _____
Carcinogen Indef-anim. Mutagen exper. Reproductive Toxin teratogen
**ute(s) of exposure - (circle all that apply):** Inhalation Ingestion
rmal Contact Eye(ocular) Dermal Absorption Other _____

**HANDLING RECOMMENDATIONS: (personal protective measures)**
**Respirators:** 500ppm - use APR; >1000ppm use SCBA.
**Protective Clothing:** Excel.-viton;good-butyl;poor-neoprene,nitrile.
**Special Equipment:** Avoid contact.

**DISPOSAL,FIRE and SPILLS: (Use numbered codes;see attached sheets for explanation.)**
Disposal A Fire 3.7 Leaks&Spills 6,9,11
Decomposition Products: CO, $CO_2$, hydrogen chloride, and phosgene gas.

**FIRST AID:**
**ING:** Get medical attent. immed.,induce vomiting.
**IHL:** Remove to fresh air,artifical resp. if necessary, medical attent.
**Eye/Skin:** Wash/irrigate with large amounts of water for at least 15 min.
Wash skin thoroughly with soap and water.

**SYMPTOMS:**
**acute(immediate) exposure effects:** Irritating to eyes,skin,mucous membranes.
IHL: Incoorindation, confusion, drowsiness, possible loss of consciousness, nausea if ingested.

**chronic(long term) exposure effects:** Dermatitis, liver and/or kidney damage. Consumption of alchohol may increase the toxic effects of exposure.

**Reproductive effects:** Caused teratogenic effects in animals. None documented in humans, still experimental.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Trichloroethylene Date

DOT Classification Job Number

CAS Number 79-01-6

**REFERENCES CONSULTED (circle; also include MSDS if approprate.)**
NIOSH/OSHA Pocket Guide Merck Index Hazardline Chris(vol.III)
ACGIH TLV Booklet Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: Sittig

**CHEMICAL PROPERTIES:** (Synonyms: TCE, trichloroethene, ethylene trichloride)
Chemical Formula $C_2HCl_3$ MW 131 Ionization Potential 9.47ev
Physical State liquid Boiling Point 188° F Freezing Point -123° F
Flash Point None Flammable Limits 8-10.5% Vapor Pressure 58mm
Specific Gravity/Density 1.46 Odor/Odor Threshold 50ppm
Solubility-water: Insoluble Solubility-other:
Incompatabilities & Reactivity: Strong caustics, chemically active metals

**TOXICOLOGICAL PROPERTIES:**
**Exposure Limits:** TLV-TWA (ACGIH) 50ppm PEL (OSHA) 100ppm
STEL 200ppm Ceiling Limits 200ppm IDLH 1000ppm
**Toxicity Data: (Indicate duration of study)**
Human; IHL Tclo 160ppm/83min Dermal Oral
Rat/Mouse; IHL Lclo 8000ppm/4hr Dermal Oral
Aquatic: T/M 96:100-10ppm Other: exp. human carcinogen
Carcinogen pos-anim. Mutagen exper. Reproductive Toxin exp. teratogen
**Route(s) of exposure - (circle all that apply):** Inhalation Ingestion
Dermal Contact Eye(ocular) Dermal Absorption Other

**HANDLING RECOMMENDATIONS: (personal protective measures)**
**Respirators:** 500ppm - APR w/organic cartridge; 1000ppm-SCBA
**Protective Clothing:** Excel-viton; Good-neoprene/styrene; Poor-butyl, neoprene, nitrile.
**Special Equipment:** None

**DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)**
Disposal A Fire 11.13 Leaks&Spills 1,4,6,9
Decomposition Products: CO, $CO_2$, hydrogen chloride & phosgene gas

**FIRST AID:**
**ING:** Give large amounts of water, induce vomiting, medical attent.
**IHL:** Remove to fresh air, CPR if necessary, medical attent. immed.
**Eye/Skin:** Irrigate/flush with water for at least 15 min. Wash skin thoroughly with soap and water.

**SYMPTOMS:**
**acute(immediate) exposure effects:** Irritation of nose & throat, nausea, blurred vision, irritaiton to eyes, dermatitis.

**Chronic(long term) exposure effects:** Liver and/or kidney damage, cardiac degeneration, central nervous system degeneration.

**Reproductive effects:** Has produced reproductive effects in experimental animals.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

**Chemical Name** Toluene **Date** _____

**DOT Classification** _____ **Job Number** _____

**CAS Number** 108-88-3

**REFERENCES CONSULTED (circle; also include MSDS if approprate.)**
NIOSH/OSHA Pocket Guide Merck Index Hazardline Chris(vol.III)
ACGIH TLV Booklet Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: Sittig

**CHEMICAL PROPERTIES:** (Synonyms: Phenyl methane, methyl benzene )
Chemical Formula $C_6H_5CH_3$ MW 92 Ionization Potential 8.82ev
Physical State liquid Boiling Point 231°F Freezing Point -139°F
Flash Point 40°F Flammable Limits 1.27-7% Vapor Pressure 22mm
Specific Gravity/Density 0.867 Odor/Odor Threshold 0.17ppm
Solubility-water: slightly Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers, nitric acid, peroxides

**TOXICOLOGICAL PROPERTIES:**
**Exposure Limits:** TLV-TWA (ACGIH) 100ppm PEL (OSHA) 200ppm
STEL 150ppm(skin) Ceiling Limits 300ppm/15min IDLH 2000 ppm
**Toxicity Data: (Indicate duration of study)**
Human; IHL Tclo 200ppm Dermal _____ Oral _____
Rat/Mouse; IHL Lclo 4000pm/4H Dermal _____ Oral _____
Aquatic: Tlm 96: 100-10ppm Other: _____
Carcinogen exper. Mutagen exper Reproductive Toxin exp.teratogen
**Route(s) of exposure - (circle all that apply):** Inhalation Ingestion
Dermal Contact Eye(ocular) Dermal Absorption Other _____

**HANDLING RECOMMENDATIONS: (personal protective measures)**
**Respirators:** 1000ppm-APR w/chemical cartridge; 2000 ppm-SCBA
**Protective Clothing:** Excel-viton: Good-Polyurethane, neoprene/styrene;
Poor-neopene, butyl.
**Special Equipment:** None

**DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)**
Disposal D Fire 6.7 Leaks&Spills 3,4,5,6,9
Decomposition Products: CO, $CO_2$

**FIRST AID:**
**ING:** Do not induce vomiting, contact physician immed.
**IHL:** Remove to fresh air, artifical resp, if necessary.
**Eye/Skin:** Irrigate/wash with large amounts of water for at least 15 min.

**SYMPTOMS:**
**acute(immediate) exposure effects:** IHL: dizziness, headache, ING: vomiting, nausea, diarrhea. Liquid irritates eyes, dries skin.

**chronic(long term) exposure effects:** Kidney and/or liver damage if ingested. Inhalation may cause anemia, bone marrow hypoplasia. Dermatitis with skin contact.

**eproductive effects:** None

Central Iron & Metal Inc

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**REGION 5**
**230 SOUTH DEARBORN ST.**
**CHICAGO, ILLINOIS 60604**

REPLY TO THE ATTENTION OF:

Sample Collection Date: 12/18/90

Recipient Information: ALAN BLYVEIS C/O CENTRAL IRON & METAL,
Name

75 N. 14th ST.
Street Address

SPRINGFIELD MI 49016
City State Zip Code

(616) 962-6109.
Telephone Number

EPA 2/8/90
~~C. C. Johnson & Malhotra, P.C. is a subcontractor of~~ Ecology and Evironment, Inc. ~~who~~ provides support to the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347. The purpose of this contract is to evaluate sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

A copy of the sample analysis of samples collected from your property will be forwarded by the U.S. EPA within 6 months. If a copy of the sample analysis is not received within 6 months of the sample collection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U. S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-041; PAN: FMJ055858
Yellow: Recipient
Pink: U.S. EPA

Central Iron & Metal Inc

# RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U. S. EPA ID NO MID016724114

PROJ. ACCT. NO. 1MJ0358SB

TDD 105-9001-041

SPLIT SAMPLES ACCEPTED( ) DECLINED(X)

FACILITY/OCCUPANT NAME: MISSAM STEEL / CENTRAL IRON & METAL c/o ALAN BLYVEIS

FACILITY/OCCUPANT ADDRESS: 75 N. 14th STREET SPRINGFIELD, MI. 49016

| SAMPLE NUMBER | DATE | TIME | SPLIT SAMPLES (✓) | OTR# | ITR# | DESCRIPTION OF SAMPLE LOCATIONS | SEMIVOLATILES | PESTICIDES/PCBS | VOLATILES | METALS | CYANIDE | | | MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S1 | 12/18/90 | 1115 | | ENB73 | MEMS5[illegible] | S1 | / | / | / | / | / | | | SOIL |
| S2 | 12/18/90 | 1130 | | ENB74 | MEMS58 | S2 | / | / | / | / | / | | | SOIL |
| S3 | 12/18/90 | 1215 | | ENB75 | MEMS5[illegible] | S3 | / | / | / | / | / | | | SOIL |
| S4 | 12/18/90 | 1230 | | ENA12 | MEMQ9[illegible] | S4 | / | / | / | / | / | | | SOIL |
| S5 | 12/18/90 | 1320 | | ENA13 | MEMQ9[illegible] | S5 | / | / | / | / | / | | | SOIL |
| S6 | 12/18/90 | 1420 | | ENA14 | MEMQ9[illegible] | S6 | / | / | / | / | / | | | SOIL |
| S7 | 12/18/90 | 1445 | | ENA15 | MEMM01 | S7 | / | / | / | / | / | | | SOIL |
| S8 | 12/18/90 | 1500 | | ENA16 | MEMM02 | S8 | / | / | / | / | / | | | SOIL |
| ~~S9~~ | ~~12/18/90~~ | | | ~~ENA17~~ | ~~MEMM0[illegible]~~ | ~~S9~~ | ~~/~~ | ~~/~~ | ~~/~~ | ~~/~~ | ~~/~~ | | | ~~SOIL~~ |
| (NOT COLLECTED) | | | | | | | | | | | | | | |

TRANSFERRED BY: [signature] ROBERT E. SLAUGHTER (Signature) 12/18/90 (Date) 1600 (Time)

RECEIVED BY: Al Blyveis (Signature) 12/18/90 (Date) 1600 (Time)

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

TITLE: Gen Mgr.

TELEPHONE: (616) 962-6109

SSIR Reviewer Sign-Off Sheet

Site Name: Central Iron & Metal PAN: FMI 0358SB

I have reviewed this draft SSIR; it contains the elements outlined in the Quality Control Checklist and is ready for the Technical Review Committee (TRC).

Primary Reviewer Date 7/26/91

This draft SSIR has been reviewed by TRC and, with the inclusion of our agreed-upon comments, will be technically acceptable.

Chairperson Date

Geologist Date

Chemist Date

I have reviewed this draft SSIR; the report includes TRC's agreed-upon comments and is ready for review by the Publications staff.

Primary Reviewer Date

The draft SSIR has been reviewed by the Publications staff, and all appropriate editorial revisions have been incorporated.

Editor(s) Date

The draft SSIR has been reviewed by the author and Primary Reviewer; contains all relevant and appropriate SSI information and findings as agreed upon and approved by the author, TRC, and Publications staff; and is ready for submittal to U.S. EPA.

Author Date

Primary Reviewer Date

The final SSIR has been reviewed by the Publications staff, the author, and the Primary Reviewer; contains all relevant and appropriate SSI information and findings as agreed upon and approved by the author and U.S. EPA; and is ready for final submittal to U.S. EPA.

Author Date

Primary Reviewer Date

Editor(s) Date

QA030(8/23/90)

# PRIMARY REVIEWER COMMENT SHEET

CERCLIS Site Name: _____

PAN: _____

| Page/Paragraph/Line (Part/Section/Number) | Comments |
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_____ _____

Primary Reviewer Date

QA005(10/31/90)

TECHNICAL REVIEWER COMMENT SHEET Page ____ of ____

CERCLIS Site Name: _____

PAN: _____

Meeting Date: _____

Time Slot: am (8-10)
midday (10-2) pm (2-4)

Author: _____

Primary Reviewer: _____

Technical Review Committee

Chairperson: _____

Chemist: _____

Geologist: _____

| Page/Paragraph/Line (Part/Section/Number) | Comments |
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Reviewer Date

QA005(10/31/90)

# TECHNICAL REVIEW COMMITTEE RECOMMENDATIONS
(TO BE COMPLETED BY AUTHOR)

CERCLIS Site Name: _____

PAN: _____

Technical Review Committee Recommendations Date: _____

| Page/Paragraph/Line (Part/Section/Number) | Recommendations |
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_____ _____

Author Date

AUTHOR SIGN-OFF SHEET

I have written and reviewed this draft SSI report. The report contains the elements outlined in the preceding Quality Control Checklist. The report is organized in a logical manner and contains all relevant information pertinent to the site. The report is ready for review.

Author

Date 7-26-91

The draft SSIR has been reviewed for the following elements:

## Screening Site Inspection Report

- ✓ Title Page
- ✓ Signature Page
- ✓ Table of Contents (including appendices)
- ✓ List of Figures
- ✓ List of Tables
- ✓ All site identification numbers (TDD, PAN, SSID, U.S. EPA ID) are correct and consistent throughout report, 2070-13 form, appendices, and HRS package.

## Introduction

- ✓ Site name
- ✓ Site discovery (who, when, how)
- ___ PA preparation (prepared by, date)
- ___ SSI Work Plan (TDD, issuance date, approval date)
- ___ SSI field work (TDD, issuance date, inspection date, amendments)

## Site Background

- ___ Site Description (type of operation, operating status, size, location, address, brief area description, 4-mile radius map)
- ___ Site History (owners/operators, operations, and regulatory activities; all referenced)

## SSI Procedures and Field Observations

- ___ Introduction (site name, activities and procedures, work plan deviations)
- ___ Site Representative Interview (E & E employee(s), site representative(s), title(s), and affiliation(s), date, time, location, other attendees, rationale)
- ___ Reconnaissance Inspection (objective, date, time, attendees)

## SSI Procedures and Field Observations (Cont.)

____ Observations (topography, land use, bordering properties, accessibility, waste site area, equipment readings, waste disposal practices, targets, off-site pathways, other observations)

____ Site features map (text and map correspond)

## Sampling Procedures

____ Objective

____ Dates, sample numbers, matrices

____ Sample portions offered, accepted/declined

____ Sampling locations, rationales, depths

____ Sampling location maps and tables (soil/sediment, monitoring well and/or residential well; text, maps, and tables correspond)

____ Sample collection techniques (include VOAs in soils)

____ Equipment decontamination procedures

____ Collection of duplicate and blank

____ Packaging

____ Samples analyzed by CLP/CRL

____ Additional sampling (waste characterization, FASP, air, geophysics, biota, etc.)

## Analytical Results

____ Tables (circle units, substances detected, proper qualifiers, correct placement of duplicates, blanks)

____ TIC sheets if applicable; appropriate TICs should be spelled out in full with CAS numbers

## Discussion of Migration Pathways

### Groundwater

____ TCL compounds and TAL analytes detected/not detected

____ Attribution

____ Migration potential/no potential

____ Geology (surface deposits, bedrock age)

## References

____ Proper Format

____ All text citations included in References section

____ All references cited in text

## Appendices

____ Appendix A: Site 4-Mile Radius Map

- ____ 1/4-, 1/2-, 1-, 2-, 3-, 4-mile radius rings (1,2,3,4:labeled)
- ____ Water service system boundaries
- ____ Map source label
- ____ Contour interval
- ____ Well logs plotted

____ Appendix B: U.S. EPA Form 2070-13

- ____ All sections completed
- ____ Information consistent with narrative

____ Appendix C: FIT Site Photographs

- ____ General site photographs (all information completed)
- ____ Photographs sequenced (by number, by types, and with reference shots)

____ Appendix D: U.S. EPA Target Compound List and Target Analyte List Quantitation/Detection Limits (complete, correct lists used)

____ Appendix E: Well Logs of the Area of the Site

____ Appendix: Other _____

## General

____ Site name and abbreviations are consistent throughout.

____ All sections are accurate, concise and follow a logical progression.

____ The current boilerplate and SSIR Preparation Handbook have been followed.

____ All information that is not an observation or procedure of FIT has been referenced.

## HRS Prescore Cover Pages

____ Title page filled out completely and draft circled.

____ Preliminary and projected scores

____ Immediate action assessed

____ Appropriate comments and recommendations made with respect to site score and site conditions

## HRS PreScore Package

____ Title page filled out completely

____ Preliminary and projected scores calculated correctly

____ Groundwater route preliminary and projected scores and descriptions used agree with SSIR narrative and 2070-13.

____ Surface water route preliminary and projected scores (same as groundwater).

____ Air route preliminary and projected scores (same as groundwater).

____ Fire and explosion route preliminary and projected scores (same as groundwater).

____ Direct contact route preliminary and projected scores (same as groundwater).

____ All references included and correct numbers referenced.

**Groundwater (Cont.)**

____ Aquifer of concern (identification, depth, confining layers, interconnections)

____ Targets (include nearest well)

____ Target population calculation

**Surface Water**

____ TCL compounds and TAL analytes detected/Not Detected

____ Attribution

____ Migration potential/no potential

____ Pathway characteristics (nearest surface water body, intervening terrain)

____ Targets

**Air**

____ TCL compounds and TAL analytes detected/not detected

____ Site entry readings

____ Attribution

____ Migration potential/no potential (gaseous)

____ Windblown particulate potential (vegetation, cover)

____ Targets

**Fire and Explosion**

____ Identification of fire official

____ Certification

____ Instrument readings

____ Targets

**Direct Contact**

____ Documentation of incident(s)

____ Contamination potential/no potential

____ Site Accessibility

____ Targets/workers

* alone sample 4

10x Background / 3x detect

| Bkrd | Soil | | | GW | |
|---|---|---|---|---|---|
| | | | sample 8 | | |
| 105 Organic | toluene | 3.95 | detect 10 | acetone | 45 |
| | 1,2,4 trichlorobenzene | | 580J | 1,1,-dichloroethane | 0.95 |
| | 2 methylnaphthalene | | 3405 | 1,2 dichloroethene | 7 |
| | acenaphthene | | 970 | 2butanone | 0.95 |
| | dibenzofuran | | 700J | trichloroethene | 25 |
| | fluorene | 330 | 1200 | toluene | 0.55 |
| | phenathrene | 330 | 10000 | anthracene | 15 |
| Semivolatile | anthracene | 330 | 2400 | | |
| Organic | di-n-butylphtalate | 9200 330 | 8100 | | |
| | fluorantlene | 1700 330 | 8100 | | |
| | pyrene | 1500 330 | 7500 | | |
| | benzo[b]fluorantlene | 330 | 3700 | | |
| | benzo[k]fluorantlene | 330 | 3200 | | |
| | benzo[A]pyrene | 330 | 3800 | | |
| | indeno[123-cd]pyrene | | 300J | | |
| | benzo[ghi]perylene | | 810J | | |
| Pesticide | alpha BHC | 72 | sample 4 | | |
| | Dieldrin | 2000x (160) ? | | | |
| | 4,4-DDE | 51 | | | |
| | Endrin | 2400 (80) | | | |
| | Endosulfansulfate | 65 | | | |
| | Endrin Ketone | 55 | | | |
| PCB | Aroclor 1254 | 6 different samples | 8600 | | |
| Organic | Benzo[a]anthracene | | 3600 | | |
| | chrysene | | 4100 | | |
| | bis(2-ethylhexyl) phtalate * | | 1500J | | |

Polynuclear Aromatic Hydrocarbon (PAH)

| | Soil | BKG | Ground water |
|---|---|---|---|
| | | * ODP | |
| Aluminum (CSC) | 10000 (40) | 6480 | |
| Antimony | ~~26.4~~ | * | |
| Arsenic | ~~2860~~ 26.4 (1) | 9.5 | 1.2 B |
| Barium (CSC) | ~~4~~ 286 | 617 | 127 B |
| Beryllium | 2 | .88 B | |
| Cadmium | 15.1 (1) | 1.9 | 3.2 B |
| Calcium (CS) | 24300 (000) | 8470 | 132000 (5000) |
| Chromium | X 2400 (2) | 23.7 | |
| Cobalt | X 2450 | 8.3 B | |
| Copper | X 39400 5* | 31.4 | 11.68 J |
| Iron (CSC) | 22700 20 | 15600 | 6880 (100) |
| Lead | 350 (1) | 776 | ~~6880~~ |
| Magnesium (CSC | 59.5 | 1600 | 39700 |
| Manganese | 8630 (3) | 992 | ~~39700~~ 278* (15) |
| Mercury | 3.6 | — | ~~278~~ |
| Nickel | 1200 (.008) | 26.7 | |
| Potassium (CSC) | 731 B | — | 2880 B |
| Selenium | 4.3 | 1.3 | |
| Silver | 6.6 | ~~390~~ | |
| Sodium (CSC | 338 B | — | 100000 (5000) |
| Vanadium | 91.9 | 16.1 | 2.1 B |
| Zinc (CSC) | 1910 (4) | 436 | 45 |
| Cyanide | 0.81 | 0.53 B | |

Soil

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL SAMPLES

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | 9 | 10 | 11 | 12 |
| Date | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | | | | |
| Time | 1115 | 1130 | 12:15 | 12:30 | 13:20 | 1420 | 14:45 | 1500 | | | | |
| Organic Traffic Report Number | ENB 73 | ENB 74 | ENB 75 | ENA 12 | ENA 13 | ENA 14 | ENA 15 | ENA 16 | | | | |
| Inorganic Traffic Report Number | MEMS 57 | MEMS 58 | MEMS 59 | MEMQ 97 | MEMQ 98 | MEMQ 99 | MEMM 01 | MEMM 02 | | | | |
| Temperature (°C) | | | | | | | | | | | | |
| Specific Conductivity (µmhos) | | | | | | | | | | | | |
| pH | | | | | | | | | | | | |
| Compound Detected (values in > ug/L or ug/kg) | | | | | | | | | | | | |
| Volatile Organics | | | | | | | | | | | | |
| chloromethane | | | | | | | | | | | | |
| bromomethane | | | | | | | | | | | | |
| vinyl chloride | | | | | | | | | | | | |
| chloroethane | | | | | | | | | | | | |
| methylene chloride | | | | | | | | | | | | |
| acetone | | | | | | | | | | | | |
| carbon disulfide | | | | | | | | | | | | |
| 1,1-dichloroethene | | | | | | | | | | | | |
| 1,1-dichloroethane | | | | | | | | | | | | |
| 1,2-dichloroethene (total) | | | | | | | | | | | | |
| chloroform | | | | | | | | | | | | |
| 1,2-dichloroethane | | | | | | | | | | | | |
| 2-butanone (MEK) | R | R | | | R | | R | R | | | | |
| 1,1,1-trichloroethane | | | | | | | | | | | | |
| carbon tetrachloride | | | | | | | | | | | | |
| vinyl acetate | | | | | | | | | | | | |
| bromodichloromethane | | | | | | | | | | | | |
| 1,2-dichloropropane | | | | | | | | | | | | |
| cis-1,3-dichloropropene | | | | | | | | | | | | |
| trichloroethene | | | | | | | | | | | | |
| dibromochloromethane | | | | | | | | | | | | |
| 1,1,2-trichloroethane | | | | | | | | | | | | |
| benzene | | | | | | | | | | | | |
| trans-1,3-dichloropropene | | | | | | | | | | | | |
| bromoform | | | | | | | | | | | | |
| 4-methyl-2-pentanone | | | | | | | | | | | | |
| 2-hexanone | | | | | | | | | | | | |
| tetrachloroethene | | | | | | | | | | | | |
| toluene | 22J | 39J | 5J | 21J | 10J | 6J | | | | | | |
| 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| chlorobenzene | | | | | | | | | | | | |
| ethylbenzene | | | | | | | | | | | | |
| styrene | | | | | | | | | | | | |
| xylenes (total) | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | >S 1 | >S 2 | >S 3 | >S 4 | >S 5 | >S 6 | >S 7 | >S 8 | > 9 | > 10 | > 11 | > 12 |
| Semivolatile Organics | | | | | | | | | | | | |
| phenol | | | | | | | | | | | | |
| bis(2-chloroethyl)ether | | | | | | | | | | | | |
| 2-chlorophenol | | | | | | | | | | | | |
| 1,3-dichlorobenzene | | | | | | | | | | | | |
| 1,4-dichlorobenzene | | | | | | | | | | | | |
| benzyl alcohol | | | | | | | | | | | | |
| 1,2-dichlorobenzene | | | | | | | | | | | | |
| 2-methylphenol | | | | | | | | | | | | |
| bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| 4-methylphenol | | | | | | | | | | | | |
| n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| hexachloroethane | | | | | | | | | | | | |
| nitrobenzene | | | | | | | | | | | | |
| isophorone | | | | | | | | | | | | |
| 2-nitrophenol | | | | | | | | | | | | |
| 2,4-dimethylphenol | | | | | | | | | | | | |
| benzoic acid | | | | | | | | | | | | |
| bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| 2,4-dichlorophenol | | | | | | | | | | | | |
| 1,2,4-trichlorobenzene | | | | | | | | 580J | | | | |
| naphthalene | | | | | | | | | | | | |
| 4-chloroaniline | | | | | | | | | | | | |
| hexachlorobutadiene | | | | | | | | | | | | |
| 4-chloro-3-methylphenol | | | | | | | | | | | | |
| 2-methylnaphthalene | | | | | | | | 3400J | | | | |
| hexachlorocyclopentadiene | | | | | | | | | | | | |
| 2,4,6-trichlorophenol | | | | | | | | | | | | |
| 2,4,5-trichlorophenol | | | | | | | | | | | | |
| 2-chloronaphthalene | | | | | | | | | | | | |
| 2-nitroaniline | | | | | | | | | | | | |
| dimethylphthalate | | | | | | | | | | | | |
| acenaphthylene | | | | | | | | | | | | |
| 2,6-dinitrotoluene | | | | | | | | | | | | |
| 3-nitroaniline | | | | | | | | | | | | |
| acenaphthene | | | | | | | | 970 | | | | |
| 2,4-dinitrophenol | | | | | | | | | | | | |
| 4-nitrophenol | | | | | | | | | | | | |
| dibenzofuran | | | | | | | | 700J | | | | |
| 2,4-dinitrotoluene | | | | | | | | | | | | |
| diethylphthalate | | | | | | | | | | | | |
| 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| fluorene | | | | | | | | 700 | | | | |
| 4-nitroaniline | | | | | | | | | | | | |
| 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| n-nitrosodiphenylamine | | | | | | | | | | | | |
| 4-bromophenyl-phenylether | | | | | | | | | | | | |
| hexachlorobenzene | | | | | | | | | | | | |
| pentachlorophenol | | | | | | | | | | | | |
| phenanthrene | 740J | 490J | 420J | | | | | 1000 | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΣS 1 | ΣS 2 | ΣS 3 | ΣS 4 | ΣS 5 | ΣS 6 | ΣS 7 | ΣS 8 | Σ 9 | Σ 10 | Σ 11 | Σ 12 |
| Semivolatile Organics, Cont. | | | | | | | | | | | | |
| anthracene | 210J | | 330J | | | | | 2700 | | | | |
| di-n-butylphthalate | | | | | | | 9200 | | | | | |
| fluoranthene | 1700 | 200J | 670J | | | 840 | | 8100 | | | | |
| pyrene | 890 | 150J | 1500 | | | 630 | | 7500 | | | | |
| butylbenzylphthalate | | | | | | | | | | | | |
| 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| benzo[a]anthracene | 550J | | 340J | | | 360J | | 3600 | | | | |
| chrysene | 820J | | 580J | | | 620 | | 4100 | | | | |
| bis(2-ethylhexyl)phthalate | | 590 | | (5000J) | | | | | | | | |
| di-n-octylphthalate | | | | | | | | | | | | |
| benzo[b]fluoranthene | (770J) | | 370J | | | 640 | | 3700 | | | | |
| benzo[k]fluoranthene | 1000 | | 350J | | | 620 | | 3200 | | | | |
| benzo[a]pyrene | 630J | | 330J | | | 410 | | 3800 | | | | |
| indeno[1,2,3-cd]pyrene | | | | | | 720J | | 3000J | | | | |
| dibenzo[a,h]anthracene | | | | | | | | | | | | |
| benzo[g,h,i]perylene | | | | | | 250J | | 8100J | | | | |
| | | | | | | | | | | | | |
| Pesticides/PCBs | | | | | | | | | | | | |
| alpha BHC | | | | (72) | | | | | | | | |
| beta BHC | | | | | | | | | | | | |
| delta BHC | | | | | | | | | | | | |
| gamma BHC (Lindane) | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | |
| Aldrin | | | | | | | | | | | | |
| Heptachlor epoxide | | | | | | | | | | | | |
| Endosulfan I | | | | | | | | | | | | |
| Dieldrin | | | | 160 | 2000CX | | | | | | | |
| 4,4'-DDE | | | | (51) | | | | | | | | |
| Endrin | | | | 80 | 240C | | | | | | | |
| Endosulfan II | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | | | | | | | |
| Endosulfan sulfate | | | | 65 | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | |
| Methoxychlor (Mariate) | | | | | | | | | | | | |
| Endrin ketone | | | | 55 | | | | | | | | |
| alpha Chlordane | | | | | | | | | | | | |
| gamma Chlordane | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | |
| Aroclor 1016 | | | | | | | | | | | | |
| Aroclor 1221 | | | | | | | | | | | | |
| Aroclor 1232 | | | | | | | | | | | | |
| Aroclor 1242 | | | | | | | | | | | | |
| Aroclor 1248 | | | | | | | | | | | | |
| Aroclor 1254 | 8600 | 4400 | 3200 | | | 800 | 4500 | 840 | | | | |
| Aroclor 1260 | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Σ S 1 | Σ S 2 | Σ S 3 | Σ S 4 | Σ S 5 | Σ S 6 | Σ S 7 | Σ S 8 | Σ 9 | Σ 10 | Σ 11 | Σ 12 |
| Analyte Detected (values in > mg/kg or µg/L) | | | | | | | | | | | | |
| aluminum | 5060 | 10000 | 5000 | 5260 | 6480 | 6450 | 5780 | 6620 | | | | |
| antimony | | | | | | | | 20.5 | | | | |
| arsenic | 10.9 | 26.4 | 23.2WS | 11 | 9.5 | 20.5 | 15.6WS | 18.2 | | | | |
| barium | 286 | 187 | 84.8 | 139 | 67 | 92.8 | 314*S | 332 | | | | |
| beryllium | 0.86B | 0.87B | 0.78B | 2 | 0.88B | 0.62B | 0.86B | 0.85B | | | | |
| cadmium | 15.1 | 6.7 | 3.8 | | 1.9 | | 10.9 | 5.3 | | | | |
| calcium | 14400 | 24300 | 6830 | 11300 | 8470 | 4540 | 25100*S | 7060 | | | | |
| chromium | 18000 | 11000 | 4490 | 420 | 23.7 | 726 | 24500 | 360 | | | | |
| cobalt | 24.50 | 382 | 82 | 5.3 | 8.3B | 86.8 | 4480*S | 32 | | | | |
| copper | 719 | 39400 | 167 | 80.6 | 314 | 32.9 | 6060*S | 247 | | | | |
| iron | 204000 | 223000 | 77100 | 39000 | 15600 | 20900 | 237000 | 127000 | | | | |
| lead | 845 | 1190 | 179 | 185 | 776 | 60.1 | 1300 | 854 | | | | |
| magnesium | 4840 | 5950 | 2850 | 2640 | 1600 | 2540 | 12100*S | 2850 | | | | |
| manganese | 5990 | 3580 | 762 | 444 | 992 | 507 | 8630 | 1220 | | | | |
| mercury | 3.6 | 1.7 | 0.24 | 0.76 | | | 0.97 | 0.17 | | | | |
| nickel | 7930 | 7570 | 4070 | 206 | 26.7 | 512 | 11200 | 207 | | | | |
| potassium | 472B | 584B | 419B | 603B | 734B | 528B | 502B | 652B | | | | |
| selenium | 0.92BWS | 4.6+S | 4.3 | 1.5 | 1.3B | 0.55B | 0.43BWS | 0.41B | | | | |
| silver | 3.5 | 6.6 | | | | 0.98B | 5 | 1.2B | | | | |
| sodium | 238B | 103B | 82.3B | 124B | 338B | | 138BS | 82B | | | | |
| thallium | | | | | | | | | | | | |
| vanadium | 191.91 | 80.2 | 27.3 | 18.7 | 16.1 | 20.4 | 103 | 49.4 | | | | |
| zinc | 1910 | 1730 | 114 | 318 | 436 | 622 | 1860 | 1050 | | | | |
| cyanide | 0.81 | 0.64 | 0.4B | 0.85 | 0.53B | 0.2B | 0.68BWS | 0.3B | | | | |

— Not detected.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED GW SAMPLES

Ground Water

BKR

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 GW1Dup | 7 BLR | 8 | 9 | 10 | 11 | 12 |
| Date | 1/29/91 | 1/29/91 | 1/29/91 | 1/29/91 | 1/30/91 | 1/29/91 | 1/29/91 | | | | | |
| Time | 10:40 | 12:50 | 1400 | 1445 | 1130 | 1040 | 1000 | | | | | |
| Organic Traffic Report Number | E-NA18 | E-NA20 | ENA21 | ENA22 | ENA23 | ENA19 | ENA25 | | | | | |
| Inorganic Traffic Report Number | MEMM04 | MEMM06 | MEMM07 | MEMM08 | MEMM09 | MEMM05 | MEMM11 | | | | | |
| Temperature (°C) | NA | NA | NA | NA | NA | NA | NA | | | | | |
| Specific Conductivity (µmhos) | NA | NA | NA | NA | NA | NA | NA | | | | | |
| pH | NA | NA | NA | NA | NA | NA | NA | | | | | |
| Compound Detected (values in > µg/L or µg/kg) | | | | | | | | | | | | |
| Volatile Organics | | | | | | | | | | | | |
| chloromethane | | | | | | | | | | | | |
| bromomethane | | | | | | | | | | | | |
| vinyl chloride | | | | | | | | | | | | |
| chloroethane | | | | | | | | | | | | |
| methylene chloride | | | | | | | | | | | | |
| acetone | <4.5J | | | | | 3J | | | | | | |
| carbon disulfide | | | | | | | | | | | | |
| 1,1-dichloroethene | | | | | | | | | | | | |
| 1,1-dichloroethane | | | | | | | | | | | | |
| 1,2-dichloroethene (total) | | | | 0.9J | | | | | | | | |
| chloroform | | | | | | | | | | | | |
| 1,2-dichloroethane | | | | | | | | | | | | |
| 2-butanone (MEK) | | 0.9J | | | | | | | | | | |
| 1,1,1-trichloroethane | | | | | | | | | | | | |
| carbon tetrachloride | | | | | | | | | | | | |
| vinyl acetate | | | | | | | | | | | | |
| bromodichloromethane | | | | | | | | | | | | |
| 1,2-dichloropropane | | | | | | | | | | | | |
| cis-1,3-dichloropropene | | | | | | | | | | | | |
| trichloroethene | | | | 2J | | | | | | | | |
| dibromochloromethane | | | | | | | | | | | | |
| 1,1,2-trichloroethane | | | | | | | | | | | | |
| benzene | | | | | | | | | | | | |
| trans-1,3-dichloropropene | | | | | | | | | | | | |
| bromoform | | | | | | | | | | | | |
| 4-methyl-2-pentanone | | | | | | | | | | | | |
| 2-hexanone | | | | | | | | | | | | |
| tetrachloroethene | | | | | | | | | | | | |
| toluene | | | | 0.5J | | | | | | | | |
| 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| chlorobenzene | | | | | | | | | | | | |
| ethylbenzene | | | | | | | | | | | | |
| styrene | | | | | | | | | | | | |
| xylenes (total) | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number ∑_1 GW1 | ∑_2 GW2 | ∑_3 GW3 | ∑_4 GW4 | ∑_5 GW5 | ∑_6 GW6 | ∑_7 GW7 | ∑_8 | ∑_9 | ∑_10 | ∑_11 | ∑_12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Semivolatile Organics, Cont. | | | | | | | | | | | | |
| anthracene | | | | | 15 | | | | | | | |
| di-n-butylphthalate | | | | | | | | | | | | |
| fluoranthene | | | | | | | | | | | | |
| pyrene | | | | | | | | | | | | |
| butylbenzylphthalate | | | | | | | | | | | | |
| 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| benzo[a]anthracene | | | | | | | | | | | | |
| chrysene | | | | | | | | | | | | |
| bis(2-ethylhexyl)phthalate | | | | | | | | | | | | |
| di-n-octylphthalate | | | | | | | | | | | | |
| benzo[b]fluoranthene | | | | | | | | | | | | |
| benzo[k]fluoranthene | | | | | | | | | | | | |
| benzo[a]pyrene | | | | | | | | | | | | |
| indeno[1,2,3-cd]pyrene | | | | | | | | | | | | |
| dibenzo[a,h]anthracene | | | | | | | | | | | | |
| benzo[g,h,i]perylene | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Pesticides/PCBs | | | | | | | | | | | | |
| alpha BHC | | | | | | | | | | | | |
| beta BHC | | | | | | | | | | | | |
| delta BHC | | | | | | | | | | | | |
| gamma BHC (Lindane) | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | |
| Aldrin | | | | | | | | | | | | |
| Heptachlor epoxide | | | | | | | | | | | | |
| Endosulfan I | | | | | | | | | | | | |
| Dieldrin | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | | | | | | |
| Endrin | | | | | | | | | | | | |
| Endosulfan II | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | | | | | | | |
| Endosulfan sulfate | | | | | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | |
| Methoxychlor (Mariate) | | | | | | | | | | | | |
| Endrin ketone | | | | | | | | | | | | |
| alpha Chlordane | | | | | | | | | | | | |
| gamma Chlordane | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | |
| Aroclor 1016 | | | | | | | | | | | | |
| Aroclor 1221 | | | | | | | | | | | | |
| Aroclor 1232 | | | | | | | | | | | | |
| Aroclor 1242 | | | | | | | | | | | | |
| Aroclor 1248 | | | | | | | | | | | | |
| Aroclor 1254 | | | | | | | | | | | | |
| Aroclor 1260 | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ≥_1 GW | ≥_2 GW | ≥_3 GW | ≥_4 GW | ≥_5 GW | ≥_6 GW | ≥_7 GW | ≥_8 | ≥_9 | ≥_10 | ≥_11 | ≥_12 |
| Semivolatile Organics | | | | | | | | | | | | |
| phenol | | | | | | | | | | | | |
| bis(2-chloroethyl)ether | | | | | | | | | | | | |
| 2-chlorophenol | | | | | | | | | | | | |
| 1,3-dichlorobenzene | | | | | | | | | | | | |
| 1,4-dichlorobenzene | | | | | | | | | | | | |
| benzyl alcohol | | | | | | | | | | | | |
| 1,2-dichlorobenzene | | | | | | | | | | | | |
| 2-methylphenol | | | | | | | | | | | | |
| bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| 4-methylphenol | | | | | | | | | | | | |
| n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| hexachloroethane | | | | | | | | | | | | |
| nitrobenzene | | | | | | | | | | | | |
| isophorone | | | | | | | | | | | | |
| 2-nitrophenol | | | | | | | | | | | | |
| 2,4-dimethylphenol | | | | | | | | | | | | |
| benzoic acid | | | | | | | | | | | | |
| bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| 2,4-dichlorophenol | | | | | | | | | | | | |
| 1,2,4-trichlorobenzene | | | | | | | | | | | | |
| naphthalene | | | | | | | | | | | | |
| 4-chloroaniline | R | R | R | R | R | R | R | | | | | |
| hexachlorobutadiene | | | | | | | | | | | | |
| 4-chloro-3-methylphenol | | | | | | | | | | | | |
| 2-methylnaphthalene | | | | | | | | | | | | |
| hexachlorocyclopentadiene | | | | | | | | | | | | |
| 2,4,6-trichlorophenol | | | | | | | | | | | | |
| 2,4,5-trichlorophenol | | | | | | | | | | | | |
| 2-chloronaphthalene | | | | | | | | | | | | |
| 2-nitroaniline | | | | | | | | | | | | |
| dimethylphthalate | | | | | | | | | | | | |
| acenaphthylene | | | | | | | | | | | | |
| 2,6-dinitrotoluene | | | | | | | | | | | | |
| 3-nitroaniline | R | R | R | R | R | R | R | | | | | |
| acenaphthene | | | | | | | | | | | | |
| 2,4-dinitrophenol | | | | | | | | | | | | |
| 4-nitrophenol | | | | | | | | | | | | |
| dibenzofuran | | | | | | | | | | | | |
| 2,4-dinitrotoluene | | | | | | | | | | | | |
| diethylphthalate | | | | | | | | | | | | |
| 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| fluorene | | | | | | | | | | | | |
| 4-nitroaniline | | | | | | | | | | | | |
| 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| n-nitrosodiphenylamine | | | | | | | | | | | | |
| 4-bromophenyl-phenylether | | | | | | | | | | | | |
| hexachlorobenzene | | | | | | | | | | | | |
| pentachlorophenol | | | | | | | | | | | | |
| phenanthrene | | | | | | | | | | | | |

Table 4-> Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Σ_1 GW1 | Σ_2 GW2 | Σ_3 GW3 | Σ_4 GW4 | Σ_5 GW5 | Σ_6 GW6/DUP | Σ_7 GW7/BLK | Σ_8 | Σ_9 | Σ_10 | Σ_11 | Σ_12 |
| Analyte Detected (values in > mg/kg or µg/L) | | | | | | | | | | | | |
| aluminum | | | | | | | | | | | | |
| antimony | | | | | | | | | | | | |
| arsenic | | | | 4.2B> | | | | | | | | |
| barium | 44.6 | 78.5B | [127B> | 101B | 69B | 43.3B | | | | | | |
| beryllium | | | | | | | | | | | | |
| cadmium | | | [3.2B | | | | | | | | | |
| calcium | 82100 | 106000 | [132000> | 118000 | 100000 | 78000 | 81.2BJ | | | | | |
| chromium | | | | | | | | | | | | |
| cobalt | | | | | | | | | | | | |
| copper | 2.7BJ | 4.7BJ | 2.3BJ | 3.7BJ | 3.5BJ | 2.3BJ | [11.6BJ> | | | | | |
| iron | 28.9BJ | 229J | 40.1BJ | 92 | [6880> | 39.8BJ | | | | | | |
| lead | | | | | | | | | | | | |
| magnesium | 24600 | 37400 | [39700> | 36700 | 25300 | 23300 | | | | | | |
| manganese | 17.1 | 61.5 | [27B> | 150 | 69 | 14.6B | 1.2B | | | | | |
| mercury | | | | | | | | | | | | |
| nickel | | | | | | | | | | | | |
| potassium | 1730B | 1050B | 2080B | [2880B> | 1940 | 1570B | | | | | | |
| selenium | 3.1B | | | | | | | | | | | |
| silver | | | | | | | | | | | | |
| sodium | 31200 | 51900 | [100000> | 52700 | 64300 | 30400 | 92.9BJ | | | | | |
| thallium | | | | | | | | | | | | |
| vanadium | | | | | 2.1B | | | | | | | |
| zinc | 9.9B | 12.5B | 4.7BJ | 7.3B | [45> | 6.8BJ | | | | | | |
| cyanide | | | | | | | | | | | | |

— Not detected.

| COMPOUND QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a D qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

| ANALYTE QUALIFIERS | | DEFINITION | INTERPRETATION |
|---|---|---|---|
| OLD | NEW | | |
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S | S | Analysis by Method of Standard Additions. | Value is quantitative. |
| R | N | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| + | + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| | M | Duplicate injection precision not met. | Value may be semiquantitative. |
| | W | Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |

Source: Ecology and Environment, Inc. 1988.

Table 4-21
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL SAMPLES

BKGD

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SS1 | SS2 | SS3 | SS4 | SS5 | SS6 | SS7 | SS8 | 9 | 10 | 11 | 12 |
| Date | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 | | | | |
| Time | 1115 | 1130 | 12:15 | 12:30 | 13:20 | 1420 | 14:45 | 1500 | | | | |
| Organic Traffic Report Number | ENB 73 | ENB 74 | ENB 75 | ENA 12 | ENA 13 | ENA 14 | ENA 15 | ENA 16 | | | | |
| Inorganic Traffic Report Number | MEMB 57 | MEMB 58 | MEMB 59 | MEMA 97 | MEMA 98 | MEMA 99 | MEMM 01 | MEMM 02 | | | | |
| Temperature (°C) | | | | | | | | | | | | |
| Specific Conductivity (µmhos) | | | | | | | | | | | | |
| pH | | | | | | | | | | | | |
| Compound Detected (values in > µg/L or µg/kg) | | | | | | | | | | | | |
| Volatile Organics | | | | | | | | | | | | |
| chloromethane | | | | | | | | | | | | |
| bromomethane | | | | | | | | | | | | |
| vinyl chloride | | | | | | | | | | | | |
| chloroethane | | | | | | | | | | | | |
| methylene chloride | | | | | | | | | | | | |
| acetone | | | | | | | | | | | | |
| carbon disulfide | | | | | | | | | | | | |
| 1,1-dichloroethene | | | | | | | | | | | | |
| 1,1-dichloroethane | | | | | | | | | | | | |
| 1,2-dichloroethene (total) | | | | | | | | | | | | |
| chloroform | | | | | | | | | | | | |
| 1,2-dichloroethane | | | | | | | | | | | | |
| 2-butanone (MEK) | R | R | | | R | | R | R | | | | |
| 1,1,1-trichloroethane | | | | | | | | | | | | |
| carbon tetrachloride | | | | | | | | | | | | |
| vinyl acetate | | | | | | | | | | | | |
| bromodichloromethane | | | | | | | | | | | | |
| 1,2-dichloropropane | | | | | | | | | | | | |
| cis-1,3-dichloropropene | | | | | | | | | | | | |
| trichloroethene | | | | | | | | | | | | |
| dibromochloromethane | | | | | | | | | | | | |
| 1,1,2-trichloroethane | | | | | | | | | | | | |
| benzene | | | | | | | | | | | | |
| trans-1,3-dichloropropene | | | | | | | | | | | | |
| bromoform | | | | | | | | | | | | |
| 4-methyl-2-pentanone | | | | | | | | | | | | |
| 2-hexanone | | | | | | | | | | | | |
| tetrachloroethene | | | | | | | | | | | | |
| toluene | 22J | [illegible] | 5J | 21J | 10J | 6J | | | | | | |
| 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| chlorobenzene | | | | | | | | | | | | |
| ethylbenzene | | | | | | | | | | | | |
| styrene | | | | | | | | | | | | |
| xylenes (total) | | | | | | | | | | | | |

Table 4-[illegible] Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25_1 | 25_2 | 25_3 | 25_4 | 25_5 | 25_6 | 25_7 | 25_8 | 2_9 | 2_10 | 2_11 | 2_12 |
| Semivolatile Organics | | | | | | | | | | | | |
| phenol | | | | | | | | | | | | |
| bis(2-chloroethyl)ether | | | | | | | | | | | | |
| 2-chlorophenol | | | | | | | | | | | | |
| 1,3-dichlorobenzene | | | | | | | | | | | | |
| 1,4-dichlorobenzene | | | | | | | | | | | | |
| benzyl alcohol | | | | | | | | | | | | |
| 1,2-dichlorobenzene | | | | | | | | | | | | |
| 2-methylphenol | | | | | | | | | | | | |
| bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| 4-methylphenol | | | | | | | | | | | | |
| n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| hexachloroethane | | | | | | | | | | | | |
| nitrobenzene | | | | | | | | | | | | |
| isophorone | | | | | | | | | | | | |
| 2-nitrophenol | | | | | | | | | | | | |
| 2,4-dimethylphenol | | | | | | | | | | | | |
| benzoic acid | | | | | | | | | | | | |
| bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| 2,4-dichlorophenol | | | | | | | | | | | | |
| 1,2,4-trichlorobenzene | | | | | | | | | | | | |
| naphthalene | | | | | | | | 580J | | | | |
| 4-chloroaniline | | | | | | | | | | | | |
| hexachlorobutadiene | | | | | | | | | | | | |
| 4-chloro-3-methylphenol | | | | | | | | | | | | |
| 2-methylnaphthalene | | | | | | | | | | | | |
| hexachlorocyclopentadiene | | | | | | | | 340J | | | | |
| 2,4,6-trichlorophenol | | | | | | | | | | | | |
| 2,4,5-trichlorophenol | | | | | | | | | | | | |
| 2-chloronaphthalene | | | | | | | | | | | | |
| 2-nitroaniline | | | | | | | | | | | | |
| dimethylphthalate | | | | | | | | | | | | |
| acenaphthylene | | | | | | | | | | | | |
| 2,6-dinitrotoluene | | | | | | | | | | | | |
| 3-nitroaniline | | | | | | | | | | | | |
| acenaphthene | | | | | | | | | | | | |
| 2,4-dinitrophenol | | | | | | | | 970 | | | | |
| 4-nitrophenol | | | | | | | | | | | | |
| dibenzofuran | | | | | | | | | | | | |
| 2,4-dinitrotoluene | | | | | | | | 700J | | | | |
| diethylphthalate | | | | | | | | | | | | |
| 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| fluorene | | | | | | | | | | | | |
| 4-nitroaniline | | | | | | | | 1200 | | | | |
| 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| n-nitrosodiphenylamine | | | | | | | | | | | | |
| 4-bromophenyl-phenylether | | | | | | | | | | | | |
| hexachlorobenzene | | | | | | | | | | | | |
| pentachlorophenol | | | | | | | | | | | | |
| phenanthrene | 740J | 1900J | 420J | | | | | 10000 | | | | |

Table 4-[illegible] Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25.1 | 25.2 | 25.3 | 25.4 | 25.5 | 25.6 | 25.7 | 25.8 | 2_9 | 2_10 | 2_11 | 2_12 |
| Semivolatile Organics, Cont. | | | | | | | | | | | | |
| anthracene | 210J | | 330J | | | | | 2100 | | | | |
| di-n-butylphthalate | | | | | | | 9200 | | | | | |
| fluoranthene | 1700 | 200J | 670J | | | 840 | | 8100 | | | | |
| pyrene | 890 | 150J | 1500 | | | 630 | | 7500 | | | | |
| butylbenzylphthalate | | | | | | | | | | | | |
| 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| benzo[a]anthracene | 550J | | 340J | | | 360J | | 3600 | | | | |
| chrysene | 880 | | 580J | | | 620 | | 4400 | | | | |
| bis(2-ethylhexyl)phthalate | | 590 | | 150000J | | | | | | | | |
| di-n-octylphthalate | | | | | | | | | | | | |
| benzo[b]fluoranthene | 770J | | 370J | | | 640 | | 3700 | | | | |
| benzo[k]fluoranthene | 1000 | | 350J | | | 620 | | 3200 | | | | |
| benzo[a]pyrene | 630J | | 330J | | | 410 | | 3800 | | | | |
| indeno[1,2,3-cd]pyrene | | | | | | 720J | | 3000J | | | | |
| dibenzo[a,h]anthracene | | | | | | | | | | | | |
| benzo[g,h,i]perylene | | | | | | 250J | | 810J | | | | |
| | | | | | | | | | | | | |
| Pesticides/PCBs | | | | | | | | | | | | |
| alpha BHC | | | | 72 | | | | | | | | |
| beta BHC | | | | | | | | | | | | |
| delta BHC | | | | | | | | | | | | |
| gamma BHC (Lindane) | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | |
| Aldrin | | | | | | | | | | | | |
| Heptachlor epoxide | | | | | | | | | | | | |
| Endosulfan I | | | | | | | | | | | | |
| Dieldrin | | | | 160 | 2000CX | | | | | | | |
| 4,4'-DDE | | | | 51 | | | | | | | | |
| Endrin | | | | 80 | 240C | | | | | | | |
| Endosulfan II | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | | | | | | | |
| Endosulfan sulfate | | | | 65 | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | |
| Methoxychlor (Marlate) | | | | | | | | | | | | |
| Endrin ketone | | | | 55 | | | | | | | | |
| alpha Chlordane | | | | | | | | | | | | |
| gamma Chlordane | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | |
| Aroclor 1016 | | | | | | | | | | | | |
| Aroclor 1221 | | | | | | | | | | | | |
| Aroclor 1232 | | | | | | | | | | | | |
| Aroclor 1242 | | | | | | | | | | | | |
| Aroclor 1248 | | | | | | | | | | | | |
| Aroclor 1254 | 8600 | 4400 | 3200 | | | 800 | 4500 | 840 | | | | |
| Aroclor 1260 | | | | | | | | | | | | |

Table 4-[illegible] Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25.1 | 25.2 | 25.3 | 25.4 | 25.5 | 25.6 | 25.7 | 25.8 | 2_9 | 2_10 | 2_11 | 2_12 |
| Analyte Detected (values in ) mg/kg or µg/L) | | | | | | | | | | | | |
| aluminum | 5060 | 10000 | 5000 | 5260 | 6480 | 6450 | 5780 | 6620 | | | | |
| antimony | | | | | | | | 20.5 | | | | |
| arsenic | 10.9 | 26.4 | 25.2WS | 11 | 9.5 | 20.5 | 15.6WS | 18.2 | | | | |
| barium | 286 | 187 | 84.8 | 139 | 67 | 92.8 | 314*S | 332 | | | | |
| beryllium | 0.86B | 0.82B | 0.78B | 2 | 0.88B | 0.62B | 0.86B | 0.85B | | | | |
| cadmium | 15.1 | 6.7 | 3.8 | | 1.9 | | 10.9 | 5.3 | | | | |
| calcium | 14400 | 24300 | 6830 | 11300 | 8470 | 4540 | 25100*S | 7060 | | | | |
| chromium | 18000 | 11000 | 4490 | 420 | 23.7 | 726 | 24800 | 360 | | | | |
| cobalt | 2450 | 302 | 821 | 51.3 | 8.3B | 86.8 | 4480*S | 32 | | | | |
| copper | 719 | 39400 | 167 | 80.6 | 314 | 32.9 | 6060*S | 247 | | | | |
| iron | 204000 | 223000 | 77100 | 29000 | 15600 | 20900 | 222000 | 127000 | | | | |
| lead | 845 | 1100 | 179 | 185 | 776 | 60.1 | 1300 | 854 | | | | |
| magnesium | 4040 | 5950 | 2890 | 2640 | 1600 | 2140 | 12100*S | 2850 | | | | |
| manganese | 5990 | 3580 | 762 | 444 | 992 | 507 | 8630 | 1220 | | | | |
| mercury | 3.6 | 1.7 | 0.24 | 0.78 | | | 0.97 | 0.17 | | | | |
| nickel | 7930 | 7570 | 4070 | 206 | 267 | 512 | 11200 | 207 | | | | |
| potassium | 472B | 534B | 498B | 603B | 731B | 528B | 801B | 652B | | | | |
| selenium | 0.92BWS | 0.67S | 43 | 1.5 | 1.3B | 0.55B | 0.43BWS | 0.41B | | | | |
| silver | 3.5 | 6.6 | | | | 0.98B | 5 | 1.2B | | | | |
| sodium | 238B | 103B | 823B | 124B | 338B | | 138BS | 82B | | | | |
| thallium | | | | | | | | | | | | |
| vanadium | 91.9 | 80.2 | 27.3 | 18.7 | 16.1 | 20.4 | 103 | 49.4 | | | | |
| zinc | 1910 | 1730 | 114 | 318 | 436 | 622 | 1860 | 1050 | | | | |
| cyanide | 0.81 | 0.64 | 0.4B | 0.85 | 0.53B | 0.2B | 0.68BWS | 0.3B | | | | |

— Not detected.

| COMPOUND QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a D qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

| ANALYTE QUALIFIERS | | DEFINITION | INTERPRETATION |
|---|---|---|---|
| OLD | NEW | | |
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S | S | Analysis by Method of Standard Additions. | Value is quantitative. |
| R | W | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| A | A | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| * | * | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| | M | Duplicate injection precision not met. | Value may be semiquantitative. |
| | W | Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |

Source: Ecology and Environment, Inc. 1988.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED GW SAMPLES

Ground Water

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW1 | MW2 | MW3 | MW4 | MW5 | DUP | BLNK | _8 | _9 | _10 | _11 | _12 |
| Date | 1/29/91 | 1/29/91 | 1/29/91 | 1/29/91 | 1/30/91 | 1/29/91 | 1/29/91 | | | | | |
| Time | 10:40 | 12:50 | 1400 | 1445 | 1130 | 1040 | 1000 | | | | | |
| Organic Traffic Report Number | E-NA18 | E-NA20 | ENA21 | ENA22 | ENA23 | E-NA19 | ENA25 | | | | | |
| Inorganic Traffic Report Number | MEMM04 | MEMM06 | MEMM07 | MEMM08 | MEMM09 | MEMM05 | MEMM11 | | | | | |
| Temperature (°C) | NA | NA | NA | NA | NA | NA | NA | | | | | |
| Specific Conductivity (µmhos) | NA | NA | NA | NA | NA | NA | NA | | | | | |
| pH | NA | NA | NA | NA | NA | NA | NA | | | | | |
| Compound Detected (values in ) (µg/L or µg/kg) | | | | | | | | | | | | |
| Volatile Organics | | | | | | | | | | | | |
| chloromethane | | | | | | | | | | | | |
| bromomethane | | | | | | | | | | | | |
| vinyl chloride | | | | | | | | | | | | |
| chloroethane | | | | | | | | | | | | |
| methylene chloride | | | | | | | | | | | | |
| acetone | 4J | | | | | 3J | | | | | | |
| carbon disulfide | | | | | | | | | | | | |
| 1,1-dichloroethene | | | | | | | | | | | | |
| 1,1-dichloroethane | | | | 0.9J | | | | | | | | |
| 1,2-dichloroethene (total) | | | | 7 | | | | | | | | |
| chloroform | | | | | | | | | | | | |
| 1,2-dichloroethane | | | | | | | | | | | | |
| 2-butanone (MEK) | | 0.9J | | | | | | | | | | |
| 1,1,1-trichloroethane | | | | | | | | | | | | |
| carbon tetrachloride | | | | | | | | | | | | |
| vinyl acetate | | | | | | | | | | | | |
| bromodichloromethane | | | | | | | | | | | | |
| 1,2-dichloropropane | | | | | | | | | | | | |
| cis-1,3-dichloropropene | | | | | | | | | | | | |
| trichloroethene | | | | 2J | | | | | | | | |
| dibromochloromethane | | | | | | | | | | | | |
| 1,1,2-trichloroethane | | | | | | | | | | | | |
| benzene | | | | | | | | | | | | |
| trans-1,3-dichloropropene | | | | | | | | | | | | |
| bromoform | | | | | | | | | | | | |
| 4-methyl-2-pentanone | | | | | | | | | | | | |
| 2-hexanone | | | | | | | | | | | | |
| tetrachloroethene | | | | | | | | | | | | |
| toluene | | | | 0.5J | | | | | | | | |
| 1,1,2,2-tetrachloroethane | | | | | | | | | | | | |
| chlorobenzene | | | | | | | | | | | | |
| ethylbenzene | | | | | | | | | | | | |
| styrene | | | | | | | | | | | | |
| xylenes (total) | | | | | | | | | | | | |

Table 4-2 Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW1 | MW2 | MW3 | MW4 | MW5 | DUP | BLANK | 2_8 | 2_9 | 2_10 | 2_11 | 2_12 |
| Semivolatile Organics | | | | | | | | | | | | |
| phenol | | | | | | | | | | | | |
| bis(2-chloroethyl)ether | | | | | | | | | | | | |
| 2-chlorophenol | | | | | | | | | | | | |
| 1,3-dichlorobenzene | | | | | | | | | | | | |
| 1,4-dichlorobenzene | | | | | | | | | | | | |
| benzyl alcohol | | | | | | | | | | | | |
| 1,2-dichlorobenzene | | | | | | | | | | | | |
| 2-methylphenol | | | | | | | | | | | | |
| bis(2-chloroisopropyl)ether | | | | | | | | | | | | |
| 4-methylphenol | | | | | | | | | | | | |
| n-nitroso-di-n-dipropylamine | | | | | | | | | | | | |
| hexachloroethane | | | | | | | | | | | | |
| nitrobenzene | | | | | | | | | | | | |
| isophorone | | | | | | | | | | | | |
| 2-nitrophenol | | | | | | | | | | | | |
| 2,4-dimethylphenol | | | | | | | | | | | | |
| benzoic acid | | | | | | | | | | | | |
| bis(2-chloroethoxy)methane | | | | | | | | | | | | |
| 2,4-dichlorophenol | | | | | | | | | | | | |
| 1,2,4-trichlorobenzene | | | | | | | | | | | | |
| naphthalene | | | | | | | | | | | | |
| 4-chloroaniline | R | R | R | R | R | R | R | | | | | |
| hexachlorobutadiene | | | | | | | | | | | | |
| 4-chloro-3-methylphenol | | | | | | | | | | | | |
| 2-methylnaphthalene | | | | | | | | | | | | |
| hexachlorocyclopentadiene | | | | | | | | | | | | |
| 2,4,6-trichlorophenol | | | | | | | | | | | | |
| 2,4,5-trichlorophenol | | | | | | | | | | | | |
| 2-chloronaphthalene | | | | | | | | | | | | |
| 2-nitroaniline | | | | | | | | | | | | |
| dimethylphthalate | | | | | | | | | | | | |
| acenaphthylene | | | | | | | | | | | | |
| 2,6-dinitrotoluene | | | | | | | | | | | | |
| 3-nitroaniline | R | R | R | R | R | R | R | | | | | |
| acenaphthene | | | | | | | | | | | | |
| 2,4-dinitrophenol | | | | | | | | | | | | |
| 4-nitrophenol | | | | | | | | | | | | |
| dibenzofuran | | | | | | | | | | | | |
| 2,4-dinitrotoluene | | | | | | | | | | | | |
| diethylphthalate | | | | | | | | | | | | |
| 4-chlorophenyl-phenylether | | | | | | | | | | | | |
| fluorene | | | | | | | | | | | | |
| 4-nitroaniline | | | | | | | | | | | | |
| 4,6-dinitro-2-methylphenol | | | | | | | | | | | | |
| n-nitrosodiphenylamine | | | | | | | | | | | | |
| 4-bromophenyl-phenylether | | | | | | | | | | | | |
| hexachlorobenzene | | | | | | | | | | | | |
| pentachlorophenol | | | | | | | | | | | | |
| phenanthrene | | | | | | | | | | | | |

Table 4-7 Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW1 | MW2 | MW3 | MW4 | MW5 | DUP | BLANK | Σ 8 | Σ 9 | Σ 10 | Σ 11 | Σ 12 |
| Semivolatile Organics, Cont. | | | | | | | | | | | | |
| anthracene | | | | | 15 | | | | | | | |
| di-n-butylphthalate | | | | | | | | | | | | |
| fluoranthene | | | | | | | | | | | | |
| pyrene | | | | | | | | | | | | |
| butylbenzylphthalate | | | | | | | | | | | | |
| 3,3'-dichlorobenzidine | | | | | | | | | | | | |
| benzo(a)anthracene | | | | | | | | | | | | |
| chrysene | | | | | | | | | | | | |
| bis(2-ethylhexyl)phthalate | | | | | | | | | | | | |
| di-n-octylphthalate | | | | | | | | | | | | |
| benzo(b)fluoranthene | | | | | | | | | | | | |
| benzo(k)fluoranthene | | | | | | | | | | | | |
| benzo(a)pyrene | | | | | | | | | | | | |
| indeno(1,2,3-cd)pyrene | | | | | | | | | | | | |
| dibenzo(a,h)anthracene | | | | | | | | | | | | |
| benzo(g,h,i)perylene | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Pesticides/PCBs | | | | | | | | | | | | |
| alpha BHC | | | | | | | | | | | | |
| beta BHC | | | | | | | | | | | | |
| delta BHC | | | | | | | | | | | | |
| gamma BHC (Lindane) | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | |
| Aldrin | | | | | | | | | | | | |
| Heptachlor epoxide | | | | | | | | | | | | |
| Endosulfan I | | | | | | | | | | | | |
| Dieldrin | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | | | | | | |
| Endrin | | | | | | | | | | | | |
| Endosulfan II | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | | | | | | | |
| Endosulfan sulfate | | | | | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | |
| Methoxychlor (Marlate) | | | | | | | | | | | | |
| Endrin ketone | | | | | | | | | | | | |
| alpha Chlordane | | | | | | | | | | | | |
| gamma Chlordane | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | |
| Aroclor 1016 | | | | | | | | | | | | |
| Aroclor 1221 | | | | | | | | | | | | |
| Aroclor 1232 | | | | | | | | | | | | |
| Aroclor 1242 | | | | | | | | | | | | |
| Aroclor 1248 | | | | | | | | | | | | |
| Aroclor 1254 | | | | | | | | | | | | |
| Aroclor 1260 | | | | | | | | | | | | |

Table 4-2 Cont.

| Sample Collection Information and Parameters | Sample Number | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW1 | MW2 | MW3 | MW4 | MW5 | DUP | BLANK | 2_8 | 2_9 | 2_10 | 2_11 | 2_12 |
| Analyte Detected (values in > mg/kg or ug/L) | | | | | | | | | | | | |
| aluminum | | | | | | | | | | | | |
| antimony | | | | | | | | | | | | |
| arsenic | | | | 1.2B | | | | | | | | |
| barium | 44.6 | 78.5B | 127B | 101B | 69B | 43.3B | | | | | | |
| beryllium | | | | | | | | | | | | |
| cadmium | | | 3.2B | | | | | | | | | |
| calcium | 92100 | 106000 | 132000 | 118000 | 100000 | 78000 | 81.7BJ | | | | | |
| chromium | | | | | | | | | | | | |
| cobalt | | | | | | | | | | | | |
| copper | 2.7BJ | 4.7BJ | 2.3BJ | 3.7 BJ | 3.5BJ | 2.3BJ | 11.6BJ | | | | | |
| iron | 28.9BJ | 229J | 40.1BJ | 592 | 6880 | 39.8BJ | | | | | | |
| lead | | | | | | | | | | | | |
| magnesium | 24600 | 37400 | 39700 | 36700 | 25500 | 23300 | | | | | | |
| manganese | 17.1 | 61.5 | 27B | 150 | 69 | 14.6B | 1.2B | | | | | |
| mercury | | | | | | | | | | | | |
| nickel | | | | | | | | | | | | |
| potassium | 1730B | 1050B | 2080B | 2880B | 1940 | 1570B | | | | | | |
| selenium | 3.1B | | | | | | | | | | | |
| silver | | | | | | | | | | | | |
| sodium | 31200 | 51900 | 100000 | 52700 | 64300 | 30400 | 92.9BJ | | | | | |
| thallium | | | | | | | | | | | | |
| vanadium | | | | | 2.1B | | | | | | | |
| zinc | 9.9B | 12.5B | 4.7BJ | 7.3B | 45 | 6.8BJ | | | | | | |
| cyanide | | | | | | | | | | | | |

— Not detected.

COMPOUND QUALIFIERS

| | DEFINITION | INTERPRETATION |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| UJ | Quantitation limit is estimated due to a quality control (QC) protocol. | Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µL in the final extract shall be confirmed by GC/MS. | Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will <u>not</u> apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semiquantitative. There should be another analysis with a D qualifier, which is to be used. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. Data is quantitative. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a laboratory artifact in the TICs only. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

ANALYTE QUALIFIERS

| OLD | NEW | DEFINITION | INTERPRETATION |
|---|---|---|---|
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| S | S | Analysis by Method of Standard Additions. | Value is quantitative. |
| R | N | Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semiquantitative. |
| + | + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC protocol. | Value may be semiquantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected at or above the CRDL. |
| | M | Duplicate injection precision not met. | Value may be semiquantitative. |
| | W | Post-digestion spike for furnace AA analysis is out of control limits (85-115%), while sample absorbance is <50% of spike absorbance. | Value may be semiquantitative. |

Source: Ecology and Environment, Inc. 1988.

# SITE INSPECTIONS AND SIMILAR ACTIVITIES

ecology and environment, inc.
CHICAGO, ILLINOIS

SITE NAME Central Iron & Metal TDD F05-9001-041 PROJECT ACCOUNT NO. FMI0358SA

PROJECT LEADER Wendy Davis PROJECTED LOE HOURS 675

DATE ASSIGNED / / DATE COMPLETED / / WEEK ENDING / /

| EMPLOYEE | A GENERAL NON-SPECIFIC | B FILE SEARCH/REVIEW | C WORK PLAN | D SAFETY PLAN | E QAPP | F MOBILIZATION AND DEMOBILIZATION | G TRAVEL | H NON-SAMPLING FIELD WORK | I SAMPLE MANAGEMENT | J FIELD SAMPLING | K SCREENING/ ANALYTICAL | L SUBCONTRACT | M METEORLOGIC/AIR SAMPLING STUDIES | N GEOPHYSICAL WORK | O HYDROGEOLOGICAL WORK | P DATA PROCESSING/ MODELLING | Q DATA VALIDATION | R DRAFT FINAL DELIVERABLE | S INTERNAL QA REVIEW | T FINAL DELIVERABLE | U RESPOND TO COMMENTS | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Team Leader | ~~87~~ | 57 | 20 | ~~70~~ 12 | 4/4 | ~~8~~ | ~~12~~ | 6/6 | | 40 | 32/8 | | | | | | | [redacted] | | 10 | | 247 |
| S.S.O. | 5 | | | | 4/4 | 8 | ~~12~~ | 6/6 | | 40 | 32/8 | | | | | | | | | | | 65 |
| Sampler | 5 | | | | | | 12 | 40 | 40 | | | | | | | | | | | | | 97 |
| Team Member | 5 | | | | | | 12 | | | 40 | | | | | | | | | | | | 57 |
| Team Member | 5 | | | | | | 12 | | | 40 | | | | | | | | | | | | 57 |
| Air Monitoring | 20 | | | | | 4 | 12 | 6 | | 24 | | | | | | | | | | | | 66 |
| | | | | | | | | | | | | | | | | | | | | | | |
| ~~Word Pro. & Editing~~ | | | | | | | | | | | | | | | | | | [redacted] | | 5 | | 45 |
| Q.A. | | | | 6 | | | | | | | | | | | | | 10 | | 25 | | | 41 |
| TOTALS FOR PROJECT | 127 | | | 16 | | 20 | 72 | 46 | 40 | 184 | | | | | | | 10 | [redacted] | 25 | 15 | | 675 |

DESCRIPTIONS OF WEEKS ACTIVITIES ~~6~~ days with ~~6~~ people
4 3 4

GEOLOGICAL SURVEY SAMPLE NO.

4

JAN 06 1981

# WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

## 1 LOCATION OF WELL

| County | Township Name | Fraction | Section Number | Town Number | Range Number |
|---|---|---|---|---|---|
| CALHOUN | BATTLE CREEK | NW¼SW¼SW¼ | 2 | 2 N/S. | 8 E/W. |

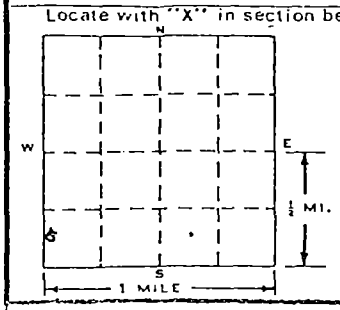
Distance And Direction from Road Intersections

Non-Responsive [redacted]

Street address & City of Well Location

Locate with "X" in section below

Sketch Map:




4 WELL DEPTH: (completed) 100 ft. Date of Completion 11/18/80

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☒ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐ Diam. 4 in. to 54 ft. Depth ____ in. to ____ ft. Depth

Height: Above/~~Below~~ Surface 1 ft. Weight ____ lbs./ft. Drive Shoe? Yes ☒ No ☐

8 SCREEN: Type: ____ Dia.: ____ Slot/Gauze X Length ____ Set between ____ ft. and ____ ft. Fittings:

9 STATIC WATER LEVEL 28 ft. below land surface

10 PUMPING LEVEL below land surface 30 ft. after 1 hrs. pumping 20 g.p.m. ____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☐ No ☒ Neat Cement ☐ Bentonite ☐ ____ Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination 100 feet S Direction Septic Type Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed Manufacturer's Name Gould Model Number 7EH HP 13 Volts 115 Length of Drop Pipe 42 ft. capacity 10 G.P.M. Type: ☒ Submersible ☐ Jet ☐ Reciprocating

| 2 FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| Gravel & Sand | 12 | 12 |
| Clay - Some Sand | 23 | 35 |
| Sand Rock - some Clay | 15 | 50 |
| Sand Rock | 100 | |

ADDED INFO BY DRILLER, ITEM NO.
RESTRICTED BY
RESTRICTED BY
ELEVATION
DEPTH TO ROCK

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

BOB MACKALUSO
PUMPS And PLUMBING
Sales and Service
127 BEULAH AVENUE
Battle Creek, Michigan
Phone WO 4-4308

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Bob Mackaluso Well Drilling — REGISTERED BUSINESS NAME
0260 — REGISTRATION NO.

Address

Sign: Bob Mackaluso Jr. — AUTHORIZED REPRESENTATIVE
Date 11-18-80

D67d 100M (Rev. 12-68)

GEOLOGICAL SURVEY SAMPLE No.

3

APR 09 1980

# WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

## 1 LOCATION OF WELL

| County | Township Name | Fraction | Section Number | Town Number | Range Number |
|---|---|---|---|---|---|
| Calhoun | Battle Creek | SE ¼ SW ¼ ¼ | 2 | 2 N/S. | 9 E/W. |

Non-Responsive [redacted]

Non-Responsive [redacted]

Street address & City of Well Location

Non-Responsive [redacted]

4 WELL DEPTH: (completed) 95 ft. Date of Completion 2/28/80

5 ☐ Cable tool ☑ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☑ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐

7 CASING: Threaded ☑ Welded ☐ Diam. 4 in. to 53 ft. Depth; ____ in. to ____ ft. Depth. Height: Above/Below Surface ____ ft. Weight 11 lbs./ft. Drive Shoe? Yes ☑ No ☐

8 SCREEN: Type: None Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings: Rock Well

9 STATIC WATER LEVEL 14 ft. below land surface

10 PUMPING LEVEL below land surface ____ ft. after ____ hrs. pumping ____ g.p.m. Air Test ____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☑ Pitless Adapter ☑ 12" Above Grade

13 Well Grouted? ☑ Yes ☐ No ☐ Neat Cement ☑ Bentonite ☐ ____ Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination ____ feet ____ Direction ____ Type. Well disinfected upon completion ☑ Yes ☐ No

15 PUMP: ☐ Not installed. Manufacturer's Name Red Jacket ... Model Number 7D9P051-3 HP 1/2 Volts 230. Length of Drop Pipe 42 ft. capacity 7 G.P.M. Type: ☑ Submersible ☐ Jet ☐ Reciprocating

## 2 FORMATION

| FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| Sand gravel | | |
| streaks of clay | 48 | 48 |
| Broken rock | 4 | 52 |
| Marshall | 43 | 95 |

ADDED INFO BY DRILLER, ITEM NO.
*CORRECTED BY
**ADDITION BY dlv
ELEVATION
DEPTH TO ...
USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

RECEIVED APR 4 1980 Calhoun County Health Department Battle Creek, Mich.

17 WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[illegible] 1386
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address 14318-9 Mile Rd - Battle Creek

Signed [signature] AUTHORIZED REPRESENTATIVE Date 2/28/80

D67d 100M (Rev. 12-68)

# WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

Sect 2

1 LOCATION OF WELL

| County | ~~Twp.~~ CITY | Fraction | Section No. | Town | Range |
|---|---|---|---|---|---|
| CALHOUN | SPRINGFIELD | SE ¼ NW ¼ SW ¼ | 24 | 2 N/S. | 8 E/W. |

Non-Responsive [redacted] Non-Responsive

| 2 FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| Sand & Gravel | 40 | 40 |
| Sand & Clay Mixed | 10 | (50) |
| Gray Sand Rock | 40 | 90 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Where on 14th St | | |

4 WELL DEPTH: (completed) 90 ft. Date of Completion 10-26-68

5 ☐ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☑ Bored ☐ ___

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☑ Commercial ☐ Test Well ☐ ___

7 CASING: Threaded ☑ Welded ☐ Diam. 4 in. to 50 ft. Depth; ___ in. to ___ ft. Depth. Height: Above/~~Below~~ surface 2 ft. Weight 11 lbs/ft. Drive Shoe? Yes ☑ No ☐

8 SCREEN: ROCK
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL 25 ft. below land surface

10 PUMPING LEVEL below land surface
25 ft. after 1 hrs. pumping 20 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☑ 12" Above Grade

13 GROUTING:
Well Grouted? ☑ Yes ☐ No
Material: ☑ Neat Cement ☐ ___
Depth: From 50 ft. to 50 ft.

14 SANITARY: City Sewer
Nearest Source of possible contamination
___ feet ___ Direction ___ Type
Well disinfected upon completion ☑ Yes ☐ No

15 PUMP:
Manufacturer's Name ___
Model Number ___ HP ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ ___ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

[illegible] BY DRILLER, ITEM NO.

[illegible]ECTED BY:

READDITION BY:

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

FOX WELL DRILLING 0013
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address R#6 BOX 1225A Battle Creek

Signed Earl Fox Date 10-26-68
AUTHORIZED REPRESENTATIVE

D67D 100M 6-66

Page ___ of ___

Sample No.

MICHIGAN DEPARTMENT OF CONSERVATION
GEOLOGICAL SURVEY DIVISION

# WATER WELL RECORD

Permit No.

Owner No.

| County | Twp. | | Sec. | Town | Range |
|---|---|---|---|---|---|
| Calhoun | Battle Creek | SE & SE & NW | 2 | 2 S. | 8 W. |

Non-Responsive

[redacted]

Non-Responsive

[redacted]

| FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| Sand | (?) | |
| Gravel | (?) | |
| Clay | 55 | 55 |
| Rock | 15 | 70 |

D.T = 55
CBR = 764
elev = 819

Well Depth: 70 ft. Date of Completion ?

☒ Cable tool ☐ Rotary ☐ Dug ☐ R.C.
☒ Driven ☐ Jetted ☐ Bored

Use: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Dewatering
☐ Test Well ☐

Casing: Diam. 3 in. to 57 ft. Depth
___ in. to ___ ft. Depth

Height: Above/Below surface ___ ft.
Type-Weight

Screen:
Type: none Dia: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Accessories:

Water level: 10 ft. above/below elev = 809? (may be pumping level)
___ ft. above/below
Meas. by Date

Drawdown:
0 ft. after 2 hrs. pumping 60 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.
Meas. by Date

Flow: g.p.m./g.p.h. Temp: °F

Water Quality in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___

Elevation: ft. above

Source of data:

Record by: Date:

Remarks: Drove casing to Rock - Cable tool through rock.

FEB 0 3 1978

# WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

**1 LOCATION OF WELL**

| County | Township Name | Fraction | Section Number | Town Number | Range Number |
|---|---|---|---|---|---|
| Calhoun | Battle Creek | NW ¼ SW ¼ | 2 | T2 S. | R8 W. |

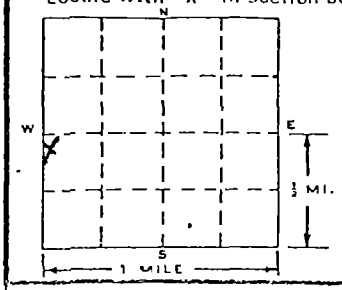
Distance And Direction from Road Intersections

Non-Responsive

Street address & City of Well Location

Locate with "X" in section below

Sketch Map:




**4 WELL DEPTH:** (completed) 88' ft. Date of Completion 10-19-77

**5** ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

**6 USE:** ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

**7 CASING:** Threaded ☐ Welded ☐ Diam. 4 in. to 51 ft. Depth; ____ in. to ____ ft. Depth

Height: Above Surface 1 ft. Weight .08 lbs./ft. Drive Shoe? Yes ☒ No ☐

**8 SCREEN:**
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

**9 STATIC WATER LEVEL** 25 ft. below land surface

**10 PUMPING LEVEL** below land surface 48 ft. after 1 hrs. pumping 40 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

**11 WATER QUALITY** in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

**12 WELL HEAD COMPLETION:** ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

**13** Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

**14** Nearest Source of possible contamination
25 feet N Direction SF Type
Well disinfected upon completion ☒ Yes ☐ No

**15 PUMP:** ☐ Not installed
Manufacturer's Name Aermotor
Model Number SD12 50 HP ½ Volts 220
Length of Drop Pipe 40 ft. capacity 15 G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

**2**

| FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| 0 Sand & Gravel | 6 | 6 |
| Boulders. | 12 | 18 |
| Clay & Sand Rock | 8 | 26 |
| Soft Sand Rock | 12 | 38 |
| Marshville Sand Stone | 50 | 88 |

USE A 2ND SHEET IF NEEDED

**16 Remarks, elevation, source of data, etc.**
ADDED INFO BY DRILLER, ITEM NO.
*CORRECTED BY
**ADDITION BY
ELEVATION
DEPTH TO ROCK

**17 WATER WELL CONTRACTOR'S CERTIFICATION:**
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Walton Plumbing Co. 0210
REGISTERED BUSINESS NAME REGISTRATION NO.

Address Battle Creek Mi 49015

Signed Warren Walters Date 12-29-77
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

MICHIGAN DEPARTMENT OF CONSERVATION
GEOLOGICAL SURVEY DIVISION

# WATER WELL RECORD

Page ___ of ___
Sample No.

Permit No.
Owner No.

| County | Twp. | | Sec. | Town | Range |
|---|---|---|---|---|---|
| Calhoun | Battle Creek | SW SW | 2 | 2 S. | 8 W. |

Non-Responsive [redacted]

| FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| Sand | ? | |
| Clay | 57 | 57 |
| Rock | 13 | 70 |
| D.T. = 57 | | |
| EBR = 811 | | |
| ELEV = 868 | | |

Non-Responsive [redacted]

Driller and Address: Clyde Lucas

Well Depth: 70 ft. Date of Completion 4-4-68

☒ Cable tool ☐ Rotary ☐ Dug ☐ R.C.
☒ Driven ☐ Jetted ☐ Bored

Use: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Dewatering
☐ Test Well ☐ ___

Casing: Diam. 3 in. to 57 ft. Depth
___ in. to ___ ft. Depth

Height: Above/Below surface ___ ft.
Type-Weight

Screen:
Type: none Dia: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Accessories:

Water level: (7?) ft. above/below 861 ?
___ ft. above/below ___
Meas. by Date

Drawdown:
___ ft. after ___ hrs. pumping 10 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.
Meas. by Date

Flow: g.p.m./g.p.h. Temp: °F

Water Quality in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___

Elevation: ft. above

Source of data:

Record by: Date:

Remarks: Drove Casing to Rock - Cable Tooled through rock.

GEOLOGICAL SURVEY SAMPLE No.

2 NOV 27 1979

# WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

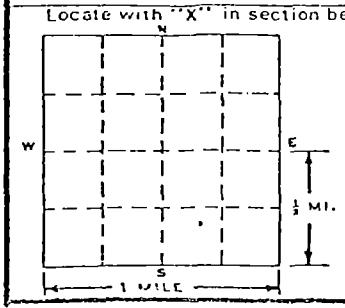
## 1 LOCATION OF WELL

| County | Township Name | Fraction | Section Number | Town Number | Range Number |
|---|---|---|---|---|---|
| Calhoun | Battle Creek | NE ¼ NW ¼ SE ¼ | 2 | 2 N/S. | 8 E/W. |

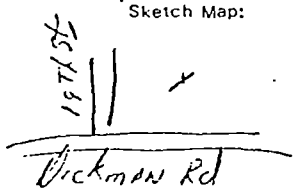
Distance And Direction from Road Intersections
100 yds E of 19th St
100 yds No of Dickman Rd

Street address & City of Well Location Dickman Rd

Locate with "X" in section below




Sketch Map:




3 OWNER OF WELL: 84 Lumber Co.
Address LVI Naperville Ill.

4 WELL DEPTH: (completed) 100 ft. Date of Completion 9-5-79

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☒ Commercial ☐ Test Well ☐

7 CASING: Threaded ☒ Welded ☐
Diam. 4 in. to 65 ft. Depth
___ in. to ___ ft. Depth
Height: Above/Below Surface 1 ft.
Weight 11 lbs./ft.
Drive Shoe? Yes ☒ No ☐

| 2 FORMATION | THICKNESS OF STRATUM | DEPTH TO BOTTOM OF STRATUM |
|---|---|---|
| Clay + Gravel | 16' | 16' |
| Gravel | 7' | 23' |
| Clay with Gravel streaks | 19' | 42' |
| Clay | 12' | 54' |
| Broken Rock + Clay | 11' | 65' |
| water Bearing Rock | 35' | 100' |

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: None Dia.:
Slot/Gauze Length
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
27 ft. below land surface

10 PUMPING LEVEL below land surface
27 ft. after 1 hrs. pumping 30 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
NOT AVAILABLE
Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☒ Yes ☐ No
☐ Neat Cement ☒ Bentonite ☐
Depth: From 0 ft. to 65 ft.

14 Nearest Source of possible contamination
___ feet ___ Direction Not Installed Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name McDonald
Model Number 5 RA 8 HP ½ Volts 230
Length of Drop Pipe 42 ft. capacity 12 G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

ADDED INFO BY DRILLER, ITEM NO.
*CORRECTED BY
**ADDITION BY
ELEVATION
DEPTH TO ROCK

dle

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Katz Well Drilling Inc 0393
REGISTERED BUSINESS NAME REGISTRATION NO.
Address 130 So Main St Cerasco
Signed Rick Fry Date 9-5-79
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

[redacted]

CHLORINATION

0 not practiced
1 gas chlorination
2 sodium or calcium hypochlorite
3 chlorine dioxide
4 combined chlorination
5 purchase chlorinated water
6 rechlorinate purchased water
9 combination

FLUORIDE

0 not practiced
1 sodium fluoride
2 sodium silicofluoride
3 hydrofluosilicic acid
4 naturally fluoridated
5 other
6 purchase fluoridated water
9 combination

COAGULATION

0 not practiced
1 dry alum
2 liquid alum
3 iron coagulant
4 polyelectrolyte
5 other
9 combination

FILTRATION

0 not practiced
1 gravity rapid sand filters
2 pressure sand filters
3 diatomaceous earth filters
4 other
9 combination

IRON CONTROL

0 not practiced
1 aeration-filtration
2 potassium permanganate-filtration
3 phosphate
4 other
9 combination

TASTE AND ODOR CONTROL

0 not practiced
1 powdered activated carbon
2 granular activated carbon
3 ozonation
4 chlorine dioxide
5 potassium permanganate
6 aeration
7 other
9 combination

STABILIZATION

0 not practiced
1 pH adjustment
2 phosphate
3 other
9 combination

SOFTENING

0 not practiced
1 lime
2 lime-soda ash
3 lime-caustic soda
4 zeolite
9 combination

OTHER TREATMENT

0 none
1 other treatment practiced

STAND-BY POWER CODE LIST

0 none
1 stationary generator
2 portable generator
3 right angle drive with stationary auxiliary engine
4 right angle drive with portable auxiliary engine
5 alternate electric power source
6 direct drive with stationary auxiliary engine
9 combination

OWNERSHIP CODE

A Authority
C County
D District
F Federal
M Municipal
P Private
S State
T Township
V Village

SOURCE CODE

B Purchased ground water
C Combined surface and ground water
G Great Lakes and connecting waters
L Inland lakes
P Purchased surface water
R River
S Spring
W Wells

| DIST | | | SERVED | TYPE | | | RCE | FROM | TO | F | D | S | R | R | G | T | T | N | E | L | R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 06 | 03410 | IRON RIVER | 2,426 | M | 1 | IRON | W | | | | | 3 | | | | | | | | | | |
| 4 06 | 03880 | LIND - CRYSTAL FALLS TOWNSHIP | 1,005 | T | 1 | IRON | W | | | | | 3 | 1 | | | | | | | | | (906)265-9414 |
| 4 06 | 04415 | MINERAL HILLS | 257 | V | 1 | IRON | W | 05760 | | | | 4 | | | | | | | | | | (906)875-3062 |
| 4 06 | 04610 | NASH - IRON RIVER TOWNSHIP | 350 | T | 1 | IRON | W | | | | | 3 | | | | | | | | | | (906)265-4511 |
| 4 06 | 05760 | RYDEN ROAD - IR RIVER TWP | 300 | T | 1 | IRON | W | | YES | | | 3 | | | | | | | | | | (906)265-9635 |
| 4 06 | 06330 | STAMBAUGH | 1,442 | M | 1 | IRON | W | | | | 3 | 3 | | 2 | | | | | | | | (906)265-9635 |
| 4 06 | 06503 | SWAN LAKE - CRYS FALLS TWP | 75 | T | 1 | IRON | W | | | | 4 | 4 | 2 | | | | | | | | | (906)265-4213 |
| 4 06 | 06630 | TOWNLINE - CRYS FALLS TWP | 360 | T | 1 | IRON | W | | YES | | | 3 | | | | | | | | | | (906)875-3062 |
| 4 06 | 06940 | WEST BRULE-STAMBO TWP #1 | 500 | T | 1 | IRON | W | | | | | 4 | | | | | | | | | | (906)875-3062 |
| | | | | | | | | | | | | | | | | | | | | | | (906)265-2929 |
| *** | NUMBER OF SUPPLIES IN COUNTY | 18 | | | | | | | | | | | | | | | | | | | | |
| 1 13 | 00365 | BAMBACH APARTMENTS | 25 | P | 1 | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 02585 | GORDON GAULD APARTMENTS | 27 | P | 1 | ISABELLA | W | | | | | | | | | | | | | | | (517)772-4379 |
| 1 13 | 03435 | ISABELLA CO WATER DISTRICT #1 | 50 | C | 1 | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 03437 | ISABELLA INDIAN RESERVATION | 200 | F | 1 | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 04530 | MOUNT PLEASANT | 23,746 | M | 1 | ISABELLA | W | | | | 1 | 1 | 1 | 3 | | | | 3 | | | | |
| 1 13 | 04531 | MT PLEASANT REGIONAL CENTER | 560 | P | | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 04214 | PLEASANT VIEW APARTMENTS | 320 | P | | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 05823 | ROSEBUSH ESTATES | 50 | P | 1 | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 06030 | SHEPHERD | 1,410 | | | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 13 | 06035 | SHEPHERD APARTMENTS | 25 | | | ISABELLA | W | | | | | | | | | | | | | | | |
| *** | NUMBER OF SUPPLIES IN COUNTY | 10 | | | | | | | | | | | | | | | | | | | | |
| 2 05 | 05205 | AMBERTON VILLAGE SUBD | 330 | T | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)627-5788 |
| 2 05 | 00237 | ARBOR VIEW ESTATES | 248 | P | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)750-1900 |
| 2 05 | 00740 | BLACKMAN TOWNSHIP | 2,000 | T | 1 | JACKSON | B | 03470 | | | | | 5 | 6 | | | | | | | | (517)787-6140 |
| 2 05 | 00920 | BROOKLYN | 1,110 | V | 1 | JACKSON | W | | | | 3 | 3 | 2 | 3 | | | | 3 | | | | (517)592-2591 |
| 2 05 | 01075 | CAMP WATERLOO | 200 | S | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (313)475-1358 |
| 2 05 | 01580 | CONCORD | 1,053 | V | 1 | JACKSON | W | | | | | 3 | | | | | | | | | | (517)524-8534 |
| 2 05 | 02830 | GRASS LAKE | 962 | V | 1 | JACKSON | W | | | | 4 | 4 | 2 | | | | | 3 | | | | (517)522-4530 |
| 2 05 | 03470 | JACKSON | 39,739 | M | 1 | JACKSON | W | | YES | 1 | | 1 | 1 | 3 | 3 | 1 | 3 | | | 2 | | (517)788-4092 |
| 2 05 | 03473 | JACKSON REGIONAL PRISON | 500 | S | 1 | JACKSON | W | | | | 4 | 4 | | | | | | | | | | |
| 2 05 | 03637 | LEONI TOWNSHIP | 50 | T | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)764-4694 |
| 2 05 | 03210 | RANCH HOME ESTATES SUBD | 1,380 | T | 1 | JACKSON | W | | | | | 3 | | | | | | | | | | (517)764-4694 |
| 2 05 | 06225 | SPRING ARBOR COLLEGE | 808 | P | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)750-1200 |
| 2 05 | 06227 | SPRING ARBOR TOWNSHIP | 850 | T | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)750-2800 |
| 2 05 | 06250 | SPRINGPORT | 675 | V | 1 | JACKSON | W | | | | 4 | 4 | 2 | | | 1 | | 1 | | | | (517)857-2510 |
| 2 05 | 06370 | STATE PRISON OF SOUTHERN MICH. | 6,300 | S | 1 | JACKSON | W | | | | 2 | 2 | 1 | | | | | | | | | (517)788-7560 |
| 2 05 | 06450 | SUMMIT TOWNSHIP | 16,900 | T | 1 | JACKSON | W | | | | 2 | 2 | 2 | 3 | | | | 3 | | | | (517)787-8570 |
| *** | NUMBER OF SUPPLIES IN COUNTY | 16 | | | | | | | | | | | | | | | | | | | | |
| 2 12 | 00005 | AARON HILLS APARTMENTS | 100 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | | | |
| 2 12 | 00015 | ADAM EAST APARTMENTS | 35 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | | | |

| REGION DIST | WSSN | WATER SUPPLY NAME | POP. SERVED | OWNER TYPE | | COUNTY | SOURCE | PUR-SELL WATER FROM | PUR-SELL WATER TO | CLASS F | CLASS D | CLASS S | TREATMENT CHLORIDE | TREATMENT FLUORIDE | TREATMENT COAGULATE | TREATMENT FILTER | TREATMENT SOFTENING | TREATMENT TASTE | TREATMENT ODOR | (AREA)-PHONE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 12 | 00320 | AUGUSTA | 413 | V | 1 | KALAMAZOO | W | | | | 4 | 4 | 2 | | | | 3 | | | |
| 2 12 | 01465 | CLIMAX | 350 | V | 1 | KALAMAZOO | W | | | | 4 | 4 | 2 | | | | | | | |
| 2 12 | 01575 | COMSTOCK TOWNSHIP | 861 | T | 1 | KALAMAZOO | B | 03520 | | | | | 5 | 6 | | | | | | |
| 2 12 | 01602 | COOPER CENTER | 40 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | |
| 2 12 | 01605 | COOPER TOWNSHIP | 436 | T | 1 | KALAMAZOO | B | 03520 | | | | | 5 | 6 | | | | | | |
| 2 12 | 03668 | COUNTRY RIDGE APARTMENTS | 60 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | |
| 2 12 | 01793 | DENZ APARTMENTS | 80 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | |
| 2 12 | 02530 | GALESBURG | 1,822 | M | 1 | KALAMAZOO | W | | | | 3 | 3 | 1 | 3 | | | | | | |
| 2 12 | 03520 | KALAMAZOO | 79,722 | M | 1 | KALAMAZOO | W | | YES | | 1 | 1 | 1 | 3 | | | 3 | | | |
| 2 12 | 03530 | KALAMAZOO PSYCH'TRIC REG HOSP | 1,400 | S | 1 | KALAMAZOO | W | 03520 | | | | 3 | 5 | 6 | | | | | | |
| 2 12 | 03540 | KALAMAZOO TOWNSHIP | 20,166 | T | 1 | KALAMAZOO | B | 03520 | | | | | 5 | 6 | | | | | | |
| 2 12 | 03598 | KELLOGG BIOLOGICAL STATION | 50 | S | 1 | KALAMAZOO | W | | | | | | | | | | | | | |
| 2 12 | 05032 | ORCHARD LAKE APTS | 100 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | |
| 2 12 | 05045 | OSHTEMO TOWNSHIP | 1,474 | T | 1 | KALAMAZOO | B | 03520 | | | | | 5 | 6 | | | | | | |
| 2 12 | 05200 | PARCHMENT | 1,817 | M | 1 | KALAMAZOO | W | | YES | | 2 | 3 | 1 | 3 | | | 1 | | | |
| 2 12 | 05520 | PORTAGE | 30,000 | M | 1 | KALAMAZOO | W | | | | 1 | 1 | 1 | 3 | | | 3 | | | |
| 2 12 | 05666 | RICHLAND COUNTRY APARTMENTS | 100 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | |
| 2 12 | 05667 | RICHLAND TOWNSHIP | 50 | T | 1 | KALAMAZOO | B | 03520 | | | | | 5 | 6 | | | | | | |
| 2 12 | 05970 | SCHOOLCRAFT | 1,359 | V | 1 | KALAMAZOO | W | | | | 3 | 3 | 1 | 3 | | | 3 | | | |
| 2 12 | 06565 | TEXAS TOWNSHIP | 1,000 | T | 1 | KALAMAZOO | B | 03520 | | | | | 5 | 6 | | | | | | |
| 2 12 | 06800 | VICKSBURG | 2,224 | V | 1 | KALAMAZOO | W | | | | 3 | 3 | | 3 | | | | | | |
| *** NUMBER OF SUPPLIES IN COUNTY 23 | | | | | | | | | | | | | | | | | | | | |
| 1 13 | 03560 | KALKASKA | 1,300 | M | 1 | KALKASKA | W | | | | | | | | | | | | | |
| *** NUMBER OF SUPPLIES IN COUNTY 1 | | | | | | | | | | | | | | | | | | | | |
| 2 09 | 00012 | ADA TOWNSHIP | 3,000 | T | 1 | KENT | P | 02790 | | | | 3 | 5 | 6 | | | | | | (616)676-9191 |
| 2 09 | 00190 | ALPINE TOWNSHIP | 2,649 | T | 1 | KENT | B | 05370 | | | | | 5 | 6 | | | | | | (616)363-0961 |
| 2 09 | 00235 | APPLE VALLEY | 600 | P | 1 | KENT | W | | | | 4 | 4 | 2 | | | | | | | (616)361-0566 |
| 2 09 | 01022 | BYRON MEADOWS CONDOMINIUMS | 150 | P | 1 | KENT | W | | | | | 4 | | | | | | | | (616)878-1758 |
| 2 09 | 01023 | BYRON TOWNSHIP | 1,403 | T | 1 | KENT | P | 07220 | | | | 3 | 5 | 6 | | | | | | (616)878-1222 |
| 2 09 | 01080 | CANNON TOWNSHIP | 10 | T | 1 | KENT | W | | | | | 4 | | | | | | | | (616)874-6966 |
| 2 09 | 01115 | CARAVELLE VILLAGE | 400 | P | 1 | KENT | W | | | | | 4 | | | | | | | | (616)949-4810 |
| 2 09 | 01185 | CASCADE TOWNSHIP | 1,000 | T | 1 | KENT | P | 02790 | | | | | 5 | 6 | | | | | | (616)949-1500 |
| 2 09 | 01187 | CASCADE VILLAGE APARTMENTS | 70 | P | 1 | KENT | W | | | | | | | | | | | | | (517)351-1310 |
| 2 09 | 01260 | CEDAR SPRINGS | 2,000 | M | 1 | KENT | W | | | | 3 | 3 | 1 | 3 | | | 3 | | | (616)696-1330 |
| 2 09 | 01693 | CUMBERLAND MANOR | 100 | P | 1 | KENT | W | | | | | | | | | | | | | (616)847-0413 |
| 2 09 | 01960 | EAST GRAND RAPIDS | 12,565 | M | 1 | KENT | P | 02790 | | | | 2 | | | | | | | | (616)949-2110 |
| 2 09 | 02015 | EASTGATE WOODS | 1,000 | P | 1 | KENT | W | | | | | 3 | | | | | | | | (616)676-9101 |
| 2 09 | 02527 | GAINES TOWNSHIP | 2,000 | T | 1 | KENT | P | 07220 | | | | | 5 | 6 | | | | | | (616)698-6640 |

PROGRAM NO. P22360
MICHIGAN DEPT. OF PUBLIC HEALTH
WATER SUPPLY SERVICES DIVISION

COMMUNITY PUBLIC WATER SUPPLIES
SUMMARY REPORT

PRODUCTION DATE 10/31/85


| REGION DIST | WSSN | WATER SUPPLY NAME | POP. SERVED | OWNER TYPE | | COUNTY | SOURCE | PUR-SELL WATER FROM | TO | CLASS F | D | S | TREATMENT CHLOR | FLUOR | COAGL | FILT | SOFT | IRON | TASTE | SALT | OTHER | (AREA)-PHONE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X 2 12 | 00005 | AARRON HILLS APARTMENTS | 100 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | | | |
| 2 09 | 00012 | ADA TOWNSHIP | 3,000 | T | 1 | KENT | P | 02790 | | | | 3 | 5 | 6 | | | | | | | | (616)676-9191 |
| X 2 12 | 00015 | ADAM EAST APARTMENTS | 35 | P | 1 | KALAMAZOO | W | | | | | | | | | | | | | | | |
| 4 06 | 00020 | ADAMS TWP SO RANGE WATER AUTH. | 2 | A | 1 | HOUGHTON | W | | YES | | 2 | | 1 | | | | | | | | | (906)482-7402 |
| 2 05 | 00030 | ADDISON | 655 | V | 1 | LENAWEE | W | | | | 4 | 4 | 2 | | | | | 1 | | | | (517)547-6776 |
| 2 05 | 00040 | ADRIAN | 21,186 | M | 1 | LENAWEE | C | | | 1 | | 1 | 1 | 3 | 1 | 1 | 2 | | 9 | 2 | | (517)263-2161 |
| 4 06 | 00050 | AHMEEK | 211 | V | 1 | KEWEENAW | B | 04800 | | | | 4 | | | | | | | | | | (906)337-3013 |
| 4 06 | 00060 | AHMEEK LOCATION | 350 | T | 1 | KEWEENAW | B | 04800 | | | | 2 | | | | | | | | | | (906)337-3502 |
| 1 13 | 00070 | AKRON | 538 | V | 1 | TUSCOLA | W | | | | | 4 | | 4 | | | | | | | | (517)691-5540 |
| 1 10 | 00080 | ALABASTER | 40 | P | 1 | IOSCO | G | | | | | | | | | | | | | | | |
| 2 05 | 00100 | ALBION | 11,059 | M | 1 | CALHOUN | W | | | | 2 | 2 | | 3 | | | | | | | | (517)629-3627 |
| 1 02 | 00110 | ALGONAC | 4,412 | M | 1 | ST. CLAIR | G | | YES | 2 | | 2 | 1 | 2 | 1 | 1 | | | | | | (313)794-3281 |
| 2 09 | 00120 | ALLEGAN | 4,494 | M | 1 | ALLEGAN | W | | | 1 | | 2 | 1 | 3 | 2 | 1 | 2 | | | 1 | | (616)673-5511 |
| 3 11 | 00130 | ALLEN PARK | 34,196 | M | 1 | WAYNE | P | 01800 | | | | 1 | 5 | 6 | | | | | | | | (313)928-0550 |
| 2 09 | 00127 | ALLENDALE TOWNSHIP | 2,000 | T | 1 | OTTAWA | P | 02790 | | | | 3 | 5 | 6 | | | | | | | | (616)895-5142 |
| 2 04 | 00140 | ALMA | 9,700 | M | 1 | GRATIOT | C | | | 2 | | 2 | 9 | 3 | 5 | 1 | 2 | | 5 | 1 | | (517)463-8349 |
| 1 02 | 00150 | ALMONT | 1,864 | V | 1 | LAPEER | P | 01800 | | | | 3 | 5 | 6 | | | | | | | | (313)798-8528 |
| 1 13 | 00160 | ALPENA | 12,214 | M | 1 | ALPENA | G | | YES | 1 | | 2 | 1 | 1 | 1 | 1 | | | 5 | 2 | | (517)356-0297 |
| 1 13 | 00170 | ALPENA TOWNSHIP | 4,200 | T | 1 | ALPENA | P | 00160 | | | | 2 | 5 | 6 | | | | | | | | (517)356-2851 |
| 4 06 | 00180 | ALPHA | 249 | V | 1 | IRON | W | | | | 4 | 4 | | | | 2 | | 1 | | | | (906)875-3465 |
| 2 09 | 00190 | ALPINE TOWNSHIP | 2,649 | T | 1 | KENT | B | 05370 | | | | | 5 | 6 | | | | | | | | (616)363-0961 |
| 4 06 | 00200 | AMASA | 402 | T | 1 | IRON | W | | | | | 4 | | | | | | | | | | (906)822-7861 |
| 2 05 | 05205 | AMBERTON VILLAGE SUBD | 330 | T | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)629-5788 |
| 2 09 | 00205 | AMWAY CORPORATION | 4,000 | P | 2 | KENT | L | | | 2 | | 2 | 1 | | 2 | 1 | | | 2 | 2 | 1 | (616)676-6016 |
| X 2 12 | 00210 | ANDREWS UNIVERSITY | 3,000 | P | 1 | BERRIEN | W | | | | | 3 | | | | | | | | | | |
| 3 11 | 00220 | ANN ARBOR | 107,966 | M | 1 | WASHTENAW | C | | | 1 | | 1 | 4 | 2 | | 1 | 1 | | 9 | 2 | | (313)994-2839 |
| 1 08 | 00225 | ANTRIM COUNTY WATER SYSTEM | 200 | T | 1 | ANTRIM | B | 04010 | | | | 4 | | | | | | | | | | (616)587-8651 |
| 4 06 | 00230 | ANVIL LOCATION | 200 | T | 1 | GOGEBIC | B | 06830 | | | | 3 | | | | | | | | | | (906)667-0423 |
| 2 09 | 00235 | APPLE VALLEY | 600 | P | 1 | KENT | W | | | | 4 | 4 | 2 | | | | | | | | | (616)361-0566 |
| 2 05 | 00237 | ARBOR VIEW ESTATES | 248 | P | 1 | JACKSON | W | | | | | 4 | | | | | | | | | | (517)750-1900 |
| 3 11 | 00240 | ARMADA | 1,392 | V | 1 | MACOMB | W | | | | 3 | 3 | 2 | | | | | | | | | (313)784-9091 |
| 3 11 | 00245 | ASH TOWNSHIP | 2,000 | T | 1 | MONROE | P | 01800 | | | | 3 | 5 | 6 | | | | | | | | (313)654-6992 |
| 2 04 | 00250 | ASHLEY | 521 | V | 1 | GRATIOT | W | | | | 4 | 4 | 2 | | | | 4 | | | | | (517)847-2881 |
| 2 05 | 00260 | ATHENS | 960 | V | 1 | CALHOUN | W | | | | | 4 | | | | | | | | | | (616)729-5515 |
| 4 06 | 00270 | ATLANTIC MINE | 150 | T | 1 | HOUGHTON | B | 00020 | | | | 3 | | | | | | | | | | (906)482-7402 |

| REGION DIST | WSSN | WATER SUPPLY NAME | POP. SERVED | OWNER TYPE | | COUNTY | SOURCE | PUR-SELL WATER FROM | PUR-SELL WATER TO | CLASS F | CLASS D | CLASS S | TREATMENT CHLORIN | TREATMENT FLUORID | TREATMENT COAGUL | TREATMENT FILTER | TREATMENT SOFTEN | TREATMENT IRON | TREATMENT TASTE | TREATMENT SALT | TREATMENT OTHER | (AREA)-PHONE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 13 | 00340 | BAD AXE | 3,199 | M | 1 | HURON | W | | | | | 3 | 4 | | | | | | | | | |
| 3 11 | 00345 | BADEN HAUS APARTMENTS | 32 | P | 1 | MACOMB | W | | | | | 4 | | | | | | | | | | |
| 2 04 | 00350 | BALDWIN | 612 | M | 1 | LAKE | W | | | | | 4 | | | | | | | | | | (616)745-4666 |
| 1 10 | 00355 | BALDWIN TOWNSHIP | 100 | T | 1 | IOSCO | P | 02010 | | | | 4 | 5 | 6 | | | | | | | | |
| 4 06 | 00360 | BALTIC | 150 | T | 1 | HOUGHTON | B | 00020 | | | | 3 | | | | | | | | | | (906)482-7402 |
| 1 13 | 00365 | BAMBACH APARTMENTS | 25 | P | 1 | ISABELLA | W | | | | | | | | | | | | | | | |
| 1 08 | 00370 | BANCROFT | 618 | V | 1 | SHIAWASSEE | W | | | | | 4 | | | | | | | | | | |
| X2 12 | 00380 | BANGOR | 2,001 | M | 1 | VAN BUREN | W | | | | 3 | 3 | | 3 | | | | | | | | |
| 1 10 | 00400 | BANGOR MONITOR METRO DISTRICT | 4,200 | D | 1 | BAY | P | 00470 | | | | 2 | 5 | 6 | | | | | | | | |
| 1 10 | 00390 | BANGOR TOWNSHIP | 14,000 | T | 1 | BAY | P | 00470 | | | | 2 | 5 | 6 | | | | | | | | |
| 4 06 | 00410 | BARAGA | 1,055 | V | 1 | BARAGA | G | | | 3 | | 3 | 1 | 3 | 1 | 1 | | | | 1 | | (906)353-6795 |
| X2 12 | 00420 | BARODA | 627 | V | 1 | BERRIEN | P | 03741 | | | | 4 | 5 | | | | | | | | | |
| 3 11 | 00430 | BARTON HILLS | 357 | V | 1 | WASHTENAW | W | | | | 4 | 4 | 2 | | | | | | | 2 | | (313)668-6974 |
| 4 06 | 00440 | BATES TOWNSHIP | 1,100 | T | 1 | IRON | W | | | | | 4 | | | | | | | | | | (906)265-3884 |
| 2 05 | 00450 | BATTLE CREEK - VERONA SYSTEM | 35,724 | M | 1 | CALHOUN | W | | YES | | 1 | 1 | 1 | 3 | | | | 3 | | | | (616)966-3493 |
| 2 05 | 00460 | BATTLE CREEK - LAKEVIEW SYSTEM | 17,000 | M | 1 | CALHOUN | W | | YES | | 2 | 2 | 2 | | | | | 3 | | | | (616)966-3493 |
| 3 03 | 06077 | BAVARIAN BLUE WATER VILLAGE | 270 | C | 1 | OAKLAND | W | | | | | 4 | | | | | | | | | | |
| 1 10 | 00470 | BAY CITY | 41,593 | M | 1 | BAY | G | | YES | 1 | | 1 | 1 | 3 | 3 | 1 | 2 | | 9 | 9 | | |
| 1 10 | 00480 | BAY CITY COUNTRY CLUB | 100 | C | 1 | BAY | P | 05850 | | | | 4 | 5 | 6 | | | | | | | | |
| 1 10 | 00485 | BAY CO. DEPT OF WATER & SEWER | 5,745 | C | 1 | BAY | P | 00470 | YES | | | | | | | | | | | | | |
| 1 08 | 00490 | BAY VIEW ASSOCIATION | 1,630 | P | 1 | EMMET | B | 05300 | | | | 3 | | | | | | | | | | (616)347-1240 |
| 4 07 | 00500 | BEACON | 30 | P | 1 | MARQUETTE | W | | | | | | | | | | | | | | | |
| 1 08 | 00510 | BEAR LAKE | 388 | V | 1 | MANISTEE | W | | | | | 4 | | | | | | | | | | (616)864-3156 |
| 1 10 | 00517 | BEAVER ROAD AREA WATER ASSN | 730 | D | 1 | BAY | P | 05880 | | | | 4 | 5 | | | 3 | | | | | | |
| 1 13 | 00520 | BEAVERTON | 1,000 | M | 1 | GLADWIN | W | | | | 3 | 3 | 2 | | | | | | | | | (517)435-7073 |
| 3 11 | 00530 | BEDFORD TOWNSHIP | 650 | T | 1 | MONROE | P | 04455 | | | 3 | 3 | 6 | 6 | | | | | | | | |
| X2 09 | 00535 | BEECH LANE APARTMENTS | 50 | P | 1 | ALLEGAN | W | | | | | | | | | | | | | | | (616)381-0350 |
| 1 02 | 00540 | BEECHER METROPOLITAN DISTRICT | 18,528 | D | 1 | GENESEE | W | | | | 2 | 2 | 2 | | | | | 3 | | | | (313)787-6526 |
| 4 06 | 00550 | BEECHWOOD - IRON RIVER TWP. | 450 | T | 1 | IRON | W | | | | | 4 | | | | | | | | | | |
| X2 12 | 00555 | BEECHWOOD HILLS APARTMENTS | 75 | P | 1 | BERRIEN | W | | | | | | | | | | | | | | | |
| 2 04 | 00560 | BELDING | 5,300 | M | 1 | IONIA | W | | | | 2 | 2 | 2 | 3 | | | | | | | | (616)794-1340 |
| 1 08 | 00570 | BELLAIRE | 1,063 | M | 1 | ANTRIM | W | | | | | 3 | | | | | | | | | | (616)533-6414 |
| 3 11 | 00580 | BELLEVILLE | 2,600 | M | 1 | WAYNE | P | 01800 | | | | 3 | 5 | 6 | | | | | | | | (313)697-9323 |
| 2 09 | 00590 | BELLEVUE | 1,289 | V | 1 | EATON | W | | | | | 3 | | | | | | | | | | (616)763-9571 |
| X2 12 | 00600 | BENTON HARBOR | 14,612 | M | 1 | BERRIEN | G | | YES | 1 | | 1 | 1 | 2 | 1 | 1 | | | | | | |
| X2 12 | 00605 | BENTON TOWNSHIP | 2,084 | T | 1 | BERRIEN | P | 00600 | | | | | 5 | 6 | | | | | | | | |
| 1 08 | 00610 | BENZONIA | 466 | V | 1 | BENZIE | W | | | | | 4 | | | | | | | | | | (616)882-9981 |
| 4 06 | 00620 | BERGLAND | 420 | T | 1 | ONTONAGON | W | | | | | 4 | | | | | | | | | | (906)575-3446 |
| 3 03 | 00630 | BERKLEY | 16,600 | M | 1 | OAKLAND | P | 06150 | | | | 2 | 5 | 6 | | | | | | | | |
| 3 11 | 00635 | BERLIN TOWNSHIP | 1,000 | T | 1 | MONROE | P | 01800 | | | | 3 | 5 | 6 | | | | | | | | (313)586-2187 |
| X2 12 | 00650 | BERRIEN SPRINGS | 2,042 | V | 1 | BERRIEN | W | | YES | | | 2 | | | | | | | | | | |

| REGION DIST | WSSN | WATER SUPPLY NAME | POP. SERVED | OWNER TYPE | COUNTY | SOURCE | PUR-SELL WATER FROM | PUR-SELL WATER TO | CLASS F | CLASS D | CLASS S | HOLOKAI | LOOKOUT | CPALFOR | SIATNEL | ATSAT | TAMBER | (AREA)-PHONE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 12 | 05847 | PLEASANT VIEW VILLAGE APTS | 160 | P 1 | BERRIEN | W | | | | | | | | | | | | |
| 2 12 | 05549 | POTTAWATAMI PROPERTIES | 30 | P 1 | BERRIEN | W | | | | | | | | | | | | |
| 2 12 | 04095 | RIVERVIEW TERRACE APARTMENTS | 80 | P 1 | BERRIEN | W | | | | | | | | | | | | |
| 2 12 | 06050 | SHOREHAM | 742 | V 1 | BERRIEN | P | 06310 | | | | | 5 | 6 | | | | | |
| 2 12 | 06310 | ST JOSEPH | 9,622 | M 1 | BERRIEN | G | | YES | 1 | | 1 | 1 | 3 | 2 | 1 | | 1 | |
| 2 12 | 06315 | ST JOSEPH TOWNSHIP | 10,973 | T 1 | BERRIEN | P | 06310 | | | | | 5 | 6 | | | | | |
| 2 12 | 06400 | STEVENSVILLE | 1,268 | M 1 | BERRIEN | P | 06310 | | | | | 5 | 6 | | | | | |
| 2 12 | 06600 | THREE OAKS | 1,774 | V 1 | BERRIEN | W | | | | | 3 | | | | | | | |
| 2 12 | 06627 | TIMBER RIDGE APARTMENTS | 80 | P 1 | BERRIEN | W | | | | | | | | | | | | |
| 2 12 | 06930 | WATERVLIET | 1,867 | M 1 | BERRIEN | W | | | | | 3 | | | | | | | |
| 2 12 | 07067 | WHITE OAKS CONDOMINIUMS | 100 | P 1 | BERRIEN | W | | | | | | | | | | | | |
| *** NUMBER OF SUPPLIES IN COUNTY 40 | | | | | | | | | | | | | | | | | | |
| 2 05 | 00410 | BRONSON | 2,271 | M 1 | BRANCH | W | | | | 3 | 3 | | 3 | | | | | (517)369-5745 |
| 2 05 | 00895 | BROOKS SUBDIVISION | 60 | P 1 | BRANCH | W | | | | | 4 | | | | | | | (517)637-3615 |
| 2 05 | 01500 | COLDWATER | 9,461 | M 1 | BRANCH | W | | | | 2 | 2 | 1 | | | 3 | | | (517)279-9531 |
| 2 05 | 01510 | COLDWATER REGIONAL CENTER | 1,054 | S 1 | BRANCH | W | | | | 3 | 3 | 2 | 3 | | | | | (517)279-9551 |
| 2 05 | 03742 | LAKESIDE ESTATES SUB. | 108 | C 1 | BRANCH | W | | | | | 4 | | | | | | | (517)279-8411 |
| 2 05 | 05580 | QUINCY | 1,569 | V 1 | BRANCH | W | | | | 3 | 3 | 2 | | | 3 | | | (517)639-9065 |
| 2 05 | 06720 | UNION CITY | 1,750 | V 1 | BRANCH | W | | | | | 3 | | | | | | | (517)741-8591 |
| *** NUMBER OF SUPPLIES IN COUNTY 7 | | | | | | | | | | | | | | | | | | |
| 2 05 | 00100 | ALBION | 11,059 | M 1 | CALHOUN | W | | | | 2 | 2 | | 3 | | | | | (517)629-3627 |
| 2 05 | 00260 | ATHENS | 960 | V 1 | CALHOUN | W | | | | | 4 | | | | | | | (616)729-5515 |
| 2 05 | 00450 | BATTLE CREEK - VERONA SYSTEM | 35,724 | M 1 | CALHOUN | W | | YES | | 1 | 1 | 1 | 3 | | 3 | | | (616)966-3493 |
| 2 05 | 00460 | BATTLE CREEK - LAKEVIEW SYSTEM | 17,000 | M 1 | CALHOUN | W | | YES | | 2 | 2 | 2 | | | 3 | | | (616)966-3493 |
| 2 05 | 05232 | CONVIS III / VERONA AREA | 1,000 | T 1 | CALHOUN | G | 00450 | | | | 3 | 5 | 6 | | | | | (616)968-8549 |
| 2 05 | 02125 | EMMETT TOWNSHIP | 500 | T 1 | CALHOUN | G | 00450 | | | | | 5 | 6 | | | | | (616)968-0241 |
| 2 05 | 03220 | HOMER | 1,771 | V 1 | CALHOUN | W | | | | 3 | 3 | 1 | | | | | | (517)568-4314 |
| 2 05 | 04150 | MARSHALL | 7,201 | M 1 | CALHOUN | W | | | | 2 | 2 | 1 | 3 | | 2 | | 2 | (616)781-3281 |
| 2 05 | 04500 | MORGAN WOODS - ORCHARD PARK | 1,360 | T 1 | CALHOUN | W | | | | | 3 | | | | | | | (616)965-8990 |
| 2 05 | 04760 | NORTH ACRES SUBDIVISION | 1,000 | T 1 | CALHOUN | W | | | | | 3 | | | | | | | (616)968-8549 |
| 2 05 | 06240 | SPRINGFIELD | 5,996 | M 1 | CALHOUN | G | 00460 | | | | 2 | 5 | | | | | | (616)965-2354 |
| 2 05 | 06365 | STARK COMMONWEALTH SCHOOLS | 330 | P 1 | CALHOUN | W | | | | | 4 | | | | | | | (616)781-6166 |
| *** NUMBER OF SUPPLIES IN COUNTY 12 | | | | | | | | | | | | | | | | | | |
| 2 12 | 01250 | CASSOPOLIS | 1,933 | V 1 | CASS | W | | | | | 3 | | | | | | | |
| 2 12 | 01552 | COLONY BAY CONDOMINIUMS | 100 | P 1 | CASS | W | | | | | | | | | | | | |
| 2 12 | 01860 | DOWAGIAC | 6,400 | M 1 | CASS | W | | | | 2 | 2 | 1 | 3 | | 1 | | | |
| 2 12 | 01925 | EAGLE LAKE EAST APARTMENTS | 48 | P 1 | CASS | W | | | | | | | | | | | | |
| 2 12 | 02077 | EDWARDSBURG | 1,100 | V 1 | CASS | W | | | | 3 | 3 | 1 | | | | | | |
| 2 12 | 03465 | JA BE CO SUBD (LOVE ESTATES) | 150 | P 1 | CASS | W | | | | | 4 | | | | | | | |
| 2 12 | 04070 | MARCELLUS | 1,134 | V 1 | CASS | W | | | | 3 | 3 | 2 | 3 | | 1 | | | |

MI. State Coordinator

DISCARD

Data on

# PUBLIC WATER SUPPLIES IN MICHIGAN

Engineering Bulletin
No. 4.

MICHIGAN DEPARTMENT OF HEALTH
Lansing 4, Michigan

1960 +

# DATA ON PUBLIC WATER SUPPLIES IN MICHIGAN

This bulletin is a revision and supersedes previous engineering bulletins No. 4 and No. 12. Information on public water supplies in Michigan is in general demand by many groups, including public officials, municipalities, the water works industry, engineers, state agencies and private industries. The data in this bulletin were gathered and compiled by the Division of Engineering of the Michigan Department of Health as part of the administration of Act 219, P.A. of 1949, giving the State Health Commissioner supervisory and visitorial powers over public water supplies in the State of Michigan.

The public water supplies are listed alphabetically, first by county and subsequently by municipality. Most of the population figures given are from the 1960 Federal Census, but some are estimates which more nearly represent the number of persons served. Ownership is classified by the following designations:

| | |
|---|---|
| M—City or Village | D—District |
| T—Township | S—State |
| P—Private | U.S.—Federal |
| C—County | |

Under the heading Treatment, the column labeled "Standard Filtration" implies at least chlorination, chemical coagulation, and rapid sand filtration. "Lime softening" includes filtration.

Under the heading Storage, the columns labeled "Treated water at plant" and "Ground Level on System" imply the necessity for pumping to the distribution system. "Elevated" includes that storage which floats on the system and does not require repumping. "pn" designates hydro-pneumatic storage and "stp" indicates standpipe.

Under the heading Chemical Analysis, the quality subsequent to the treatment indicated is shown in the table. Raw water quality is also shown for most ground water supplies.

All results on chemical analyses are expressed in parts per million (ppm), or according to more recent terminology, in milligrams per liter. Parts per million is the weight of the chemical under consideration per 1,000,000 parts, by weight, of water.

The last column of the table indicates the year the sample was collected. The fact that some analyses are five to ten years old is not considered significant since most well waters change very little in chemical composition from year to year. Similarly, waters of the Great Lakes change little, if any, from year to year.

| LOCATION | POPULATION | OWNERSHIP | SOURCE | TREATMENT | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Std. Filtration | Lime Softening | Zeolite Softening | Iron Removal | Chlorination | Fluoridation |
| **BERRIEN COUNTY (Cont'd)** | | | | | | | | | |
| **St. Joseph** | 11,755 | M | Lake Michigan—1,490′ of 24″ Intake 19′ deep | x | | | | | x |
| **Stevensville** | 697 | M | Wells in drift 46′ to 48′ deep | | | | | | |
| St. Joseph Rd. and Laurence Ave. (2 wells) | | | | | | | | | |
| Laurence Ave. and Berrien St. | | | | | | | | | |
| **Three Oaks** (Three Oaks Water Works Co.) | 1,763 | P | | | | | | | |
| E. Butternut | | | | | | | | | |
| E. Maple | | | | | | | | | |
| S. Elm St. | | | | | | | | | |
| **Watervliet** | 1,818 | M | Wells in drift 126′ to 217′ deep | | | | | | |
| St. Joseph St. at Mill Creek (2 wells) | | | | | | | | | |
| **BRANCH COUNTY** | | | | | | | | | |
| **Bronson** | 2,267 | M | Wells in drift 60′ to 97′ deep | | | | | | |
| Wasington and Railroad Streets | | | | | | | | | |
| Walker and Park Streets | | | | | | | | | |
| Parham Road and NYCRR | | | | | | | | | |
| Parham Road | | | | | | | | | |
| **Coldwater** | 8,880 | M | Wells in drift 125′ to 128′ deep | | | | | x | |
| Water Works Park Well No. 3 | | | | | | | | | |
| Water Works Park Well No. 4 | | | | | | | | | |
| Water Works Park Well No. 5 | | | | | | | | | |
| **Coldwater State Home and Training School** | 1,000 | S | Wells in drift 38′ to 58′ deep | | | | | | x |
| Well No. 1 | | | | | | | | | |
| Well No. 2 | | | | | | | | | |
| Well No. 3 | | | | | | | | | |
| **Quincy** | 1,602 | M | Wells in drift 36′ to 100′ deep | | | | | | |
| Hawley and Jackson Sts., Well No. 1 | | | | | | | | | |
| Hawley and Jackson Sts., Well No. 2 | | | | | | | | | |
| Glenn Avenue and Wood Street | | | | | | | | | |
| **Union City** | 1,669 | M | Wells in drift 98′ to 138′ deep | | | | | | |
| Athletic Field Park Street | | | | | | | | | |
| South and Railroad Streets | | | | | | | | | |
| **CALHOUN COUNTY** | | | | | | | | | |
| **Albion** | 12,749 | M | Wells in rock 175′ to 260′ deep | | | | | | |
| Albion Street | | | | | | | | | |
| Clark Street (2 wells) | | | | | | | | | |
| Albion St.-Michigan Central R.R. (3 wells) | | | | | | | | | |
| **Athens** | 966 | M | Wells in drift 50′ deep | | | | | | |
| Burr Oak St. and Avenue A (2 wells) | | | | | | | | | |
| **Battle Creek** | 44,169 | M | Wells in rock 120′ to 160′ deep | | | | | x | x |
| Verona Pumping Station (27 wells) | | | | | | | | | |
| Goguac Station (3 wells) (stand-by) | | | | | | | | | |
| **Battle Creek Township** | 9,000 | T | Wells in rock 143′ to 165′ deep | | | | | x | |
| Richfield Ave. well field (4 wells) | | | | | | | | | |
| Well No. 2 | | | | | | | | | |
| Well No. 3 | | | | | | | | | |
| American Legion Hospital | 200 | P | Wells in drift 160′ deep | | | | | | |
| N. of Administration Bldg. (2 wells) | | | | | | | | | |
| **Bedford Township** | | | | | | | | | |
| Morgan Woods and Orchard Park Subs. | 1,520 | T | Wells in rock 225′ deep | | | | | | |
| North Ave. and Morgan Road (2 wells) | | | | | | | | | |
| **Fort Custer** | | U.S. | Wells in rock 80′ to 175′ deep, and in drift 145′ deep | | | | | x | |
| River Station (9 wells) | | | | | | | | | |
| Airport Well | | | | | | | | | |
| Hospital Well | | | | | | | | | |
| **Homer** | 1,629 | M | Wells in rock 74′ and drift 45′ deep | | | | | | |
| Leigh St. (2 wells) (stand-by) | | | | | | | | | |
| Platt and Webster Streets | | | | | | | | | |
| **Marshall** | 6,736 | M | Wells in rock 100′ deep | | | | | x | |
| Green St. Pumping Sta. (3 wells) | | | | | | | | | |
| **Pennfield Township** | | | | | | | | | |
| North Acres Subdivision | 600 | T | Wells in rock 179′ to 203′ deep | | | | | | |
| Parkview at Adaline Sts. (3 wells) | | | | | | | | | |
| **Springfield** | 4,605 | M | Water from Battle Creek Township. | | | | | | |
| **CASS COUNTY** | | | | | | | | | |
| **Cassopolis** | 2,027 | M | Wells in drift 85′ to 172′ deep | | | | | | |
| East and Harding Streets | | | | | | | | | |
| York Street | | | | | | | | | |
| **Dowagiac** | 7,208 | M | Wells in drift 80′ to 164′ deep | | | | | | |
| Pennsyl and Chestnut Sts. (3 wells) | | | | | | | | | |

| STORAGE (1000 Gallons) | | | CHEMICAL ANALYSES—PPM | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treated Water at Plant | Ground Level on System | Elevated | Total Solids | Silica ($SiO_2$) | Iron (Fe) | Calcium (Ca) | Magnesium (Mg) | Sodium and Potassium (Na+K) | Chloride (Cl) | Sulphate ($SO_4$) | Bicarbonate ($HCO_3$) | Total Hardness ($CaCO_3$) | Fluoride (F) | DATE |
| 2,880 | ..... | ..... | 170 | 3 | 0 | 38 | 12 | 4.9 | 9 | 28 | 135 | 142 | 1.0 | 12-60 |
| ..... | ..... | 75 | 290 | 12 | 0 | 60 | 22 | 10.3 | 8 | 42 | 220 | 240 | 0 | 5-57 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 36 | | | | | | | | | | | | |
| ..... | ..... | ..... | 452 | 16 | 0.85 | 63 | 54 | 38.8 | 12 | 22 | 510 | 380 | 0.1 | 10-57 |
| ..... | ..... | ..... | 422 | 14 | 1.1 | 48 | 30 | 43.2 | 9 | 15 | 495 | 345 | 0.2 | 10-57 |
| ..... | ..... | ..... | 346 | 13 | 0.75 | 54 | 25 | 54.9 | 42 | 5 | 342 | 237 | 0 | 10-57 |
| ..... | ..... | 50 | | | | | | | | | | | | |
| ..... | ..... | ..... | 286 | 12 | 0.55 | 58 | 25 | 8.3 | 29 | 6 | 271 | 248 | 0 | 1-56 |
| ..... | ..... | 250 | | | | | | | | | | | | |
| ..... | ..... | ..... | 306 | 12 | 1.2 | 73 | 16 | 4.8 | 5 | 28 | 270 | 250 | 0 | 6-59 |
| ..... | ..... | ..... | 306 | 15 | 3.7 | 65 | 24 | 6.2 | 4 | 27 | 294 | 260 | 0 | 6-59 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 300 | | | | | | | | | | | | |
| ..... | ..... | ..... | 344 | 10 | 1.1 | 80 | 23.1 | 7.8 | 5 | 47 | 310 | 295 | 0 | 4-55 |
| ..... | ..... | ..... | 326 | 3 | 1.5 | 76 | 24.4 | 9.1 | 7 | 25 | 334 | 290 | 0 | 4-55 |
| ..... | ..... | ..... | 254 | 10 | 1.5 | 44 | 15.6 | 8 | 5 | 20 | 192 | 175 | 0 | 1-57 |
| ..... | ..... | 200 | | | | | | | | | | | | |
| ..... | ..... | ..... | 374 | 11 | 0 | 78 | 22 | 26.4 | 12 | 40 | 278 | 285 | 1.0 | 5-60 |
| ..... | ..... | ..... | 336 | 10 | 0 | 78 | 22 | 8.7 | 11 | 43 | 266 | 285 | 1.0 | 5-60 |
| ..... | ..... | ..... | 284 | 10 | 0 | 66 | 18 | 6 | 8 | 30 | 240 | 240 | 1.0 | 5-60 |
| ..... | ..... | 60 | | | | | | | | | | | | |
| ..... | ..... | ..... | 482 | 11 | 0.1 | 112 | 29 | 11.6 | 19 | 63 | 365 | 400 | 0 | 6-59 |
| ..... | ..... | ..... | 336 | 17 | 1.4 | 86 | 24 | 8.1 | 9 | 26 | 350 | 315 | 0 | 6-59 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 75 | | | | | | | | | | | | |
| ..... | ..... | ..... | 350 | 12 | 2.0 | 86 | 21 | 3.6 | 2 | 52 | 300 | 300 | 0 | 6-59 |
| ..... | ..... | ..... | 324 | 10 | 1.2 | 81 | 21 | 3.5 | 3 | 47 | 290 | 290 | 0 | 6-59 |
| ..... | ..... | 500 | | | | | | | | | | | | |
| ..... | ..... | ..... | 316 | 14 | 0.5 | 76 | 21 | 7 | 8 | 30 | 294 | 275 | 0 | 6-58 |
| ..... | ..... | ..... | 320 | 14 | 0.5 | 78 | 23 | 5.8 | 5 | 35 | 310 | 290 | 0 | 6-58 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 22.5 pn | | | | | | | | | | | | |
| ..... | ..... | ..... | 280 | 8 | 0 | 80 | 17 | 5 | 7 | 37 | 268 | 272 | 0 | 2-56 |
| 2,000 | ..... | 4,100 | | | | | | | | | | | | |
| ..... | ..... | ..... | 328 | 14 | 0.8 | 76 | 19 | 4.9 | 5 | 52 | 263 | 270 | 1.0 | 6-58 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 400 | | | | | | | | | | | | |
| ..... | ..... | ..... | 352 | 15 | 1.0 | 91 | 21 | 6.8 | 8 | 40 | 326 | 315 | 0 | 11-57 |
| ..... | ..... | ..... | 424 | 13 | 0.5 | 95 | 27 | 10.9 | 17 | 55 | 340 | 350 | 0 | 6-58 |
| ..... | ..... | 75 | | | | | | | | | | | | |
| ..... | ..... | ..... | 316 | 13 | 2 | 70 | 21 | 20.3 | 6 | 17 | 332 | 260 | 0.3 | 1-59 |
| ..... | ..... | 10 pn | | | | | | | | | | | | |
| ..... | ..... | ..... | 214 | 9 | 0.3 | 58 | 15 | 2.8 | 2 | 30 | 218 | 205 | 0 | 1-59 |
| 1,000 | ..... | 700 | | | | | | | | | | | | |
| ..... | ..... | ..... | 286 | 8 | 0.1 | 70 | 21 | 5.7 | 8 | 30 | 280 | 260 | 0 | 1-59 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 50 | | | | | | | | | | | | |
| ..... | ..... | ..... | 380 | 10 | 0.9 | 86 | 26 | 21 | 35 | 35 | 338 | 320 | 0 | 1-59 |
| ..... | ..... | 235 stp | | | | | | | | | | | | |
| ..... | ..... | ..... | 288 | 14 | 0.5 | 70 | 19 | 4.9 | 3 | 27 | 272 | 255 | 0 | 6-58 |
| ..... | ..... | 10 pn | | | | | | | | | | | | |
| ..... | ..... | ..... | 250 | 10 | 0.2 | 66 | 16 | 3.2 | 3 | 28 | 255 | 230 | 0 | 1-59 |
| ..... | ..... | 60 | | | | | | | | | | | | |
| ..... | ..... | ..... | 380 | 13 | 0 | 78 | 33 | 2.9 | 0 | 27 | 344 | 330 | 0 | 6-58 |
| ..... | ..... | 500 | | | | | | | | | | | | |
| ..... | ..... | ..... | 306 | 14 | 0.6 | 64 | 28 | 9.1 | 2 | 30 | 300 | 275 | 0 | 6-58 |

| LOCATION | POPULATION | OWNERSHIP | SOURCE | TREATMENT | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Std. Filtration | Lime Softening | Zeolite Softening | Iron Removal | Chlorination | Fluoridation |
| **IRON COUNTY (Cont'd)** | | | | | | | | | |
| **Stambaugh Township** | 1,092 | T | 2 wells at Indian Lake | | | | | | |
| South Brule District | | T | Well in drift 53′ deep | | | | | | |
| Hill Road and Gravel Pit Road | | | | | | | | | |
| **ISABELLA COUNTY** | | | | | | | | | |
| **Mt. Pleasant** | 14,875 | M | Wells in drift 75′ to 165′ deep | | | | | | |
| Broadway Street and Mill Race | | | | | | | | | x |
| Douglas and Gaylord Streets | | | | | | | | | |
| Brondstetter | | | | | | | | | x |
| O'Conner | | | | | | | | | |
| Leaton and Fessenden | | | | | | | | | |
| **Mt. Pleasant State Home and Trn. Sch.** | 1,500 | S | Water from City of Mt. Pleasant | | | | | | |
| **Shepherd** | 1,293 | M | Well in drift 151′ deep | | | | | | |
| N. Third Street | | | | | | | | | |
| **JACKSON COUNTY** | | | | | | | | | |
| **Blackman Township** | 800 | M | Water from City of Jackson | | | | | | |
| State Prison of Southern Michigan | 6,000 | S | Wells in rock 150′ to 300′ deep | | | | | x | |
| Well No. 4 | | | | | | | | | |
| Well No. 11 | | | | | | | | | |
| **Brooklyn** | 986 | M | Wells in rock 40′ to 131′ deep | | | | | x | |
| River and Tecumseh Streets (2 wells) | | | | | | | | | |
| **Concord** | 990 | M | Wells in rock 100′ to 107′ deep | | | | | | |
| Michigan and Monroe Streets, Well No. 1 | | | | | | | | | |
| Michigan and Monroe Streets, Well No. 2 | | | | | | | | | |
| **Grass Lake** | 1,037 | M | Wells in rock 76′ to 88′ deep | | | | | | |
| Clark Road and Water Street (2 wells) | | | | | | | | | |
| **Jackson** | 50,720 | M | Wells in rock 380′ to 400′ deep | | | | | x | x |
| Belden Road, Well No. 9 | | | | | | | | | |
| Belden Road, Well No. 12 | | | | | | | | | |
| Water Street | | | | | | | | | |
| Hamburg Street | | | | | | | | | |
| N. West Avenue and W. North Street | | | | | | | | | |
| **Leoni Township** | | | | | | | | | |
| Home Estates Subdivision | 100 | T | Wells in rock 348′ deep | | | | | | |
| Viking and Holly Drives (2 wells) | | | | | | | | | |
| **Springport** | 693 | M | Wells in rock 210′ to 233′ deep | | | | x | | |
| Monroe and Main Streets | | | | | | | | | |
| Green Street | | | | | | | | | |
| **Summit Township** | 700 | T | Water from City of Jackson. | | | | | | |
| Roaring Brook Estates Subdivision | 100 | T | Wells in rock 178′ and 348′ deep | | | | | | |
| Meadow Heights Ave. and Crescent St. (2 wells) | | | | | | | | | |
| Well No. 1 | | | | | | | | | |
| Well No. 2 | | | | | | | | | |
| Southview Subdivision | 240 | T | Wells in rock 173′ deep | | | | | | |
| West Southfield Drive (2 wells) | | | | | | | | | |
| **KALAMAZOO COUNTY** | | | | | | | | | |
| **Augusta** | 972 | M | Wells in drift 108′ deep | | | | | x | |
| Michigan Ave. and Jackson St. (2 wells) | | | | | | | | | |
| **Galesburg** | 1,410 | M | Wells in drift 65′ deep | | | | | | |
| Division and Maple Streets (2 wells) | | | | | | | | | |
| **Kalamazoo** | 82,089 | M | Wells in drift 120′ to 220′ deep | | | | | x | x |
| Central Pumping Station, Burdick Street | | | | | | | | | |
| Station No. 7 | | | | | | | | | |
| Kendall Station | | | | | | | | | |
| Balch Street Station | | | | | | | | | |
| Station No. 5 | | | | | | | | | |
| **Kalamazoo Township** | 20,166 | M | Water from City of Kalamazoo. | | | | | | |
| Fair Oaks (Colony Farm) | 500 | S | Wells in drift 186′ deep | | | | | | |
| Kalamazoo State Hospital | 3,800 | S | Wells in drift 25′ to 140′ deep | | | | | x | |
| Well No. 1 | | | | | | | | | |
| Well No. 5 | | | | | | | | | |
| **Parchment** | 1,565 | M | Water from Kalamazoo Vegetable Parchment Company: wells in drift 45′ to 65′ deep | | | | | x | x |
| No. 66 | | | | | | | | | |
| No. 69 | | | | | | | | | |

| STORAGE (1000 Gallons) | | | CHEMICAL ANALYSES—PPM | | | | | | | | | | | DATE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treated Water at Plant | Ground Level on System | Elevated | Total Solids | Silica ($SiO_2$) | Iron (Fe) | Calcium (Ca) | Magnesium (Mg) | Sodium and Potassium (Na+K) | Chloride (Cl) | Sulphate ($SO_4$) | Bicarbonate ($HCO_3$) | Total Hardness ($CaCO_3$) | Fluoride (F) | |
| ..... | ..... | 15 | 274 | 14 | 0.1 | 53 | 30 | 3.3 | 10 | 13 | 290 | 254 | 0 | 8-59 |
| ..... | ..... | 15 | | | | | | | | | | | | |
| ..... | ..... | ..... | 170 | 15 | 0 | 32 | 16 | 3.2 | 0 | 18 | 159 | 144 | 0.1 | 7-59 |
| ..... | ..... | 500 | | | | | | | | | | | | |
| ..... | ..... | ..... | 788 | 13 | 1.2 | 132 | 41 | 60 | 48 | 300 | 314 | 500 | 1.0 | 1-59 |
| ..... | ..... | ..... | 488 | 13 | 2.2 | 97 | 34 | 22.5 | 23 | 88 | 364 | 380 | 0.4 | 1-59 |
| ..... | ..... | ..... | 388 | 13 | 0.9 | 65 | 30 | 29.4 | 3 | 63 | 338 | 288 | 1.0 | 1-59 |
| ..... | ..... | ..... | 402 | 13 | 0.6 | 74 | 34 | 17.3 | 5 | 63 | 349 | 325 | 0.4 | 1-59 |
| ..... | ..... | ..... | 630 | 9 | 1.3 | 120 | 34 | 42.6 | 51 | 183 | 325 | 440 | 0.2 | 8-60 |
| ..... | ..... | 250 | | | | | | | | | | | | |
| ..... | ..... | 35 | | | | | | | | | | | | |
| ..... | ..... | ..... | 302 | 18 | 1.1 | 76 | 22 | 9.7 | 0 | 2 | 362 | 280 | 0.1 | 6-59 |
| 1,500 | ..... | 250 | | | | | | | | | | | | |
| ..... | ..... | ..... | 760 | 14 | 1.7 | 116 | 32 | 92.7 | 90 | 150 | 400 | 420 | 0 | 6-58 |
| ..... | ..... | ..... | 612 | 11 | 0.3 | 70 | 22 | 128.7 | 145 | 43 | 340 | 265 | 0 | 6-58 |
| ..... | ..... | 75 | | | | | | | | | | | | |
| ..... | ..... | ..... | 402 | 14 | 0.9 | 92 | 24 | 9.3 | 8 | 36 | 350 | 330 | 0.2 | 6-58 |
| ..... | ..... | 75 | | | | | | | | | | | | |
| ..... | ..... | ..... | 286 | 15 | 0.5 | 72 | 18 | 4.5 | 3 | 17 | 285 | 255 | 0 | 6-58 |
| ..... | ..... | ..... | 320 | 14 | 0.2 | 74 | 20 | 4.8 | 3 | 20 | 296 | 265 | 0 | 6-58 |
| ..... | ..... | 50 | | | | | | | | | | | | |
| ..... | ..... | ..... | 372 | 13 | 1.0 | 88 | 22 | 6.1 | 8 | 50 | 300 | 310 | 0 | 6-58 |
| 3,000 | ..... | 3,000 | | | | | | | | | | | | |
| ..... | ..... | ..... | 614 | 12 | 0.7 | 90 | 23 | 87.1 | 88 | 98 | 330 | 320 | 1.0 | 6-58 |
| ..... | ..... | ..... | 486 | 14 | 0.5 | 90 | 27 | 46.3 | 44 | 70 | 346 | 335 | 1.0 | 6-58 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | 350 | 14 | 0.3 | 79 | 26 | 22.7 | 13 | 25 | 360 | 302 | 0.2 | 9-60 |
| ..... | ..... | 5.0 pn | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 75 | | Treated: 0 | | | | | | | | | | |
| ..... | ..... | ..... | 506 | 13 | 0.7 | 116 | 34 | 15.1 | 29 | 63 | 425 | 430 | 0 | 9-58 |
| ..... | ..... | ..... | 390 | 10 | 4.0 | 88 | 23 | 8.7 | 17 | 46 | 322 | 315 | 0 | 9-58 |
| ..... | ..... | 5.0 pn | | | | | | | | | | | | |
| ..... | ..... | ..... | 538 | 11 | 0.7 | 68 | 24 | 94.8 | 108 | 30 | 365 | 270 | 0 | 12-60 |
| ..... | ..... | ..... | 576 | 10 | 0.5 | 64 | 22 | 125.9 | 144 | 30 | 355 | 250 | 0 | 12-60 |
| ..... | ..... | 5.0 pn | | | | | | | | | | | | |
| ..... | ..... | ..... | 290 | 11 | 0.8 | 72 | 21 | 4.0 | 2 | 38 | 272 | 265 | 0 | 6-59 |
| ..... | ..... | 50 | | | | | | | | | | | | |
| ..... | ..... | ..... | 320 | 11 | 0.4 | 73 | 22 | 7.0 | 7 | 6 | 324 | 272 | 0 | 12-58 |
| ..... | ..... | 100 | | | | | | | | | | | | |
| ..... | ..... | ..... | 284 | 12 | 0.45 | 71 | 21 | 4.4 | 3 | 29 | 285 | 265 | 0 | 5-57 |
| ..... | ..... | 15,150 | | | | | | | | | | | | |
| ..... | ..... | ..... | 464 | 12 | 0.55 | 98 | 34.1 | 7.1 | 18 | 79 | 350 | 385 | 1.0 | 4-54 |
| ..... | ..... | ..... | 364 | 12 | 0.35 | 80 | 30.5 | 2.3 | 12 | 45 | 327 | 325 | 1.0 | 4-54 |
| ..... | ..... | ..... | 254 | 13 | 0.6 | 66 | 21.9 | 8 | 2 | 15 | 312 | 255 | 1.0 | 7-54 |
| ..... | ..... | ..... | 360 | 12 | 0.25 | 78 | 28 | 6.2 | 12 | 42 | 316 | 310 | 1.0 | 4-54 |
| ..... | ..... | ..... | 540 | 11 | 0.75 | 120 | 30.5 | 12.4 | 17 | 134 | 348 | 425 | 1.0 | 4-54 |
| ..... | ..... | 100 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 390 | | | | | | | | | | | | |
| ..... | ..... | ..... | 330 | 9 | 0.05 | 76 | 23 | 4.5 | 8 | 33.5 | 289 | 285 | 0.2 | 8-52 |
| ..... | ..... | ..... | 276 | 14 | 0.7 | 62 | 24 | 6 | 5 | 15 | 293 | 255 | 0 | 2-58 |
| ..... | ..... | 75 | | | | | | | | | | | | |
| ..... | ..... | ..... | 360 | 11 | 0.1 | 80 | 29 | 6.1 | 6 | 35 | 348 | 320 | 1.0 | 1-56 |
| ..... | ..... | ..... | 300 | 10 | 0 | 69 | 24 | 8 | 7 | 36 | 280 | 272 | 1.0 | 1-56 |

| LOCATION | POPULATION | OWNERSHIP | SOURCE | TREATMENT | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Std. Filtration | Lime Softening | Zeolite Softening | Iron Removal | Chlorination | Fluoridation |
| **KALAMAZOO COUNTY (Cont'd)** | | | | | | | | | |
| **Portage Township** | 800 | M | Water from City of Kalamazoo. | | | | | | |
| Fabercrest | 70 | T | Well in drift 120′ deep | | | | | | |
| Portage Junior High School property | | | | | | | | | |
| Lexington Green | 100 | T | Wells in drift 180′ deep | | | | | | |
| Sprinkle Road (2 wells) | | | | | | | | | |
| Milham School Area | 1,330 | T | Wells in drift 182′ to 186′ deep | | | | | | |
| Milham School property (2 wells) | | | | | | | | | |
| Pershing School Area | 100 | T | Wells in drift 169′ to 174′ deep | | | | | | |
| Centre Ave. and Penn. R. R. (2 wells) | | | | | | | | | |
| Twyckenham Area | 750 | T | Wells in drift 92′ to 142′ deep | | | | | | |
| Amberly School property (2 wells) | | | | | | | | | |
| Schuring Avenue and Rockford Street | | | | | | | | | |
| Westfield Plat | 100 | T | Wells in drift 146′ to 185′ deep | | | | | | |
| Milham Avenue (2 wells) | | | | | | | | | |
| **Schoolcraft** | 1,205 | M | Wells in drift 62′ to 183′ deep | | | | | x | |
| Cass and Earl Streets (3 wells) | | | | | | | | | |
| **Vicksburg** | 2,224 | M | Wells in drift 81′ to 143′ deep | | | | | | |
| Richardson and Prairie Streets (2 wells) | | | | | | | | | |
| Fourth and Kenyon Streets | | | | | | | | | |
| **KALKASKA COUNTY** | | | | | | | | | |
| **Kalkaska** | 1,250 | M | Wells in drift 75′ to 255′ deep | | | | x | x | |
| Laurel and Chestnut Streets | | | | | | | | | |
| Hyde and Chestnut Streets | | | | | | | | | |
| Birch and Kalkaska Streets | | | | | | | | | |
| **KENT COUNTY** | | | | | | | | | |
| **Alpine Township** | | | | | | | | | |
| Westgate Subdivision (Owner: Northgate Water Co.) | 1,300 | P | Wells in drift 91′ to 140′ deep | | | | | | |
| Westgate and Lamoreaux | | | | | | | | | |
| Branywyne Drive | | | | | | | | | |
| Westnedge and Springfield | | | | | | | | | |
| Bekins Street | | | | | | | | | |
| **Cannon Township** | | | | | | | | | |
| Rockford Village Subdivision | 150 | M | Water from Rockford. | | | | | | |
| **Cedar Springs** | 1,768 | M | Wells in drift 47′ to 90′ deep | | | | | | x |
| Maple and Main Streets (2 wells) | | | | | | | | | |
| Beech Street and Park Street | | | | | | | | | |
| **Courtland Township** | | | | | | | | | |
| Rockford Village Subdivision | 30 | M | Water from Rockford. | | | | | | |
| **East Grand Rapids** | 10,924 | M | 2000′ of 16″ and 1,100′ of 24″ Intake 40′ deep in Reed's Lake | | | | | x | x |
| **Grand Rapids** | 212,270 | M | Lake Michigan: 6,200′ of 54″ Intake 55′ deep in Lake Michigan | x | | | | | x |
| **Grand Rapids Township** | | | | | | | | | |
| Cascadia Subdivision No. 2 | | T | Water from Grand Rapids. | | | | | | |
| Forest Hills Subdivision (2 wells) (Owner: Mr. R. D. Brooks) | 40 | P | Wells in drift 150′ deep | | | | | x | |
| Michigan Veterans Facility (Owner: State of Michigan) | 470 | S | Water from Grand Rapids. | | | | | | |
| North Park (Owner: North Park Water Co., Mr. Charles Russell) | 400 | P | Wells in drift 40′ deep | | | | | | |
| Between Coit Rd. and Effie St. (4 wells) | | | | | | | | | |
| **Grandville** | 7,975 | M | Wells in drift 30′ to 41′ deep | | | | | x | x |
| Oakes and Washington, Well 1 | | | | | | | | | |
| Oakes and Washington, Well 2 | | | | | | | | | |
| Pineview and Aron (2 wells) | | | | | | | | | |
| East Elementary School | | | | | | | | | |
| **Lowell** | 2,545 | M | Wells in drift 49′ to 72′ deep | | | | | x | x |
| Washington Street | | | | | | | | | |
| Gee Drive and Foreman (3 wells) | | | | | | | | | |
| **Paris Township** | 5,000 | T | Wells in rock and drift 60′ to 345′ deep | | | x | | x | x |
| 353—48th Street, Well 1 | | | | | | x | | | |
| Well 2 | | | | | | x | | | |
| Well 3 | | | | | | x | | | |
| 36th Street | | | | | | | | | |
| Aleda Avenue | | | | | | | | | |
| 1661—44th Street (standby only) | | | | | | | | | |
| Burgis Avenue | | | | | | | | | |
| Pine Creek Subdivision | 300 | T | | | | | | | |
| Mick Avenue and Tampa (2 wells) | | | | | | | | | |

| STORAGE (1000 Gallons) | | | CHEMICAL ANALYSES—PPM | | | | | | | | | | | DATE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treated Water at Plant | Ground Level on System | Elevated | Total Solids | Silica ($SiO_2$) | Iron (Fe) | Calcium (Ca) | Magnesium (Mg) | Sodium and Potassium (Na + K) | Chloride (Cl) | Sulphate ($SO_4$) | Bicarbonate ($HCO_3$) | Total Hardness ($CaCO_3$) | Fluoride (F) | |
| | | 3 pn | 200 | 11 | 1.5 | 47 | [illegible] | 0.6 | 4 | 0 | 220 | 165 | 0 | 1-60 |
| | | 5.0 pn | | | | | | | | | | | | |
| | | 10 pn | 266 | 14 | 0.2 | 60 | [illegible] | 5.8 | 3 | 21 | 278 | 240 | 0 | 6-60 |
| | | 5.0 pn | | | | | | | | | | | | |
| | | 10 pn | 266 | 12 | 0 | 60 | 21 | 2.7 | 2 | 32 | 250 | 235 | 0 | 1-60 |
| | | 5.0 pn | | | | | | | | | | | | |
| | | 60 | 332 | 13 | 0.6 | 72 | 18 | 0.1 | 3 | 43 | 294 | 290 | 0 | 6-58 |
| | | 75 | 412 | 13 | 1.0 | 92 | 21 | 25.2 | 29 | 35 | 335 | 315 | 0 | 6-58 |
| | | | 258 | 13 | 0 | 60 | 18 | 0.1 | 4 | 22 | 248 | 225 | 0 | 6-58 |
| | | 50 | 190 | 10 | 1.0 | 48 | 9.8 | 4.7 | 0 | 7 | 195 | 160 | 0 | 3-58 |
| | | | 180 | Treated: 0<br>9 | 0.2 | 46 | 9.8 | 2.6 | 0 | 7 | 178 | 155 | 0 | 3-58 |
| | | 1.5 & 5 pn | 304 | 10 | 0 | 64 | 26 | 7.7 | 2 | 43 | 280 | 265 | 0 | 11-58 |
| | | | 370 | 13 | 0.5 | 80 | 24 | 8.7 | 1 | 70 | 308 | 300 | 0 | 5-60 |
| | | 56 | 345 | 10 | 0.3 | 80 | 21 | 10.6 | 20 | 42 | 285 | 285 | 1.0 | 10-58 |
| | | | 324 | 12 | 0 | 69 | 20 | 14.9 | 2 | 65 | 245 | 254 | 1.0 | 10-58 |
| | | 1,250 | 284 | 2 | 0.1 | 56 | 20 | 16.9 | 40 | 37 | 195 | 220 | 1.0 | 5-60 |
| | | 56,000 | 160 | 3 | 0 | 33.6 | 11.7 | 4.3 | 7 | 21.5 | 134 | 132 | 1.0 | 8-52 |
| | | 5 pn | 156 | 12 | 0.2 | 38 | 11 | 2.4 | 0 | 0 | 170 | 140 | 0 | 7-60 |
| | | | 314 | 9 | 1.2 | 78 | 19 | 2.9 | 3 | 65 | 245 | 270 | 0 | 11-58 |
| | | 250 | 802 | 11 | 0 | 160 | 40.2 | 61 | 82 | 125 | 557 | 565 | 1.0 | 2-54 |
| | | | 394 | 7 | 0 | 88 | 24.3 | 4 | 15 | 93 | 248 | 320 | 1.0 | 2-54 |
| | | | 400 | 12 | 0 | 80 | 24 | 12.2 | 21 | 75 | 254 | 298 | 1.0 | 7-59 |
| | | 500 | 248 | 9 | 0.3 | 54 | 18 | 5 | 2 | 33 | 224 | 210 | 1.0 | 12-58 |
| | | | 428 | 8 | 0.4 | 98 | 26 | 4.7 | 5 | 105 | 293 | 352 | 1.0 | 12-58 |
| | | 535 stp | 465 | 16 | 0.75 | 112 | 21 | 26 | 5 | 105 | Treated: 90<br>355 | 365 | 1.0 | 10-59 |
| | | | 530 | 22 | 1.4 | 113 | 26 | 26.9 | 6 | 121 | 351 | 388 | 1.0 | 10-59 |
| | | | 680 | 12 | 4.2 | 130 | 33 | 15.6 | 22 | 250 | 188 | 461 | 1.0 | 10-59 |
| | | | 270 | 13 | 0.9 | 57 | 16 | 11.2 | 13 | 43 | 210 | 210 | 1.0 | 6-60 |
| | | | 385 | 12 | 1.1 | 82 | 13 | 26.4 | 36 | 120 | 175 | 260 | 1.0 | 10-59 |
| | | | 1,160 | 17 | 1.7 | 248 | 29 | [illegible] | 16 | 590 | 265 | 740 | 1.0 | 4-61 |
| | | | 760 | 15 | 1.8 | 182 | 26 | 25.3 | 3 | 335 | 298 | 540 | 1.0 | 10-59 |
| | | 4 pn | 390 | 17 | 1.5 | 90 | 24 | 15.5 | 2 | 55 | 364 | 325 | 1.0 | 1-60 |

# RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U.S. EPA ID NO MID016724114

PROJ. ACCT. NO. FMI 03585R

TDD F05-9001-041

SPLIT SAMPLES ACCEPTED( ) DECLINED(X)

FACILITY/OCCUPANT NAME
MISSAM STEEL / CENTRAL IRON & METAL
c/o ALAN BLYVEIS

FACILITY/OCCUPANT ADDRESS
75 N. 14th STREET
SPRINGFIELD, MI. 49016

| SAMPLE NUMBER | DATE | TIME | SPLIT SAMPLES (✓) | OTR# | ITR# | DESCRIPTION OF SAMPLE LOCATIONS | SEMIVOLATILES | PESTICIDES/PCBS | VOLATILES | METALS | CYANIDE | | | MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S1 | 12/18/90 | 1115 | | ENB73 | MEMS57 | S1 | / | / | / | / | / | | | SOIL |
| S2 | 12/18/90 | 1130 | | ENB74 | MEMS58 | S2 | / | / | / | / | / | | | SOIL |
| S3 | 12/18/90 | 1215 | | ENB75 | MEMS59 | S3 | / | / | / | / | / | | | SOIL |
| S4 | 12/18/90 | 1230 | | ENA12 | MEMM97 | S4 | / | / | / | / | / | | | SOIL |
| S5 | 12/18/90 | 1320 | | ENA13 | MEMM98 | S5 | / | / | / | / | / | | | SOIL |
| S6 | 12/18/90 | 1420 | | ENA14 | MEMM99 | S6 | / | / | / | / | / | | | SOIL |
| S7 | 12/18/90 | 1445 | | ENA15 | MEMM01 | S7 | / | / | / | / | / | | | SOIL |
| S8 | 12/18/90 | 1500 | | ENA16 | MEMM02 | S8 | / | / | / | / | / | | | SOIL |
| ~~S9~~ | ~~12/18/90~~ | | | ~~ENA17~~ | ~~MEMM03~~ | ~~S9~~ | ~~/~~ | ~~/~~ | ~~/~~ | ~~/~~ | ~~/~~ | | | ~~SOIL~~ |
| (NOT COLLECTED) | | | | | | | | | | | | | | |

TRANSFERRED BY
ROBERT E. SLAUGHTER (Signature) 12/18/90 (Date) 1600 (Time)

RECEIVED BY:
Al Blyveis (Signature) 12/18/90 (Date) 1600. (Time)

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

TITLE Gen Mgr.

TELEPHONE (616) 962-6109

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

| SAS NUMBER |
|---|
| |

Approved by: SPECIAL ANALYTICAL SERVICE
Client Request

[ ] Regional Transmittal [ ] Telephone Request

A. EPA Region/Client: Region V/FIT

B. RSCC Representative: JAN PELS

C. Telephone Number: (312) 353-2720

D. Date of Request: 12/10/90

E. Site Name: Central Iron and Metal SI/22
Springfield, MI.
EPA ID: MID016724114

Please provide below description of your request for Special Analytical Service under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in a delay in the processing of your request. Please continue response on additional sheet or attach supplementary information as needed.

1. General description of analytical service requested:
   Analysis of air samples for specified volatile organics using EPA Method TO2. Cartridges are to be analyzed separately unless specified by field personnel.

2. Definition and number of work units involved (specify whether whole samples or fractions; whether organics or inorganics; whether aqueous or soil and sediments; and whether low, medium or high concentration):
   Analyze 36 low level air samples for target volatile organic compounds (Table 1) and tentatively identified compounds (TICs).
   36 * samples + 22 QC tubes + = total tubes (field personnel will supply tubes). * additional tubes will be sent for lab method blanks, Calibrations, MDL spike, etc.

3. Purpose of analysis (specify whether Superfund (enforcement or remedial action), RCRA, NPDES, ETC.):
   SUPERFUND---SITE INSPECTION

4. Estimated date(s) of collection: December 17, 1990

5. Estimate date(s) and method of shipment:
   SHIPMENT BY FEDERAL EXPRESS for week of December 17, 1990

* 3 samples will have a front and a back cartridge to check for breakthrough. Lab should analyze each cartridge separately. Field staff will give each cartridge a separate SAS #.

6. Number of days analysis and data required after laboratory receipt of sample:
   THE LABORATORY MUST ANALYZE WITH IN 14 DAYS OF SAMPLE RECEIPT
   THE LAB MUST REPORT RESULTS WITHIN 30 DAYS OF RECEIPT OF SAMPLES TO CPMS.

7. Analytical protocol required (attach copy if other than a protocol currently used in this program:
   Thermal desorption of a CMS cartridge onto a cryogenic focusing trap, followed by desorption of the cryogenic trap and GC/MS analysis of the volatile organic compounds (VOCs). See the attached guideline for GC/MS tuning, analytical procedures, and the target compound list (Table 1), using EPA Method TO2.

8. Special technical instructions (if outside protocol requirements, specify compound names, CAS numbers, detection limits etc.):
   FIT will supply 48 stainless steel sorbent Carbotrap 300 tubes (1/4" o.d. x 7"). Deviations from the method for analysis will not be allowed without approval from the Regional Representative. Verify the detection limits through cartridge spiked with all target compounds at the concentration of the detection limits. See Attachment 1 for additional details.

9. Analytical results required(if known, specify format for data sheets, QA/QC reports, Chain-of-Custody documentation, etc.
   All documentation requirements of the CLP organics statement of work (SOW) (2/88) apply, including copies of the chain-of-custody forms received at the laboratory with the samples, initial and continuing calibration sheets, OADS, surrogate recovery summary, internal standard summary, and matrix spike/matrix spike duplicate (MS/MSD) recovery summary. Non-target compounds detected will be identified, quantitated, and reported as per attachment. All results from analysis of blank cartridges will also be reported. Provide the detection limits verification data as discussed above in Attachment 1.

10. Other(use additional sheets or attach supplementary information, as needed):

11. Name of sampling/shipping contact: ANDREA DAVIS
    Phone: (312) 663-9415

12. DATA REQUIREMENTS

| PARAMETER OR CONCENTRATION | DETECTION LIMIT | ± PRECISION DESIRED |
|---|---|---|
| Target VOCs (Table 1 of SAS) | 5 ng/tube | +/-25% |
| | | |

13. QC Requirements

| Audits Required | Frequency of audits | LIMITS (Percent or Concentration) |
|---|---|---|
| Method Blank | Daily, at beginning and every 12 hour shift | <MDL |
| Continuing Calibration Check | Daily, at beginning and every 12 hour shift | <25% |
| surrogates | each sample, standard, blank, etc | ±25% |
| MS & MSD for in lab blank cartridges | 1 per group of 10 samples | 75-125% recovery +/-25%RPD |
| Internal standards | each sample, std, blank, etc. | per SOW |
| | | |
| MDL Verification Spike | once | ±50% R |

14. Action Required if Limits are Exceed:

CONTACT REGION V RSCC JAN PELS (312) 353-2720
CHUCK ELLY (312) 353-9087

IF ANY OUTLIERS OCCUR OR OTHER PROBLEMS (SUCH AS THE NEED FOR DILUTIONS), CONTACT THE RSCC (JAN PELS) BEFORE PROCEEDING.

Please return this request to the Sample Management Office as soon as possible to expedite processing of your request for special analytical service. Should you have any questions or need any assistance, please contact your Regional representative at the Sample Management Office.

TABLE 1

TARGET COMPOUND LIST AND METHOD DETECTION LIMIT

| Parameter | Required Quantitation Limits (ng/tube) |
|---|---|
| Acetone | 5 |
| Benzene | 5 |
| 2-Butanone (MEK) | 5 |
| Carbon Disulfide | 5 |
| Carbon Tetrachloride | 5 |
| Chlorobenzene | 5 |
| Chloroform | 5 |
| Cumene | 5 |
| 1,2-Dichloroethane | 5 |
| 1,2-Dichloroethene (total) | 5 |
| 1,2-Dichloropropane | 5 |
| 1,3-Dichloropropane | 5 |
| Ethyl Benzene | 5 |
| Methylene Chloride | 5 |
| 1,1,2,2-Tetrachloroethane | 5 |
| Tetrachloroethylene | 5 |
| Tetrahydrofuran | 5 |
| Toluene | 5 |
| 1,1,1-Trichloroethane | 5 |
| Trichloroethylene | 5 |
| o-, m-, p-Xylene (total) | 5 |

ATTACHMENT 1

2/88

I. Perform the following per CLP Statement of Work (SOW) (  ).

1. GC/MS Tuning

2. Qualitative compound identification

3. Surrogate Spike (compounds to be used and their concentrations as they are specified in the SOW) to standards, blanks, and samples. the concentration of each surrogate spike compound shall be 200 total ng.

4. Internal Standard Compounds to be used and their concentrations.

5. For matrix spike/matrix spike duplicate (MS/MSD) analysis, matrix spike compounds specified in the CLP SOW shall be used. The total concentration of each compound shall be at 200 ng.

6. Tentatively identified of non-target compounds (TICs).

II. Calibration Requirements

1. Initial Calibration: ±35% RSD for RFs
   Initial calibration curve shall consist of 5 points at 5, 20, 200, 500, and 1,000 total ng of each compound.

2. Continuing Calibration Check: ±25% of initial cal. $\overline{RF}$
   a. Perform daily continuing calibration check at the beginning, before sample analysis, and every 12 hour shift using standards at concentration of 200,

   b. Perform weekly using standard at concentration of 20 ng. ±25%

III. Preparation and Analysis of Standards
Calibration standards shall be prepared by spiking pre-cleaned blank cartridges with appropriate amounts of standards, and analyzed the same way as the samples. *

IV. Detection Limit Verification
Spike a blank cartridge with all target compounds at the required quantitation limits as listed in Table 1. All qualitative criteria as per the CLP SOW for organics shall be met. Provide documentation requirements of the CLP organic SOW, as though this was a sample analysis (including mass spectra).

V. Analysis
Analyze and report results of each cartridge separately in the unit of ng/tube.

* cartridges will be supplied by field staff

MELVIN M. KAMINSKY, Ph.D.

ecology and environment, inc.

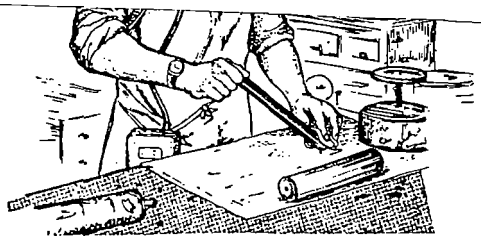
111 WEST JACKSON BOULEVARD, CHICAGO, IL 60604
TEL. 312-663-9415

International Specialists in the Environment

SUPELCO
A ROHM AND HAAS COMPANY

# arbotrap™ — an Excellent dsorbent for Sampling lany Airborne Contaminants

## GC Bulletin 846B



Carbotrap high purity, graphitized carbon black can adsorb, then release a wide range of airborne organic contaminants. A Class I adsorbent (1), it has no surface ions or active (functional) groups. The entire surface is available for interactions that depend solely on dispersion (London) forces (2). In contrast, two other widely used adsorbents, Tenax® GC and Amberlite® XAD-2 resins, have localized surface charges for *specific* adsorbent/adsorbate interactions. Furthermore, Carbotrap adsorbent is more hydrophobic in nature than either of the resins. Thus, its performance is unaffected by humidity. Carbotrap adsorbent is free of contaminants and is not susceptible to solvent degradation.

We evaluated Carbotrap adsorbent for airborne organic compounds, using procedures that parallel work described by the US Environmental Protection Agency (3). We introduced a known *challenge* concentration of adsorbate onto a Carbotrap bed, then passed air through the bed. The specific retention or *breakthrough* volume ($V^t_g$) of air needed to elute the adsorbate was determined. The larger this value, the better the adsorbate was retained.

### Carbotrap adsorbent traps and releases a wider range of airborne organic compounds than Tenax GC or XAD-2 resins

To determine Carbotrap adsorbent's functional trapping range (the range of molecular sizes that can be trapped successfully, then desorbed), we used 38 compounds ranging from C2 to C14 straight chain and ring compounds. To characterize the nonspecific surface properties of Carbotrap adsorbent, adsorbates with diverse functional groups were chosen. We established the lower end of the functional range by setting 1.0 liter as the lowest acceptable breakthrough volume. The upper end of the range was determined by evaluating the Carbotrap adsorbent's ability to release large molecules (e.g., PAHs or pesticides) through thermal desorption. A 2.0 minute migration time and 350°C temperature were considered the maximum allowable conditions for proper thermal desorption.

Carbotrap adsorbent's functional range for the compounds studied is indicated in Table 1. Extremely large sample volumes can be used with adsorbates larger than n-decane and n-butylbenzene.

As a comparison, the lower end of the functional range for Amberlite XAD-2 resin is similar to that for Carbotrap adsorbent. But the upper limit is restricted by Amberlite XAD-2 resin's limited ability to withstand certain solvents and temperatures above 150°C. The lower limit for Tenax GC appears to be a linear C6 backbone or equivalent struc-

**Table 1 — Breakthrough Volumes for Organic Adsorbates on Carbotrap Adsorbent**

| Adsorbate | $V^t_g$ 20°C (ml/g) | Correl. Coef.* |
|---|---|---|
| Ethane | $1.73 \times 10^1$ | 1.00000 |
| n-Propane | $5.49 \times 10^1$ | 0.99412 |
| n-Butane | $4.06 \times 10^2$ | 0.99875 |
| Ethanol | $4.93 \times 10^2$ | 0.99219 |
| Acetic acid | $7.16 \times 10^2$ | 0.99690 |
| Propionic acid | $1.66 \times 10^3$ | 0.98410 |
| 1,2-Dichloroethane | $1.94 \times 10^3$ | 0.99848 |
| 2-Butanone | $3.76 \times 10^3$ | 0.99611 |
| n-Pentane | $5.89 \times 10^3$ | 0.99994 |
| 2-Methyl-2-propanol | $6.52 \times 10^3$ | 0.98650 |
| Benzene | $1.17 \times 10^4$ | 0.99802 |
| 1,1,2-Trichloroethylene | $1.27 \times 10^4$ | 0.99939 |
| n-Butanol | $1.92 \times 10^4$ | 0.99643 |
| 1,1,2-Trichloroethane | $2.47 \times 10^4$ | 0.99986 |
| n-Hexane | $7.99 \times 10^4$ | 0.99871 |
| n-Pentanoic acid | $4.31 \times 10^5$ | 0.97190 |
| Phenol | $6.16 \times 10^5$ | 0.99941 |
| Toluene | $6.50 \times 10^5$ | 0.99972 |
| Chlorobenzene | $1.58 \times 10^6$ | 0.99999 |
| Cyclohexanone | $2.04 \times 10^6$ | 0.99581 |
| n-Butylamine | $2.08 \times 10^6$ | 0.99935 |
| 4-Heptanone | $2.44 \times 10^6$ | 0.99991 |
| 1,4-Dichlorobenzene | $1.34 \times 10^7$ | 0.99925 |
| n-Octane | $1.61 \times 10^7$ | 0.99989 |
| Ethylbenzene | $2.03 \times 10^7$ | 0.99989 |
| p-Cresol | $2.06 \times 10^7$ | 0.99948 |
| Benzylamine | $2.23 \times 10^7$ | 0.99990 |
| p-Xylene | $4.27 \times 10^7$ | 0.99963 |
| Acetophenone | $6.40 \times 10^7$ | 0.99971 |
| Isopropylbenzene | $1.70 \times 10^8$ | 0.99999 |
| n-Propylbenzene | $1.72 \times 10^9$ | 0.99993 |
| n-Decane | $4.79 \times 10^9$ | 0.99971 |
| n-Butylbenzene | $5.83 \times 10^9$ | 0.99937 |
| Biphenyl | $3.74 \times 10^{12}$ | 0.99999 |
| n-Hexylbenzene | $7.00 \times 10^{12}$ | 0.99989 |
| n-Dodecane | $1.63 \times 10^{14}$ | 0.99903 |
| n-Octylbenzene | $1.31 \times 10^{15}$ | 0.99985 |
| n-Tetradecane | $8.32 \times 10^{16}$ | 0.96309 |

*$V^t_g$ values for high boiling adsorbates must be determined at elevated temperatures, then calculated for 20°C (by linear regression) for comparison. These temperature/breakthrough volume correlation coefficients show regression plots used in this investigation were linear.

☐ Functional range for Carbotrap adsorbent.

▒ Larger compounds that must be desorbed at higher temperatures.

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Not given to Crl oct on 17th w/ rest ↓ p. 10 mistake

# FIT SAMPLE PROPOSAL FORM REGION V

DATE FORM COMPLETED 10/12/90 PAN# FMI 0358SB TDD# F05-9001-041 EPA I.D.# MID 016724114

SITE NAME (PRINT) CENTRAL IRON & METAL, INC. CITY SPRINGFIELD STATE MICHIGAN

TEAM LEADER SLAUGHTER SAMPLER ELVEKROG DATE SENT TO RSCC

CASE # 15580 DRINKING WATER SAS # ORGANIC ~~5783E~~ NA INORGANIC

ROUTINE ANALYTICAL SERVICES (RAS)

LOW WATERS MONITORING WELLS groundwater Geoprobe

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 VOA | 6 | + | + | = 8 | 12/17/90 | RECRA (NY) | | | Won't Take - | |
| ABNs | | | | | | NFT | | | Geoprobe isn't working | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

LOW WATERS SURFACE WATERS

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | | | | | | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

Complete

LOW SOILS/SEDIMENTS/SLUDGES

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 VOA | 9 | | - | 9 | WK OF, 12/17/90 | GULF | 1 | 8 | 9295289290 | 12/18 |
| ABNs | | | | | | NFT | 1 | | 9295289286 | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

"F" AS in Frank ✓ BOB meant Low waters - he SAW THIS mistake 12/14/90. per A. Davis

RESIDENTIAL/ MUNICIPAL WELL WATERS (DRINKING WATER SAMPLES)

LOW DETECTION LIMITS/FAST TURN AROUND

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 VOA | 6 | 1 | 1 | 8 | WK OF 12/17/90 | NO Compuchem | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

A. Davis told Crl.

I NO ISEE NEXT PAGE FOR SPECIAL ANALYTICAL SERVICE REQUEST FOR THIS SITE

SAS #

Confirmed per M.J. and Mel. 12/4/90 - even though FASP isn't approved.

Date Changed for Central Iron TO 12/17/90 - SAS written 11/16/90.

Switched Date on 1/9/90

# F I T  S A M P L E  P R O P O S A L  F O R M  R E G I O N  V

DATE FORM COMPLETED 1/2/91 PAN# FMF0358SB TDD# F05-9001-041 EPA I.D.# MID016724114

SITE NAME (PRINT) Central Iron & Metal, INC CITY Springfield STATE MI.

TEAM LEADER Slaughter SAMPLER C. Schultz DATE SENT TO RSCC

CASE # 15811 DRINKING WATER SAS # ORGANIC NA INORGANIC NA

ROUTINE ANALYTICAL SERVICES (RAS)

LOW WATERS MONITORING WELLS

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | 6 | 1 | 1 | 8 | wk of 1/28/91 | HAZLETON | 3 | 6 | 9157647505 | 1/30/91 |
| ABNs | | | | | | | 1 | 1 | 9157647542 | 1/29/91 |
| PEST/PCB | | | | | | COLUMBIA | 1 | 6 | 9157697494 | |
| METALS | | | | | | | 1 | 1 | 9157647553 | 1/30/91 |
| CN | | | | | | | | | | |

LOW WATERS SURFACE WATERS

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | | | | | | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

Changed from Crl to Clp on Friday A.M. before week of Sampling

LOW SOILS/SEDIMENTS/SLUDGES

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | | | | | | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

According to L. Kowalka at Crl priorities at Crl changed — Crl was assigned more/other work.

RESIDENTIAL/ MUNICIPAL WELL WATERS (DRINKING WATER SAMPLES)

LOW DETECTION LIMITS/FAST TURN AROUND

| FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | | | | | | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

Complete

Confirmed

SAS #

SEE NEXT PAGE FOR SPECIAL ANALYTICAL SERVICE REQUEST FOR THIS SITE

Possible Shipping over 2 Days

SAMPLER CHECKLIST

ALL LOW CONCENTRATION SAMPLES

Site Name Central Iron & Metal

All the below procedures have been followed and all coolers properly packaged for shipment.

Cynthia Schatz
Sampler Signature

Team Leader Signature

✓ 1. Is date shipped filled in on the OTR/ITR?

✓ 2. Is date and time of sample collection (Letter "F) filled in on the OTR/ITR?

✓ 3. Has either Shipment Complete or Shipment Not Complete been marked on the OTR/ITR?

✓ 4. On the C.O.C. form, is PAN in project no.; TDD/Case/SAS (if applicable) in project name for CLP and site name/case for CRL?

✓ 5. Are all dates and times on the C.O.C. form?

✓ 6. Has either grab or composite sample been marked on the C.O.C.?

✓ 7. Is the matrix filled out on each line of the C.O.C. form? (i.e., Soil, Water, Drinking Water) DO NOT USE ARROWS.

✓ 8. Is the Cooler # written on top of the C.O.C. form?

✓ 9. Is it referenced on the C.O.C.s which cooler # the OTR/ITR or the CRL tracking forms are in?

✓ 10. Are relinquish date, time, and signature on the bottom of the C.O.C.?

✓ 11. Is there one C.O.C. per cooler?

✓ 12. Has the proper paperwork been put in a plastic bag and taped to the inside of the cooler lid?

- o C.O.C. - Send white copy, bring back pink and yellow.
- o OTR/ITR - Send white and yellow copies and bring back blue/green and pink.
- o CRL tracking forms - send all of them.

SA002(04/18/90)

✓ 13. Is sample number, date, and time of collection permanently labeled on each sample bottle?

✓ 14. Are samples packaged in such a way to prevent breakage?

NA 15. Have photographs been taken of each cooler showing ice, custody seals, and paperwork?

✓ 16. Are the coolers acceptable at Fed Ex?

- o Condition
- o Drain plug taped
- o Correctly labeled with address stickers

✓ 17. Are you sending the coolers to the correct lab? Are you using the correct lab acronym?

✓ 18. Did you call the SMC before 10:00 a.m. on the day after the sample shipment?

ONLY APPLIES TO WATERS

✓ 1. On the OTR/ITR forms, is the Sample Blank marked rinsate (4) in sample description (Letter "A").

✓ 2. For monitoring wells, has it been stated on the bottom of the inorganic C.O.C. whether the metals were filtered or not?

✓ 3. On the OTR/ITR forms, "blank" should be written under special handling (Letter "D") and on OTR, MSD should be marked in the same location.

✓ 4. Have the preservatives been written on the C.O.C. next to the bottle volume?

$HNO_3$ for Metals ~~$K_2Cr_2O_7$, $+HNO_3$ for Hg~~ NA

NaOH for CN HCL for VOA

✓ 5. Are sample water levels marked with a grease pencil on all sample bottles except for VOA?

mostly

SA002(04/18/90)

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW1 / MW1

SAMPLING DATE 1/29/91 SAMPLING TIME 1040

ORGANIC TRAFFIC NUMBER ENA 18

INORGANIC TRAFFIC NUMBER MEMM 04

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 8 OZ. AMBER GLASS | EXTRACTABLES | 912 | 0211043 |
| 8 OZ. AMBER GLASS | EXTRACTABLES | 913 | 0211043 |
| 40 ML VIAL | VOLATILES | 914 | B0171033 |
| 40 ML VIAL | VOLATILES | 915 | B0171033 |
| 1 LITER PLASTIC | METALS | 916 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 917 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW1 / DUPLICATE

SAMPLING DATE 1/29/91 SAMPLING TIME 1040

ORGANIC TRAFFIC NUMBER ENA 19

INORGANIC TRAFFIC NUMBER MEMM 05

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 8 OZ. AMBER GLASS | EXTRACTABLES | 918 | 0211043 |
| 8 OZ. AMBER GLASS | EXTRACTABLES | 919 | 0211043 |
| 40 mL VIAL | VOLATILES | 920 | B0171033 |
| 40 mL VIAL | VOLATILES | 921 | B0171033 |
| 1 LITER PLASTIC | METALS | 922 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 923 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MWZ / MWZ

SAMPLING DATE 1/29/91 SAMPLING TIME 1250

ORGANIC TRAFFIC NUMBER ENA 20

INORGANIC TRAFFIC NUMBER MEMM 06

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 8 OZ. AMBER GLASS | EXTRACTABLES | 924 | 0211043 |
| 8 OZ. AMBER GLASS | EXTRACTABLES | 925 | 0211043 |
| 40 ML VIAL | VOLATILES | 926 | B0171033 |
| 40 ML VIAL | VOLATILES | 927 | B0171033 |
| 1 LITER PLASTIC | METALS | 928 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 929 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MSD/MW2

SAMPLING DATE 1/29/91 SAMPLING TIME 1250

ORGANIC TRAFFIC NUMBER ENA 20

INORGANIC TRAFFIC NUMBER ~~ME~~ NOT APPLICABLE

| BOTTLE | ANALYSIS | TAG NUMBERS 5-043- | LOT NUMBER |
|---|---|---|---|
| 80 oz. AMBER GLASS | EXTRACTABLES | 930 | 0211043 |
| 80 oz. AMBER GLASS | EXTRACTABLES | 931 | 0211043 |
| 40 mL VIAL | VOLATILES | 932 | B0171033 |
| 40 mL VIAL | VOLATILES | 933 | B0171033 |
| 40 mL VIAL | VOLATILES | 934 | B0171033 |
| 40 mL VIAL | VOLATILES | 935 | B0171033 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW3 / MW3

SAMPLING DATE 1/29/91 SAMPLING TIME 1400

ORGANIC TRAFFIC NUMBER ENA 21

INORGANIC TRAFFIC NUMBER MEMM 07

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 OZ. AMBER GLASS | EXTRACTABLES | 936 | 0211043 |
| 80 OZ. AMBER GLASS | EXTRACTABLES | 937 | 0211043 |
| 40 ML VIAL | VOLATILES | 938 | B0171033 |
| 40 ML VIAL | VOLATILES | 939 | B0171033 |
| 1 LITER PLASTIC | METALS | 940 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 941 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW4 / MW4

SAMPLING DATE 1/29/91 SAMPLING TIME 1445

ORGANIC TRAFFIC NUMBER ENA 22

INORGANIC TRAFFIC NUMBER MEMM 08

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 8 OZ. AMBER GLASS | EXTRACTABLES | 942 | 0211043 |
| 8 OZ. AMBER GLASS | EXTRACTABLES | 943 | 0211043 |
| 40 ML VIAL | VOLATILES | 944 | B0171033 |
| 40 ML VIAL | VOLATILES | 945 | B0171033 |
| 1 LITER PLASTIC | METALS | 946 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 947 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: ORANGISH

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

# SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW5 / MW5

SAMPLING DATE 1/30/91 SAMPLING TIME 1130

ORGANIC TRAFFIC NUMBER ENA 23

INORGANIC TRAFFIC NUMBER MEMM 09

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 OZ. AMBER GLASS | EXTRACTABLES | 948 | 0211043 |
| 80 OZ. AMBER GLASS | EXTRACTABLES | 949 | 0211043 |
| 40 mL VIAL | VOLATILES | 950 | B0171033 |
| 40 mL VIAL | VOLATILES | 951 | B0171033 |
| 1 LITER PLASTIC | METALS | 952 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 953 | 0319023 |
| | | | |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION BLK / NA

ABSOPURE DISTILLED $H_2O$, PLYMOUTH, MI #4612126007

SAMPLING DATE 1/29/91 SAMPLING TIME 1000

ORGANIC TRAFFIC NUMBER EVA 25

INORGANIC TRAFFIC NUMBER MEmm 11

| BOTTLE | ANALYSIS | TAG NUMBERS 5-043- | LOT NUMBER |
|---|---|---|---|
| 80 OZ. AMBER GLASS | EXTRACTABLES | 960 | 0211043 |
| 80 OZ. AMBER GLASS | EXTRACTABLES | 961 | 0211043 |
| 40mL VIAL | VOLATILES | 962 | B0171033 |
| 40mL VIAL | VOLATILES | 963 | B0171033 |
| 1 LITER PLASTIC | METALS | 964 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 965 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

| SAS NUMBER |
|---|
| |

Approved by: SPECIAL ANALYTICAL SERVICE
Client Request

[ ] Regional Transmittal

[ ] Telephone Request

A. EPA Region/Client: Region V/FIT

B. RSCC Representative: JAN PELS

C. Telephone Number: (312) 353-2720

D. Date of Request: November 16, 1990

E. Site Name: Central Iron and Metal
Springfield, MI.
EPA ID: MID016724114

Please provide below description of your request for Special Analytical Service under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in a delay in the processing of your request. Please continue response on additional sheet or attach supplementary information as needed.

1. General description of analytical service requested:
Analysis of air samples for specified volatile organics using EPA Method TO2. Cartridges are to be analyzed separately unless specified by field personnel.

X 2. Definition and number of work units involved (specify whether whole samples or fractions; whether organics or inorganics; whether aqueous or soil and sediments; and whether low, medium or high concentration):
Analyze 48 low level air samples for target volatile organic compounds (Table 1) and tentatively identified compounds (TICs).
30 samples + 15 QC tubes + 3 Blank tubes = total 48 tubes (field personnel will supply tubes).

3. Purpose of analysis (specify whether Superfund (enforcement or remedial action), RCRA, NPDES, ETC.):
SUPERFUND---SITE INSPECTION

4. Estimated date(s) of collection: December 17, 1990 .

5. Estimate date(s) and method of shipment:
SHIPMENT BY FEDERAL EXPRESS for week of December 17, 1990 .

6. Number of days analysis and data required after laboratory receipt of sample:
   THE LABORATORY MUST START THE ANALYSIS WITH IN 7 DAYS OF SAMPLE RECEIPT
   THE LAB MUST REPORT RESULTS WITHIN 30 DAYS OF RECEIPT OF SAMPLES TO CPMS.

7. Analytical protocol required (attach copy if other than a protocol currently used in this program:
   Thermal desorption of a CMS cartridge onto a cryogenic focusing trap, followed by desorption of the cryogenic trap and GC/MS analysis of the volatile organic compounds (VOCs). See the attached guideline for GC/MS tuning, analytical procedures, and the target compound list (Table 1), using EPA Method TO2.

8. Special technical instructions (if outside protocol requirements, specify compound names, CAS numbers, detection limits etc.):
   FIT will supply 48 stainless steel sorbent Carbotrap 300 tubes (1/4" o.d. x 7"). Deviations from the method for analysis will not be allowed without approval from the Regional Representative. Verify the detection limits through cartridge spiked with all target compounds at the concentration of the detection limits. See Attachment 1 for additional details.

9. Analytical results required(if known, specify format for data sheets, QA/QC reports, Chain-of-Custody documentation, etc.
   All documentation requirements of the CLP organics statement of work (SOW) (3/90) apply, including copies of the chain-of-custody forms received at the laboratory with the samples, initial and continuing calibration sheets, OADS, surrogate recovery summary, internal standard summary, and matrix spike/matrix spike duplicate (MS/MSD) recovery summary. Non-target compounds detected will be identified, quantitated, and reported as per attachment. All results from analysis of blank cartridges will also be reported. Provide the detection limits verification data as discussed above in Attachment 1.

10. Other(use additional sheets or attach supplementary information, as needed):

11. Name of sampling/shipping contact: ANDREA DAVIS
    Phone: (312) 663-9415

12. DATA REQUIREMENTS

| PARAMETER OR CONCENTRATION | DETECTION LIMIT | ± PRECISION DESIRED |
|---|---|---|
| Target VOCs (Table 1 of SAS) | 5 ng/tube | +/-25% |

13. QC Requirements

| Audits Required | Frequency of audits | LIMITS (Percent or Concentration) |
|---|---|---|
| Method Blank | Daily, at beginning and every 12 hour shift | <MDL |
| Continuing Calibration Check | Daily, at beginning and every 12 hour shift | <25% |
| Field duplicate | 1 per group of 10 samples | 75-125% recovery |
| MS & MSD for in lab blank cartridges | 1 per group of 10 samples | 75-125% recovery +/-25%RPD |
| Surrogate spike | 1 per group of 10 samples | 75-125% recovery |
| Laboratory blank | 1 per day | Document with data package |

14. Action Required if Limits are Exceed:

CONTACT REGION V RSCC JAN PELS (312) 353-2720
CHUCK ELLY (312) 353-9087

IF ANY OUTLIERS OCCUR OR OTHER PROBLEMS (SUCH AS THE NEED FOR DILUTIONS), CONTACT THE RSCC (JAN PELS) BEFORE PROCEEDING.

Please return this request to the Sample Management Office as soon as possible to expedite processing of your request for special analytical service. Should you have any questions or need any assistance, please contact your Regional representative at the Sample Management Office.

TABLE 1

TARGET COMPOUND LIST AND METHOD DETECTION LIMIT

| Parameter | Required Quantitation Limits (ng/tube) |
|---|---|
| Acetone | 5 |
| Benzene | 5 |
| 2-Butanone (MEK) | 5 |
| Carbon Disulfide | 5 |
| Carbon Tetrachloride | 5 |
| Chlorobenzene | 5 |
| Chloroform | 5 |
| Cumene | 5 |
| 1,2-Dichloroethane | 5 |
| 1,2-Dichloroethene (total) | 5 |
| 1,2-Dichloropropane | 5 |
| 1,3-Dichloropropane | 5 |
| Ethyl Benzene | 5 |
| Methylene Chloride | 5 |
| 1,1,2,2-Tetrachloroethane | 5 |
| Tetrachloroethylene | 5 |
| Tetrahydrofuran | 5 |
| Toluene | 5 |
| 1,1,1-Trichloroethane | 5 |
| Trichloroethylene | 5 |
| o-, m-, p-Xylene (total) | 5 |

ATTACHMENT 1

I. Perform the following per CLP Statement of Work (SOW) (3/90).
1. GC/MS Tuning

2. Qualitative compound identification

3. Surrogate Spike (compounds to be used and their concentrations as they are specified in the SOW) to standards, blanks, and samples. the concentration of each surrogate spike compound shall be 200 total ng.

4. Internal Standard Compounds to be used and their concentrations.

5. For matrix spike/matrix spike duplicate (MS/MSD) analysis, matrix spike compounds specified in the CLP SOW shall be used. The total concentration of each compound shall be at 200 ng.

6. Tentatively identified of non-target compounds (TICs).

II. Calibration Requirements
1. Initial Calibration:
Initial calibration curve shall consist of 5 points at 5, 20, 200, 500, and 1,000 total ng of each compound.

2. Continuing Calibration Check:
a. Perform daily continuing calibration check at the beginning, before sample analysis, and every 12 hour shift using standards at concentrations of 20, 200, and 500.

b. Perform weekly using standard at concentration of 20 ng.

III. Preparation and Analysis of Standards
Calibration standards shall be prepared by spiking pre-cleaned blank cartridges with appropriate amounts of standards, and analyzed the same way as the samples.

IV. Detection Limit Verification
Spike a blank cartridge with all target compounds at the required quantitation limits as listed in Table 1. All qualitative criteria as per the CLP SOW for organics shall be met. Provide documentation requirements of the CLP organic SOW.

V. Analysis
Analyze and report results of each cartridge separately in the unit of ng/tube.

# RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U. S. EPA ID NO MID016724114

PROJ. ACCT. NO. FMI0358SB

TDD F05-9001-041

SPLIT SAMPLES ACCEPTED( ) DECLINED(X)

FACILITY/OCCUPANT NAME
MISSAN STEEL / CENTRAL IRON & METAL
c/o ALAN BLYVEIS

FACILITY/OCCUPANT ADDRESS
75 N. 14th STREET
SPRINGFIELD, MI. 49016

| SAMPLE NUMBER | DATE | TIME | SPLIT SAMPLES (✓) | OTR# | ITR# | DESCRIPTION OF SAMPLE LOCATIONS | SEMIVOLATILES | PESTICIDES/PCBS | VOLATILES | METALS | CYANIDE | | | MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S1 | 12/18/90 | 1115 | | EN873 | MEM557 | S1 | / | / | / | / | / | | | SOIL |
| S2 | 12/18/90 | 1130 | | EN874 | MEM558 | S2 | / | / | / | / | / | | | SOIL |
| S3 | 12/18/90 | 1215 | | EN875 | MEM559 | S3 | / | / | / | / | / | | | SOIL |
| S4 | 12/18/90 | 1230 | | ENA12 | MEMQ97 | S4 | / | / | / | / | / | | | SOIL |
| S5 | 12/18/90 | 1320 | | ENA13 | MEMQ98 | S5 | / | / | / | / | / | | | SOIL |
| S6 | 12/18/90 | 1420 | | ENA14 | MEMQ99 | S6 | / | / | / | / | / | | | SOIL |
| S7 | 12/18/90 | 1445 | | ENA15 | MEMM01 | S7 | / | / | / | / | / | | | SOIL |
| S8 | 12/18/90 | 1500 | | ENA16 | MEMM02 | S8 | / | / | / | / | / | | | SOIL |
| ~~S9~~ | ~~12/18/90~~ | | | ~~ENA17~~ | ~~MEMM03~~ | ~~S9~~ | ~~/~~ | ~~/~~ | ~~/~~ | ~~/~~ | ~~/~~ | | | ~~SOIL~~ |

KE (NOT COLLECTED)

TRANSFERRED BY
ROBERT E SLAUGHTER (Signature) 12/18/90 (Date) 1600 (Time)

RECEIVED BY:
Al Blyveis (Signature) 12/18/90 (Date) 1600 (Time)

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

TITLE Gen Mgr.

TELEPHONE (616) 962-6109

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**REGION 5**
**230 SOUTH DEARBORN ST.**
**CHICAGO, ILLINOIS 60604**

REPLY TO THE ATTENTION OF:

Sample Collection Date: 12/18/90

Recipient Information: ALAN BLYVEIS C/O CENTRAL IRON & METAL,
Name

75 N. 14th ST.
Street Address

SPRINGFIELD MIT 49016
City State Zip Code

(616) 962-6109.
Telephone Number

~~C. C. Johnson & Malhotra, P.C. is a subcontractor of~~ Ecology and Evironment, Inc. ~~who,~~ provides support to the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347. The purpose of this contract is to evaluate sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

A copy of the sample analysis of samples collected from your property will be forwarded by the U.S. EPA within 6 months. If a copy of the sample analysis is not received within 6 months of the sample collection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U. S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-041; PAN: FND035858
Yellow: Recipient
Pink: U.S. EPA

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Organic Traffic Report
*(For CLP Use Only)*

Case Number: 15580
SAS No. (if applicable): N/A

1. Type of Activity (Check one)
☐ ENF ☐ NPLD ☐ RA ☑ SI ☐ STSI
☐ ER ☐ O&M ☐ RD ☐ ST ☐ Other *(Specify)*
☐ ESI ☐ PA ☐ RIFS ☐ STPA

Non-Superfund Program

Site Name: CENTRAL IRON & METAL

City, State: SPRINGFIELD, MI

Site Spill ID: N/A

2. Region Number: V
Sampling Co.: FIT
Sampler (Name): KIRSTEN ELVEKROG

3. Ship To: GULF
6801 PRESS DR.
EAST BLDG.
NEW ORLEANS, LA 70126
ATTN: KAREN BRANDT

4. Date Shipped: 12/18/90
Carrier: F
Airbill Number: 9295289290

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

IF VOA SAMPLE PRESERVED INDICATE IN COLUMN C WITH Y OR N.

| CLP Sample Number (From labels) | (A) Sample Description (From box 5) | (B) Concentration L=low M=med H=high | (C) RAS Analysis VOA | BNA | Pest/PCB | ARO/TOX | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding CLP Inorganic Sample Number |
|---|---|---|---|---|---|---|---|---|---|---|
| ENB 73 | 5 | L | N | / | / | | | S1 | 12/18/90 1115 | MEMS57 |
| ENB 74 | 5 | L | N | / | / | | | S2 | 12/18/90 1130 | MEMS58 |
| ENB 75 | 5 | L | N | / | / | | | S3 | 12/18/90 1215 | MEMS59 |
| ENA 12 | 5 | L | N | / | / | | | S4 | 12/18/90 1230 | MEMQ97 |
| ENA 13 | 5 | L | N | / | / | | | S5 | 12/18/90 1320 | MEMQ98 |
| ENA 14 | 5 | L | N | / | / | | | S6 | 12/18/90 1420 | MEMQ99 |
| ENA 15 | 5 | L | N | / | / | | * | S7 | 12/18/90 1445 | MEMM01 |
| ENA 16 | 5 | L | N | / | / | | | S8 | 12/18/90 1500 | MEMM02 |
| VG ~~ENA 17~~ | ~~5~~ | ~~L~~ | ~~N~~ | ~~/~~ | ~~/~~ | | | ~~S9~~ | ~~12/18/90~~ | ~~MEMM03~~ |

SHIPMENT IS COMPLETE

* SCREEN S7 IN MEDIUM CONCENTRATION (MAY CONTAIN METAL FRAGMENTS)

EPA Form 9110-2 (11-89) Replaces EPA Form 2075-7, which may be used. Blue - Region Copy Pink - SMO Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

ORG (COOLER # 50

# CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: FMT0358
PROJECT NAME: TDD F05-9001-041 / CASE 15580
SAMPLERS: (Signature)

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | VOA - 120ml | ABN/Pest/PCB - 8oz | | | | | TAG #s | REMARKS: LOW CONC MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENB73 | 12/18/90 | 1115 | | / | S1 | 3 | 2 | 1 | | | | | 0438768 | SOIL |
| ENB74 | 12/18/90 | 1130 | | / | S2 | 3 | 2 | 1 | | | | | 043880-2 | SOIL |
| ENB75 | 12/18/90 | 1215 | | / | S3 | 3 | 2 | 1 | | | | | 043884-6 | SOIL |
| ENA12 | 12/18/90 | 1230 | | / | S4 | 3 | 2 | 1 | | | | | 043888-90 | SOIL |
| ENA13 | 12/18/90 | 1320 | | / | S5 | 3 | 2 | 1 | | | | | 043892-4 | SOIL |
| ENA14 | 12/18/90 | 1420 | | / | S6 | 3 | 2 | 1 | | | | | 043896-8 | SOIL |
| ENA15 | 12/18/90 | 1445 | | / | S7 | 3 | 2 | 1 | | | | | 043900-2 | SOIL |
| ENA16 | 12/18/90 | 1500 | | / | S8 | 3 | 2 | 1 | | | | | 043904-6 | SOIL |
| 16 ~~ENA17~~ | ~~12/18/90~~ | | | ~~/~~ | ~~S9~~ | ~~3~~ | ~~2~~ | ~~1~~ | | | | | ~~043908-10~~ | ~~SOIL~~ |
| | | | | | | | | | | | | | | |
| | | | | | OTR IN | | | | | | | | BOTTLE LOTS | |
| | | | | | COOLER # 50 | | | | | | | | 803 0212053 | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 120ml W0278013 | |
| | | | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| | 12/18/90 1730 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks: SHIPPED FEDEX TO GULF CUSTODY SEALS 352634 AIRBILL 9295289286 | |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 05685

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Inorganic Traffic Report
*(For CLP Use Only)*

Case Number: 15580
SAS No. (if applicable): N/A

1. Type of Activity (Check one)
☐ ENF ☐ NPLD ☐ RA ☑ SI ☐ STSI
☐ ER ☐ O&M ☐ RD ☐ ST ☐ Other *(Specify)*
☐ ESI ☐ PA ☐ RIFS ☐ STPA

Non-Superfund Program

Site Name: CENTRAL IRON & METAL

City, State: SPRINGFIELD, MI

Site Spill ID: N/A

2. Region Number: V

Sampling Co.: FIT

Sampler (Name): KIRSTEN ELVERROG

3. Ship To: NFT
409 CORPORATE CIRCLE
GOLDEN, COLORADO
80401
ATTN: RICHARD W. SCHOTTLER

4. Date Shipped: 12/18/90

Carrier: F

Airbill Number: 9295289290

Double volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

| CLP Sample Number *(From labels)* | (A) Sample Description *(From box 5)* | (B) Concentration L=low M=med H=high | (C) List Preservative Used/Vol | (D) RAS Analysis: ~~Total or Dissolved~~ Metals | Cyanide | Low Conc. Sow: Nitrate/Nitrite | Fluoride | (E) Special Handling | (F) Station Location | (G) Date/Time of Sample Collection | (H) Corresponding Organic Sample Number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MEMS57 | 5 | L | | / | / | | | | S1 | 12/18/90 1115 | ENB 73 |
| MEMS58 | 5 | L | | / | / | | | | S2 | 12/18/90 1130 | ENB 74 |
| MEMS59 | 5 | L | | / | / | | | | S3 | 12/18/90 1215 | ENB 75 |
| MEMQ97 | 5 | L | | / | / | | | | S4 | 12/18/90 1230 | ENA 12 |
| MEMQ98 | 5 | L | | / | / | | | | S5 | 12/18/90 1320 | ENA 13 |
| MEMQ99 | 5 | L | | / | / | | | | S6 | 12/18/90 1420 | ENA 14 |
| MEMM01 | 5 | L | | / | / | | | * | S7 | 12/18/90 1445 | ENA 15 |
| MEMM02 | 5 | L | | / | / | | | | S8 | 12/18/90 1500 | ENA 16 |
| ~~MEMM03~~ | ~~5~~ | ~~L~~ | | ~~/~~ | ~~/~~ | | | | ~~S9~~ | ~~12/18/90~~ | ~~ENA 17~~ |

ICS

* SCREEN S7 MEDIUM CONCENTRATION (MAY CONTAIN METAL FRAGMENTS) SHIPMENT IS COMPLETE

EPA Form 9110-1 (11-89) Replaces EPA Form 2075-6, which may be used. Green - Region Copy Pink - SMO Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

ING

COOLER #: 101

# CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: FMI0358
PROJECT NAME: TDD F05-9001-041 | CASE 15580
SAMPLERS: (Signature) [signature]

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | METALS/KW-803 | | | | | | REMARKS TAG #s | LOW CONC MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEMS57 | 12/18/90 | 1115 | | / | S1 | 1 | 1 | | | | | | 043879 | SOIL |
| MEMS58 | 12/18/90 | 1130 | | / | S2 | 1 | 1 | | | | | | 043883 | SOIL |
| MEMS59 | 12/18/90 | 1215 | | / | S3 | 1 | 1 | | | | | | 043887 | SOIL |
| MEMQ97 | 12/18/90 | 1230 | | / | S4 | 1 | 1 | | | | | | 043891 | SOIL |
| MEMQ98 | 12/18/90 | 1320 | | / | S5 | 1 | 1 | | | | | | 043895 | SOIL |
| MEMQ99 | 12/18/90 | 1420 | | / | S6 | 1 | 1 | | | | | | 043899 | SOIL |
| MEMM01 | 12/18/90 | 1445 | | / | S7 | 1 | 1 | | | | | | 043903 | SOIL |
| MEMM02 | 12/18/90 | 1500 | | / | S8 | 1 | 1 | | | | | | 043907 | SOIL |
| ~~MEMM03~~ | ~~12/18/90~~ | | | / | ~~S9~~ | ~~1~~ | ~~1~~ | | | | | | ~~043911~~ | ~~SOIL~~ |
| | | | | | | | | | | | | | LOT #s 0212053 | |
| | | | | | ITR IN | | | | | | | | | |
| | | | | | COOLER # 101 | | | | | | | | | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| [signature] | 12/18/90 1730 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks SHIPPED FEDEX TO: NFT AIRBILL # 9295289290 CUSTODY SEALS 35261-2 | |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 05684

FEDERAL EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 9295289286

2B2M 9295289286

SENDER'S COPY

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3

Date: 12-18-90

1 From (Your Name) Please Print: KIRSTEN ELVERROG

Your Phone Number (Very Important): 312-775-7763

Company: ECOLOGY & ENVIRONMENT

Department/Floor No.:

Street Address: 5634 NORTHWEST HWY

City: CHICAGO State: IL ZIP Required: 60646

2 To (Recipient's Name) Please Print: KAREN BRANDT

Recipient's Phone Number (Very Important): [illegible]

Company: GULF SOUTH ENVIRON. LA.

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 6801 PRESS DR. EAST BLDG

City: NEW ORLEANS State: LA ZIP Required: 70126

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): FT1305-05, FMIC 585B1, 24

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check Acct./Credit Card No. Exp. Date

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
11 [X] YOUR PACKAGING
16 [ ] FEDEX LETTER *
12 [ ] FEDEX PAK *
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
51 [ ]
56 [ ] FEDEX LETTER *
52 [ ] FEDEX PAK *
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day Service (formerly Standard Air) (Delivery by second business day†)
30 [ ] ECONOMY TWO-DAY SVC.

Heavyweight Service (for Extra Large or any package over 150 lbs.)
70 [ ] HEAVYWEIGHT **
80 [ ] DEFERRED HEAVYWEIGHT **

† Delivery commitment may be later in some areas.
*Declared Value Limit $100.
**Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) [ ] (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE _____ Lbs.
7 [ ] OTHER SPECIAL SERVICE _____
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ] DESCRIPTION
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

| PACKAGES | WEIGHT in Pounds Only | YOUR DECLARED VALUE (See right) |
|---|---|---|
| 1 | | |
| | | |
| | | |
| Total | Total | Total |

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs.

Received At: 1 [ ] Regular Stop 3 [ ] Drop Box 4 [ ] BSC 5 [ ] Station 6 [X] On-Call Stop

Fed Ex Emp. No. 1650 12-18-90 1660

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00.

In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

5 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature:

Federal Express Use
Base Charge
Declared Value Charge
Other
Other
Total Charges

REVISION DATE 8/90
PART [illegible]
FORMAT #041

041

FEDERAL EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER
9295289290

282M 9295289290

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3
Date: 12-18-90

1 From (Your Name) Please Print: KIRSTEN ELVEKROG
Your Phone Number (Very Important): 312-775-7763
Company: ECOLOGY & ENVIRONMENT
Department/Floor No.:
Street Address: 5634 NORTHWEST HWY
City: CHICAGO State: IL ZIP Required: 60646

2 To (Recipient's Name) Please Print: RICHARD W. SCHOTTLER
Recipient's Phone Number (Very Important): 303 278 1888
Company: NATURAL RESOURCES LABORATORY
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + Codes.): 401 CORPORATE CIRCLE
City: GOLDEN State: COLORADO ZIP Required: 80401

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): FT1105-09, FW10358SCI, 24

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check Acct./Credit Card No.: Exp. Date:

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
1 [X] YOUR PACKAGING
16 [ ] FEDEX LETTER *
12 [ ] FEDEX PAK *
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
51 [ ]
56 [ ] FEDEX LETTER *
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** Call for delivery schedule

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1 [ ] HOLD FOR PICK-UP (Enter in Box H)
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3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE ____ Lbs
7 [ ] OTHER SPECIAL SERVICE ____
8 [ ]
9 [ ] SATURDAY PICK UP (Extra charge)
10 [ ]
11 [ ] DESCRIPTION
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

| PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE (See right) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| Total | Total | Total |

DIM SHIPMENT (Chargeable Weight) [ ] lbs.

Received At
1 [ ] Regular Stop 3 [ ] Drop Box
4 [ ] BSC
2 [ ] Will Call Stop 5 [ ] Station

Driver/Courier No.: Date/Time: 12-18-90 1600

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

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We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00. In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

5 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature:

Declared Value
Other 1
Other 2
Total Charges

REVISION DATE 8/90
FORMAT #041
041

SENDER'S COPY

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Organic Traffic Report
*(For CLP Use Only)*

| Case Number | SAS No. (if applicable) |
|---|---|
| 15580 | N/A |

1. Sample Description *(Enter in Column A)*
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Rinsate
   5. Soil/Sediment
   6. Oil (SAS)
   7. Waste (SAS)
   8. Other (SAS) *(Specify)*

IF VOA SAMPLE PRESERVED INDICATE IN COLUMN C WITH Y OR N.

2. Region Number: 7 | Sampling Co.: [illegible]
4. Date Shipped: [illegible] | Carrier: F
5. Date Received: 12-19-90 | Received by: C. McColl
Sampler (Name): [illegible] | Airbill Number: [illegible]
Laboratory Contract Number: 68-D9-0038 | Unit Price: 937.00
3. Ship To: GULF [illegible] PRESS DR. [illegible] NEW ORLEANS, LA [illegible]
Triple volume required for matrix spike/duplicate aqueous sample.
Ship medium and high concentration samples in paint cans.
See reverse for additional instructions.
6. Transfer to | Date Received
Received by
Contract Number | Price

| CLP Sample Number (From labels) | (A) Sample Description (From box 1) | (B) Concentration L=low M=med H=high | (C) RAS Analysis VOA | BNA | Pest/PCB | ARO/TOX | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding CLP Inorganic Sample Number | (H) Sample Condition on Receipt | (I) High Conc. Phases (Check below) Solid | Water—MIS Liq. | Non Water—MIS Liq. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENB73 | 5 | L | N | / | / | | | 1 | 1/18/90 1115 | MEM [illegible] | | | | |
| ENB74 | 5 | L | N | / | / | | | 2 | 1/18/90 1130 | MEMS98 | | | | |
| ENB75 | 5 | L | N | / | / | | | 3 | 1/18/90 1215 | MEMS99 | | | | |
| ENA12 | 5 | L | N | / | / | | | 4 | 1/18/90 1230 | MEMG[illegible] | | | | |
| ENA13 | 5 | L | N | / | / | | | 5 | 1/18/90 1320 | MEMG[illegible] | | | | |
| ENA14 | 5 | L | N | / | / | | | 6 | 1/18/90 1420 | MEMG[illegible] | | | | |
| ENA15 | 5 | L | N | / | / | | * | 7 | 1/18/90 1445 | MEMM01 | | | | |
| ENA16 | 5 | L | N | / | / | | | 8 | 1/18/90 1500 | MEMM02 | | | | |
| ~~ENA17~~ | ~~5~~ | ~~L~~ | ~~N~~ | ~~/~~ | ~~/~~ | | | ~~9~~ | ~~1/18/90~~ | ~~MEMM03~~ | | | | |
| | | | | | | | | | | | SDG: ENA 12 | | | |
| | | | | | | | | | | Final | SDG: ENB 75 | | | |
| | | | | | | | [illegible] | | | | | | | |
| | | | | | | | [illegible] | | | | | | | |
| | | | | | | | COMPLETE | | | | | | | |

| PARAMETER: | YES | NO |
|---|---|---|
| ICE PRESENT? | ✓ | |
| BOTTLES BROKEN? | | ✓ |
| EPA TAG PRESENT? | ✓ | |
| SHIPPING SEALS? | ✓ | |
| CONTAINER SEALS? | ✓ | |
| CUSTODY FORM OK? | ✓ | |
| LABELS ACCURATE? | ✓ | |
| NOTES COMMENTS (if none) | | ✓ |

*SCREEN S7 IN MEDIUM CONCENTRATION [illegible] CONTAIN METAL FRAGMENTS

000002

EPA Form 9110-2 (11-89) Replaces EPA Form 2075-7 which may be used. Blue - Region Copy, Pink - SMO Copy, White - [illegible]

# RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U. S. EPA ID NO: MID 016 72414

PROJ. ACCT. NO.: FT1305/FMI0358SB

TDD: F05-9001-04

SPLIT SAMPLES: ACCEPTED( ) DECLINED(✓)

FACILITY/OCCUPANT NAME: CENTRAL IRON & METAL (MISSAM STEEL, INC.)

FACILITY/OCCUPANT ADDRESS: 75 N. 14th STREET SPRINGFIELD, MI. 49016

| SAMPLE NUMBER | DATE | TIME | SPLIT SAMPLES (✓) | OTR# | ITR# | DESCRIPTION OF SAMPLE LOCATIONS | SEMIVOLATILES | PESTICIDES/PCBS | VOLATILES | METALS | CYANIDE | | | MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW5 | 1/30/91 | 1130 | | EN423 | MEMM09 | MW5 | X | X | X | X | X | | | GROUND $H_2O$ |

TRANSFERRED BY (Signature): [signature] (Date): 1/30/91 (Time): 1200

RECEIVED BY (Signature): Al Blyweis (Date): 1/30/91 (Time): 1200

DISTRIBUTION
- WHITE: FIT SITE FILE
- YELLOW: FACILITY/OCCUPANT
- GREEN: FIT SAMPLE MANAGEMENT
- PINK: U.S. EPA

TITLE: GEN. MGR.

TELEPHONE: (616) 962-6109

# RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U. S. EPA ID NO: MID016724114

PROJ. ACCT. NO.: F-7305/FMI 05 [illegible]

TDD: F05-9001-041

SPLIT SAMPLES: ACCEPTED( ) DECLINED( ✓)

FACILITY/OCCUPANT NAME: [illegible] (MISSAM STEEL, INC.)

FACILITY/OCCUPANT ADDRESS: 75 N. 14th STREET SPRINGFIELD, MI. 49016

| SAMPLE NUMBER | DATE | TIME | SPLIT SAMPLES (✓) | OTR# | ITR# | DESCRIPTION OF SAMPLE LOCATIONS | SEMIVOLATILES (✓) | PESTICIDES/PCBS | VOLATILES | METALS | CYANIDE | | | MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | 11 30 | | EPA 23 | mEmm09 | MW 5 | X | X | X | X | X | | | Groundhead |
| | | | | | | | | | | | | | | |
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TRANSFERRED BY: [signature] 1/30/91 1200
(Signature) (Date) (Time)

RECEIVED BY: [signature] 1/30/91 1200
(Signature) (Date) (Time)

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

TITLE: GEN. MGR.

TELEPHONE: (616) 962-6109.

# RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U.S. EPA ID NO: MID 016 7 24114

PROJ. ACCT. NO.: F7130S/FMI 0[illegible]

TDD: FOS-9001-041

SPLIT SAMPLES: ACCEPTED( ) DECLINED( ✓)

FACILITY/OCCUPANT NAME: [illegible] (MISSAM STEEL, INC.)

FACILITY/OCCUPANT ADDRESS: 75 N. 14th STREET SPRINGFIELD, MI. 49016

| SAMPLE NUMBER | DATE | TIME | SPLIT SAMPLES (✓) | OTR# | ITR# | DESCRIPTION OF SAMPLE LOCATIONS | SEMIVOLATILES (✓) | PESTICIDES/PCBS | VOLATILES | METALS | CYANIDE | | | MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | 1130 | | EWA23 | mEmm09 | [illegible] | X | X | X | X | X | | | [illegible] |
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TRANSFERRED BY: [signature] 1/30/91 1200
(Signature) (Date) (Time)

RECEIVED BY: [signature] 1/30/91 1200
(Signature) (Date) (Time)

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

TITLE: GEN. MGR.

TELEPHONE: (616) 962-6109.

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**REGION 5**
**230 SOUTH DEARBORN ST.**
**CHICAGO, ILLINOIS 60604**

REPLY TO THE ATTENTION OF:

FIT Inspection Date: 1/29/91 & 1/30/91

CERCLIS Site Name: CENTRAL IRON & METAL, INC.

Site Address: 75 N. 14th STREET, SPRINGFIELD MI. 49016

Recipient Information: AL BRUYERS
Name

GENERAL MANAGER
Title

75 N. 14th ST.
Street Address

SPRINGFIELD MI 49016
City State Zip Code

(616) 962-6109.
Telephone Number

Ecology and Environment, Inc. has been retained by the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347 for the purpose of evaluating sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

A copy of the report regarding the inspection conducted at the above-referenced property will be forwarded by the U.S. EPA within 6 months. If a copy of the inspection report is not received within 6 months of the inspection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U.S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-041 ; PAN: FMI0358SB
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**REGION 5**
**230 SOUTH DEARBORN ST.**
**CHICAGO, ILLINOIS 60604**

REPLY TO THE ATTENTION OF:

FIT Inspection Date: 1/29/91 & 1/30/91

CERCLIS Site Name: CENTRAL IRON & METAL, INC.

Site Address: 75 N. 14th STREET, SPRINGFIELD, MI. 49016

Recipient Information: AL BRUNETS
Name

GENERAL MANAGER
Title

75 N. 14th ST.
Street Address

SPRINGFIELD MI. 49016
City State Zip Code

(616) 962-6109.
Telephone Number

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United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9101-041 ; PAN: FMI03585B
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

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230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-04 PAN: FMD0358SB
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

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U. S. EPA Identification Number MID016724114

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Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-04; PAN: FMI 0355 SB
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

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230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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Sample Collection Date: _____

Recipient Information: _____
Name

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Street Address

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City State Zip Code

_____
Telephone Number

Ecology and Environment, Inc. has been retained by the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347 for the purpose of evaluating sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

A copy of the sample analysis of samples collected from your property will be forwarded by the U.S. EPA within 6 months. If a copy of the sample analysis is not received within 6 months of the sample collection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U. S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-04 ; PAN: FMI03585B
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

Ecology and Environment, Inc. has been retained by the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347 for the purpose of evaluating sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

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U. S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-04; PAN: FMI035856
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

Ecology and Environment, Inc. has been retained by the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347 for the purpose of evaluating sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

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It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U. S. EPA Identification Number MID016724414

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-04; PAN: FMI035856
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

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U. S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No. F05-9001-041 ; PAN: FMF0358SB
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

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U. S. EPA Identification Number MID016724414

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-9001-04 ; PAN: FMID 358SB
Yellow: Recipient
Pink: U.S. EPA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

Sample Collection Date: _____

Recipient Information: _____
Name

_____
Street Address

_____
City State Zip Code

_____
Telephone Number

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A copy of the sample analysis of samples collected from your property will be forwarded by the U.S. EPA within 6 months. If a copy of the sample analysis is not received within 6 months of the sample collection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U. S. EPA Identification Number MID016724114

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No. F05-9001-041 ; PAN: FMID035856
Yellow: Recipient
Pink: U.S. EPA

NOT given to lab act on 17th by (1st) L. P. Davis mistake

# FIT SAMPLE PROPOSAL FORM REGION V

DATE FORM COMPLETED 10/12/90 PAN# FMI0358SB TDD# F05-9001-041 EPA I.D.# MID016724114

SITE NAME (PRINT) CENTRAL IRON & METAL, INC. CITY SPRINGFIELD STATE MICHIGAN

TEAM LEADER SLAUGHTER SAMPLER ELVEKROG DATE SENT TO HSCC

CASE # DRINKING WATER SAS # ORGANIC INORGANIC

## ROUTINE ANALYTICAL SERVICES (RAS)

| LOW WATERS FRACTION | MONITORING WELLS NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | | | | | | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

| LOW WATERS FRACTION | SURFACE WATERS NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | | | | | | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

| LOW SOILS/SEDIMENTS/SLUDGES FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | 9 | | – | 9 | WK OF 12/17/90 | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

## RESIDENTIAL/ MUNICIPAL WELL WATERS (DRINKING WATER SAMPLES)

| LOW DETECTION LIMITS/FAST TURN AROUND FRACTION | NUMBER OF FIELD SAMPLES+ | BLANKS+ | DUPLICATE= | TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|---|---|---|
| VOA | 6 | 1 | 1 | 8 | WK OF 12/17/90 | | | | | |
| ABNs | | | | | | | | | | |
| PEST/PCB | | | | | | | | | | |
| METALS | | | | | | | | | | |
| CN | | | | | | | | | | |

! SEE NEXT PAGE FOR SPECIAL ANALYTICAL SERVICE REQUEST FOR THIS SITE

SAS #

Date Changed for Central Iron to 12/17/90 – SAS written 11/16/90.

TE Central Iron & Metals PAGE 2

**********

ECIAL ANALYTICAL SERVICES

WATERS

CASE # SAS #

| FRACTION | NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|
| VOA | | | | | | | |
| ABNs | | | | | | | |
| PEST/PCB | | | | | | | |
| METALS | | | | | | | |
| CN | | | | | | | |
| MERCURY | | | | | | | |

**********

SOILS/SEDIMENTS/SLUDGES

CASE # SAS #

| FRACTION | NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|
| VOA | | | | | | | |
| ABNs | | | | | | | |
| PEST/PCB | | | | | | | |
| METALS | | | | | | | |
| CN | | | | | | | |

**********

(OTHERS) AIR SAMPLES-

CASE # SAS #

| FRACTION | NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL | EXPECTED DATE TO SAMPLE | LABORATORY NAME | NUMBER OF COOLERS SHIPPED | NUMBER OF SAMPLES SHIPPED | AIR BILL NUMBERS | DATE SHIPPED TO LAB |
|---|---|---|---|---|---|---|---|
| VOA | 30 + ~~3~~ 6 + 6~~3~~ = ~~39~~ 42 (REPLICATES) | 12/17/90 | | | | | |
| ABNs | | | | | | | |
| PEST/PCB | | | | | | | |
| METALS | | | | | | | |
| CN | | | | | | | |

3 DAYS SAMPLING. 5 LOCATIONS + 2D FTB/DAY.

NAL DATA RESULTS/A:SMOREQ

# SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW1 / MW1

SAMPLING DATE 1/29/91 SAMPLING TIME 1040

ORGANIC TRAFFIC NUMBER ENA 18

INORGANIC TRAFFIC NUMBER MEMM 04

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 oz. AMBER GLASS | EXTRACTABLES | 912 | 0211043 |
| 80 oz. AMBER GLASS | EXTRACTABLES | 913 | 0211043 |
| 40 mL VIAL | VOLATILES | 914 | B0171033 |
| 40 mL VIAL | VOLATILES | 915 | B0171033 |
| 1 LITER PLASTIC | METALS | 916 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 917 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

# SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW2 / MW2

SAMPLING DATE 1/29/91 SAMPLING TIME 1250

ORGANIC TRAFFIC NUMBER ENA 20

INORGANIC TRAFFIC NUMBER MEMM 06

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 OZ. AMBER GLASS | EXTRACTABLES | 924 | 0211043 |
| 80 OZ. AMBER GLASS | EXTRACTABLES | 925 | 0211043 |
| 40 ML VIAL | VOLATILES | 926 | B0171033 |
| 40 ML VIAL | VOLATILES | 927 | B0171033 |
| 1 LITER PLASTIC | METALS | 928 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 929 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW3 / MW3

SAMPLING DATE 1/29/91 SAMPLING TIME 1400

ORGANIC TRAFFIC NUMBER ENA 21

INORGANIC TRAFFIC NUMBER MEMM 07

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 8 OZ. AMBER GLASS | EXTRACTABLES | 936 | 0211043 |
| 8 OZ. AMBER GLASS | EXTRACTABLES | 937 | 0211043 |
| 40 ML VIAL | VOLATILES | 938 | B0171033 |
| 40 ML VIAL | VOLATILES | 939 | B0171033 |
| 1 LITER PLASTIC | METALS | 940 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 941 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW4 / MW4

SAMPLING DATE 1/29/91 SAMPLING TIME 1445

ORGANIC TRAFFIC NUMBER ENA 22

INORGANIC TRAFFIC NUMBER MEMM 08

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 OZ. AMBER GLASS | EXTRACTABLES | 942 | 0211043 |
| 80 OZ. AMBER GLASS | EXTRACTABLES | 943 | 0211043 |
| 40 mL VIAL | VOLATILES | 944 | B0171033 |
| 40 mL VIAL | VOLATILES | 945 | B0171033 |
| 1 LITER PLASTIC | METALS | 946 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 947 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: ORANGISH

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

# SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW5 / MW5

SAMPLING DATE 1/30/91 SAMPLING TIME 1130

ORGANIC TRAFFIC NUMBER ENA 23

INORGANIC TRAFFIC NUMBER MEMM 09

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 oz. AMBER GLASS | EXTRACTABLES | 948 | 0211043 |
| 80 oz. AMBER GLASS | EXTRACTABLES | 949 | 0211043 |
| 40 mL VIAL | VOLATILES | 950 | B0171033 |
| 40 mL VIAL | VOLATILES | 951 | B0171033 |
| 1 LITER PLASTIC | METALS | 952 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 953 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MW1 / DUPLICATE

SAMPLING DATE 1/29/91 SAMPLING TIME 1040

ORGANIC TRAFFIC NUMBER ENA 19

INORGANIC TRAFFIC NUMBER MEMM05

| BOTTLE | ANALYSIS | TAG NUMBERS S-043- | LOT NUMBER |
|---|---|---|---|
| 80 oz. AMBER GLASS | EXTRACTABLES | 918 | 0211043 |
| 80 oz. AMBER GLASS | EXTRACTABLES | 919 | 0211043 |
| 40 mL VIAL | VOLATILES | 920 | B0171033 |
| 40 mL VIAL | VOLATILES | 921 | B0171033 |
| 1 LITER PLASTIC | METALS | 922 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 923 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION BLK/NA

ABSOPURE DISTILLED $H_2O$, PLYMOUTH, MI #4612126007

SAMPLING DATE 1/29/91 SAMPLING TIME 1000

ORGANIC TRAFFIC NUMBER EMA 25

INORGANIC TRAFFIC NUMBER MEmm 11

| BOTTLE | ANALYSIS | TAG NUMBERS 5-043- | LOT NUMBER |
|---|---|---|---|
| 80 OZ. AMBER GLASS | EXTRACTABLES | 960 | 0211043 |
| 80 OZ. AMBER GLASS | EXTRACTABLES | 961 | 0211043 |
| 40mL VIAL | VOLATILES | 962 | B0171033 |
| 40mL VIAL | VOLATILES | 963 | B0171033 |
| 1 LITER PLASTIC | METALS | 964 | 0319023 |
| 1 LITER PLASTIC | CYANIDE | 965 | 0319023 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

# SAMPLE DESCRIPTION

SITE NAME/TDD# CENTRAL IRON & METAL

CASE NUMBER 15811

SAMPLE #/STATION LOCATION MSD/MW2

SAMPLING DATE 1/29/91 SAMPLING TIME 1250

ORGANIC TRAFFIC NUMBER ENA 20

INORGANIC TRAFFIC NUMBER ~~ME~~ NOT APPLICABLE

| BOTTLE | ANALYSIS | TAG NUMBERS 5-043- | LOT NUMBER |
|---|---|---|---|
| 8 OZ. AMBER GLASS | EXTRACTABLES | 930 | 0211043 |
| 8 OZ. AMBER GLASS | EXTRACTABLES | 931 | 0211043 |
| 40 mL VIAL | VOLATILES | 932 | B0171033 |
| 40 mL VIAL | VOLATILES | 933 | B0171033 |
| 40 mL VIAL | VOLATILES | 934 | B0171033 |
| 40 mL VIAL | VOLATILES | 935 | B0171033 |
| | | | |
| | | | |

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: CLEAR

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: NONE OBSERVED.

INSTRUMENT READINGS

pH NOT AVAILABLE

CONDUCTIVITY NOT AVAILABLE

TEMPERATURE NOT AVAILABLE

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Organic Traffic Report
(For CLP Use Only)

Case Number: 15811
SAS No. (if applicable): NA

1. Type of Activity (Check one): ENF, ER, ESI, NPLD, O&M, PA, RA, RD, RIFS, SI, ST, STPA, STSI, Other (Specify)

2. Region Number: V
Sampling Co.: FTS
Sampler (Name): C. Schultz

4. Date Shipped: 11/30/91
Airbill Number: 9157647542
Carrier: F

Non-Superfund Program

Site Name: Central Iron & Metal

City, State: Springfield, MI
Site Spill ID: NA

3. Ship To: Hazelton Labs
515 Science Dr.
UW Research Park
Madison, WI 53711
Attn: Dave Hills

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

| CLP Sample Number (From labels) | (A) Sample Description (From box 1) | (B) Concentration L=low M=med H=high | (C) RAS Analysis VOA | BNA | Pest/PCB | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding CLP Inorganic Sample Number |
|---|---|---|---|---|---|---|---|---|---|
| EMA 23 | 2 | L | X | X | X | | MW5 | 11/30/91 1130 | MEMM09 |
| ~~EMA 24~~ | ~~2~~ | ~~L~~ | ~~X~~ | ~~X~~ | ~~X~~ | ~~O/D~~ | ~~MW6~~ | ~~11/30/91 1145~~ | ~~MEMM10~~ |

Shipment is Complete

EPA Form 9110-2 (8-88) Replaces EPA Form 2075-7, which may be used. Blue - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler # 138

# CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: FMI0358
PROJECT NAME: FOS-9001-041 / 15811
SAMPLERS: (Signature) C. Schultz

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | ABN/PEST/PCB-8002 | VOA/HCL/40 mL | | | | | REMARKS TAG # | LOW CONC. MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENA23 | 1/30/91 | 1130 | | X | mw5 | 4 | 2 | 2 | | | | | 5-043948-51 | GROUND H2O |
| ~~ENA24~~ | ~~1/30/91~~ | ~~1145~~ | | ~~X~~ | ~~mw6 VOIX~~ | ~~4~~ | ~~2~~ | ~~2~~ | | | | | ~~5-043954-57~~ | ~~GROUND H2O~~ CS |

LOT # 40mL - B0171033
LOT # 8002 - 0211043
OTR IN COOLER # 138

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Cynthia Schultz | 1/30/91 1300 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks | |
| | | | | Shipped Fed Ex to HAZLET Custody Seals 129380-1 Airbill # 9157647542 | |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 08195

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Inorganic Traffic Report
(For CLP Use Only)

Case Number: 15811
SAS No. (if applicable): NA

1. Type of Activity (Check one)
☐ ENF ☐ NPLC ☐ RA ☒ SI ☐ STSI
☐ ER ☐ O&M ☐ RD ☐ ST ☐ Other (Specify)
☐ ESI ☐ PA ☐ RIFS ☐ STPA

Non-Superfund Program

Site Name: Central Iron & Metal
City, State: Springfield ~~Battlecreek~~ MI
Site Spill ID: NA

2. Region Number: V
Sampling Co.: FTS
Sampler (Name): C. Schultz

3. Ship To: Columbia Analytical
1317 S. 13th St
P.O. Box 479
Kelso, WA 98626
Attn: Fran Adair

4. Date Shipped: 11/30/91
Carrier: F
Airbill Number: 9157647553

Double volume required for matrix spike/duplicate aqueous sample?
Ship medium and high concentration samples in paint cans.
See reverse for additional instructions.

5. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

| CLP Sample Number (From labels) | (A) Sample Description (From box 5) | (B) Concentration L=low M=med H=high | (C) List Preservative Used/Vol | (D) RAS Analysis: Total or Dissolved Metals | Cyanide | Low Conc. Sow: Nitrate/Nitrite | Fluoride | (E) Special Handling | (F) Station Location | (G) Date/Time of Sample Collection | (H) Corresponding Organic Sample Number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MEMM09 | 2 | L | HNO3/NaOH | X | X | | | | MW5 | 11/30/91 1130 | ENA23 |
| ~~MEMM10~~ | ~~2~~ | ~~L~~ | ~~HNO3/NaOH~~ | ~~X~~ | ~~X~~ | ~~VOID~~ | | | ~~MW6~~ | ~~11/30/91 1145~~ | ~~ENA24~~ |

Shipment is Complete

EPA Form 9110-1 (11-89) Replaces EPA Form 2075-6, which may be used. Green - Region Copy Pink - SMO Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler #2001

# CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: FM10358
PROJECT NAME: F05-9001-041/15811
SAMPLERS: (Signature) C. Schultz

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | Metals (HNO3) 1 Liter Plastic | Cyanide (NaOH) 1 Liter Plastic | | | | | TAG # | REMARKS LOW CONC. MATRIX. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mEMM09 | 11/30/91 | 1130 | | X | MW5 | 2 | 1 | 1 | | | | | S-043952-3 | groundH2O |
| ~~mEMM10~~ | ~~11/30/91~~ | ~~1145~~ | | ~~X~~ | ~~MW6 VOID~~ | ~~2~~ | ~~1~~ | ~~1~~ | | | | | ~~S-043958-9~~ | ~~groundH2O~~ |

LOT #: 0319023

METALS HAVE BEEN FILTERED

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Cynthia Schultz | 11/30/91 1300 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks | |
| | | | | | Shipped Fed Ex to Columbia<br>Custody Seals IZ 9382-3<br>AIRBILL # 9157647553 |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5 08406

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler # 276

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

# CHAIN OF CUSTODY RECORD

PROJ. NO.: FMI0358
PROJECT NAME: FOS-9001-041 | 15811
SAMPLERS: (Signature) C. Schultz

| STA. NO. | DATE | TIME | COMP | GRAB | STATION LOCATION | NO. OF CONTAINERS | ABN/PEST/PCB-80OZ | VOA(HCL)-40mL | | | | | TAG # | REMARKS LOW CONC. MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENA22 | 1/29/91 | 1445 | | X | MW4 | 4 | 2 | 2 | | | | | 5-043942-45 | GROUNDWATER |
| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | LOT # 40 mL - BD171033 | |
| | | | | | | | | | | | | | LOT # 80 OZ - 0211043 | |
| | | | | | | | | | | | | | OTR IN COOLER 1002 | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Cynthia Schultz | 1/29/91 1645 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks | Shipped Fed Ex to HAZLET Custody Seal 129378-9 Airbill # 9157647542 05 |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 08194

VIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler # ___

# CHAIN OF CUSTODY RECORD

Chicago, Illinois

PROJ. NO.: FM10358
PROJECT NAME: FOS-9011-041 / 15811
SAMPLERS: (Signature) C. Schultz

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | Metals (HNO3) Water Plastic | Cyanide (NaOH) Water Plastic | | | | | TAG #'S | REMARKS: LOW CONC. MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEMM04 | 1/29/91 | 1040 | | X | MW1 | 2 | 1 | 1 | | | | | 5-043916-7 | GROUND $H_2O$ |
| MEMM05 | 1/29/91 | 1040 | | X | DUP | 2 | 1 | 1 | | | | | 5-043922-3 | GROUND $H_2O$ |
| MEMM11 | 1/29/91 | 1000 | | X | BLANK | 2 | 1 | 1 | | | | | 5-043964-5 | DISTILLED $H_2O$ |
| MEMM06 | 1/29/91 | 1250 | | X | MW2 | 2 | 1 | 1 | | | | | 5-043928-9 | GROUND $H_2O$ |
| MEMM07 | 1/29/91 | 1400 | | X | MW3 | 2 | 1 | 1 | | | | | 5-043940-1 | GROUND $H_2O$ |
| MEMM08 | 1/29/91 | 1445 | | X | MW4 | 2 | 1 | 1 | | | | | 5-043946-7 | GROUND $H_2O$ |

LOT # 0319023

METALS HAVE BEEN FILTERED

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Cynthia Schultz | 1/29/91 1645 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks | Shipped Fed Ex to COLUMBIA Custody Seals 129497-129498 AIRBILL # 915 7647494 |

Pink — Coordinator Field Files; Yellow — Laboratory File

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler# 101

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

# CHAIN OF CUSTODY RECORD

PROJ. NO.: FMI0358
PROJECT NAME: F05-9001-041/15811
SAMPLERS: (Signature) C. Schultz

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | ABN/PEST/PCB-8 OZ | VOA (HCL) 40 ml | | | | | REMARKS TAG# | LOW CONC MATRIX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENA20 | 1/29/91 | 1250 | | X | MW2 & MSD | 10 | 4 | 6 | | | | | 5-043924-27 | GROUND H2O |
| ENA21 | 1/29/91 | 1400 | | X | MW3 | 4 | 2 | 2 | | | | | ↳ & 5-043930-35 | GROUND H2O |
| | | | | | | | | | | | | | ↳ 5-043936-39 | GROUND H2O |

LOT # 8 OZ - 0211043
LOT # 4 OZ - 80171033

GTR IN COOLER# 1002

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| C. Schultz | 1/29/91 1645 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks | |
| | | | | Shipped Fed Ex to HAZLET Custody Seals 129376-7 Airbill# 915764754205 | |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 05633

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler # 1002

# CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: FMI 0358
PROJECT NAME: F05-9001-041 / 15811
SAMPLERS: (Signature) C. Schultz

| STA. NO. | DATE | TIME | COMP. | GRAB | STATION LOCATION | NO. OF CONTAINERS | ABN/PST/PCB 80 oz | VOA (HCL) 40 ml | | | | | TAG # | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | LOW CONC. MATRIX |
| ENA18 | 1/29/91 | 1040 | | X | MW1 | 4 | 2 | 2 | | | | | 5-043912-15 | GROUND H2O |
| ENA 19 | 1/29/91 | 1040 | | X | DUP | 4 | 2 | 2 | | | | | 5-043918-21 | GROUND H2O |
| ENA 25 | 1/29/91 | 1000 | | X | BLANK | 4 | 2 | 2 | | | | | 5-043960-63 | GROUND H2O |
| | | | | | | | | | | | | | LOT # 80 oz - 02 11 043 | |
| | | | | | | | | | | | | | LOT # 40 ml - B0171033 | |
| | | | | | | | | | | | | | OTR IN COOLER THIS | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Cynthia Schultz | 1/29/91 1645 | | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Remarks | |
| | | | | Shipped Fed Ex to HAZLET<br>Custody Seals 129374-5<br>Airbill # 9157847505 | |

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

# Organic Traffic Report
(For CLP Use Only)

Case Number: 15811
SAS No. (if applicable): NA

1. Type of Activity (Check one): ENF, ER, ESI, NPLD, O&M, PA, RA, RD, RIFS, SI, ST, STPA, STSI, Other (Specify)

Non-Superfund Program

Site Name: Central Iron & Metal

City, State: Springfield, MI

Site Spill ID: NA

2. Region Number: V

Sampling Co.: FIT

Sampler (Name): C. Schultz

3. Ship To: HAZELTON LABS, 515 SCIENCE DRIVE, UW Research Park, Madison, WI 53711, Attn: Dave Hill

4. Date Shipped: 1/29/91

Airbill Number: 9157647505

Carrier: F

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description (Enter in Column A):
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

| CLP Sample Number (From labels) | (A) Sample Description (From box 1) | (B) Concentration L=low M=med H=high | (C) RAS Analysis VOA | BNA | Pest/PCB | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding CLP Inorganic Sample Number |
|---|---|---|---|---|---|---|---|---|---|
| EVA18 | 2 | L | X | X | X | | MW1 | 1/29/91 1040 | MEMM04 |
| EVA19 | 2 | L | X | X | X | | DUP | 1/29/91 1040 | MEMM05 |
| EVA20 | 2 | L | X | X | X | MSD | MW2 | 1/29/91 1250 | MEMM06 |
| EVA25 | 4 | L | X | X | X | BLANK | BLK | 1/29/91 1000 | MEMM11 |
| EVA21 | 2 | L | X | X | X | | MW3 | 1/29/91 1400 | MEMM07 |
| EVA22 | 2 | L | X | X | X | | MW4 | 1/29/91 1445 | MEMM08 |

Shipment is not complete

EPA Form 9110-2 (8-88) Replaces EPA Form 2075-7, which may be used. Blue - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

EPA

# Inorganic Traffic Report
(For CLP Use Only)

Case Number: 15811
SAS No. (if applicable): NA

1. Type of Activity (Check one): ENF, NPLD, RA, [X] SI, STSI, ER, O&M, RD, ST, Other (Specify), ESI, PA, RIFS, STPA

2. Region Number: V
Sampling Co.: FIT
Sampler (Name): C. Schultz

4. Date Shipped: 1/29/91
Airbill Number: 9157647494
Carrier: F

5. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

Non-Superfund Program

Site Name: Central Iron & Metal
City, State: ~~Battlecreek, MI~~ SPRINGFIELD, WA
Site Spill ID: NA

3. Ship To:
Columbia Analytical Svcs
1317 S. 13th St.
P.O. Box 479
Kelso, WA 98626
Attn: Fran Adair

Double volume required for matrix spike/duplicate aqueous sample.
Ship medium and high concentration samples in paint cans.
See reverse for additional instructions.

| CLP Sample Number (From labels) | (A) Sample Description (From box 1) | (B) Concentration L=low M=med H=high | (C) RAS Analysis: Total Metals | (C) RAS Analysis: Cyanide | (D) Special Handling | (E) Station Location | (F) Date/Time of Sample Collection | (G) Corresponding Organic Sample Number |
|---|---|---|---|---|---|---|---|---|
| MEMM 04 | 2 | L | X | X | | MW1 | 1/29/91 1040 | ENA18 |
| MEMM 06 | 2 | L | X | X | | MW2 | 1/29/91 1250 | ENA 20 |
| MEMM 05 | 2 | L | X | X | | DUP | 1/29/91 1040 | ENA 19 |
| MEMM 11 | 4 | L | X | X | BLANK | BLK | 1/29/91 1000 | ENA 25 |
| MEMM 07 | 2 | L | X | X | | MW3 | 1/29/91 1400 | ENA 21 |
| MEMM 08 | 2 | L | X | X | | MW4 | 1/29/91 1445 | ENA 22 |

SHIPMENT IS NOT COMPLETE

EPA Form 9110.1 (9-88) Replaces EPA Form 2075-6, which may be used. Green - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

FEDERAL EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 9157647494

249M 9157647494

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3

Date: 1/29/91

1 From (Your Name) Please Print: Cynthia W. Schultz

Your Phone Number (Very Important): 312-779-7763

Company: ECOLOGY & ENVIRONMENT

Department/Floor No.:

Street Address: 5634 NORTHWEST HWY

City: CHICAGO State: IL ZIP Required: 60646

2 To (Recipient's Name) Please Print: Fran Adair

Recipient's Phone Number (Very Important): 206577-7222

Company: Columbia Analytical Svc's

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 1317 S. 13th St. (P.O. Box 479)

City: Kelso State: WA ZIP Required: 98626

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): F7130505, F7A1035 8567, 24

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card Exp. Date
5 [ ] Cash/Check Acct./Credit Card No.

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

4 SERVICES (Check only one box)

| | | | |
|---|---|---|---|
| Priority Overnight Service (Delivery by next business morning†) | | Standard Overnight Service (Delivery by next business afternoon†) | |
| [X] | YOUR PACKAGING | [ ] | |
| [ ] 16 | FEDEX LETTER* | [ ] 56 | FEDEX LETTER* |
| [ ] 12 | FEDEX PAK* | [ ] 52 | FEDEX PAK* |
| [ ] 13 | FEDEX BOX | [ ] 53 | FEDEX BOX |
| [ ] 14 | FEDEX TUBE | [ ] 54 | FEDEX TUBE |
| Economy Two-Day Service (formerly Standard Air) (Delivery by second business day†) | | Heavyweight Service (for Extra Large or any package over 150 lbs.) | |
| [ ] 30 | ECONOMY TWO-DAY SVC. | [ ] 70 | HEAVYWEIGHT** |
| | | [ ] 80 | DEFERRED HEAVYWEIGHT** |

† Delivery commitment may be later in some areas.
*Declared Value Limit $100.
**Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)

| | | | PACKAGES | WEIGHT (in Pounds) Only | YOUR DECLARED VALUE (See right) |
|---|---|---|---|---|---|
| 1 | [X] | HOLD FOR PICK-UP (Fill in Box H) | 1 | 62 | |
| 2 | [X] | DELIVER WEEKDAY | | | |
| 3 | [ ] | DELIVER SATURDAY (Extra charge) (Not available to all locations) | | | |
| 4 | [ ] | DANGEROUS GOODS (Extra charge) | | | |
| 5 | [ ] | | | | |
| 6 | [ ] | DRY ICE ____ Lbs. | Total | Total | Total |
| 7 | [ ] | OTHER SPECIAL SERVICE | | | |
| 8 | [ ] | | | | |
| 9 | [ ] | SATURDAY PICK-UP (Extra charge) | | | |
| 10 | [ ] | | | | |
| 11 | [ ] | DESCRIPTION | | | |
| 12 | [ ] | HOLIDAY DELIVERY (If offered) (Extra charge) | | | |

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.

Received At:
1 [ ] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B.S.C. 5 [ ] Station

FedEx Emp. No.: 4427

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00.

In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

5 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature:

Date/Time: 1/29 [illegible]

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 8/90
PART #119501 FXEM 8/90
FORMAT #041

041

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SENDER'S COPY

SENDER'S COPY

FEDERAL EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 9157647505

249M 9157647505

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3
Date: 1/29/91

1 From (Your Name) Please Print: C. Schultz
Your Phone Number (Very Important): 812-775-7763
Company: ECOLOGY & ENVIRONMENT
Department/Floor No.:
Street Address: 5634 NORTHWEST HWY
City: CHICAGO State: IL ZIP Required: 60646

2 To (Recipient's Name) Please Print: Dave Hills
Recipient's Phone Number (Very Important): 608 241-4471
Company: Hazelton Labs
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip® Codes.): 515 Science Dr. VW Research Pa
City: Madison State: WI ZIP Required: 53711

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): R77305-05, FMI 0358SBI, 24

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check Acct./Credit Card No: Exp. Date: /

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
11 [X] YOUR PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
51 [ ]
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day Service (formerly Standard Air) (Delivery by second business day†)
30 [ ] ECONOMY TWO-DAY SVC.

Heavyweight Service (for Extra Large or any package over 150 lbs.)
70 [ ] HEAVYWEIGHT**
80 [ ] DEFERRED HEAVYWEIGHT**

†Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE _____ Lbs.
7 [ ] OTHER SPECIAL SERVICE _____
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ] DESCRIPTION
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

| PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE (See right) |
|---|---|---|
| 1 | 81 | |
| 1 | 53 | |
| 1 | 80 | |
| Total 3 | Total 214 | Total |

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs.

Received At: 1 [ ] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] B.S.C. 5 [X] Station

FedEx Emp. No.: 1270
Date/Time: 1-29-91 1630

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00.

In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

5 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature:

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 8/90
PART #119501 FXEM 8/90
FORMAT #041

041

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USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 9157647542

249H 9157647542

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3
Date: 1/30/91

**1** From (Your Name) Please Print: Cindy Schultz
Your Phone Number (Very Important): 812-775-7763
Company: ECOLOGY & ENVIRONMENT
Department/Floor No.:
Street Address: 9634 NORTHWEST HWY
City: CHICAGO State: IL ZIP Required: 60646

**2** To (Recipient's Name) Please Print: Dave Hills
Recipient's Phone Number (Very Important): 608 241-4471
Company: HAZELTON LABS
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip ®. Codes.): 515 Science Drive UW Research Park
City: Madison State: WI ZIP Required: 53711

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice): FT7305-05, FMI-0558SBI, 24

**H** IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

**3** PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check
Acct./Credit Card No.: Exp. Date:

**4** SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
- 11 [X] YOUR PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
- 51 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day Service (formerly Standard Air) (Delivery by second business day†)
- 30 [ ] ECONOMY TWO-DAY SVC.

Heavyweight Service (for Extra Large or any package over 150 lbs.)
- 70 [ ] HEAVYWEIGHT**
- 80 [ ] DEFERRED HEAVYWEIGHT**

†Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- 3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE ____ Lbs.
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- 10 [ ]
- 11 [ ] DESCRIPTION
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

| Packages | Weight in Pounds Only | Your Declared Value (See right) |
|---|---|---|
| 1 | 54 | |
| Total 1 | Total 54 | Total |

DIM SHIPMENT (Chargeable Weight) ____ lbs.

Received At: 1 [ ] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] SGC 5 [X] Station

FedEx Emp. No.: 4412 Date/Time: 1-30-1245

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00.

In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

**5** Release Signature:

Federal Express Use
- Base Charges
- Declared Value Charge
- Other 1
- Other 2
- Total Charges

REVISION DATE 8/90
PART #119501 FXEM 8/90
FORMAT #041

041

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PRINTED IN U.S.A.

SENDER'S COPY

FEDERAL EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 9157647553

249M 9157647553

SENDER'S COPY

| Sender's Federal Express Account Number | Date |
|---|---|
| 1270-9910-3 | 1/30/91 |

| 1 From (Your Name) Please Print | Your Phone Number (Very Important) | 2 To (Recipient's Name) Please Print | Recipient's Phone Number (Very Important) |
|---|---|---|---|
| Cynthia Schultz | 312-775-7763 | Fran Adair | (206) 577-7222 |
| Company: ECOLOGY & ENVIRONMENT | Department/Floor No. | Company: Columbia Analytical Svc's | Department/Floor No. |
| Street Address: 5634 NORTHWEST HWY | | Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip® Codes.): 1317 S. 13th St (P.O. Box 479) | |
| City: CHICAGO State: IL | ZIP Required: 60646 | City: Kelso State: WA | ZIP Required: 98026 |

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): P71305-05 FMI0358SBI, 24

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check Acct./Credit Card No. Exp. Date /

4 SERVICES (Check only one box)

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- 30 [ ] ECONOMY TWO-DAY SVC.

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- 70 [ ] HEAVYWEIGHT **
- 80 [ ] DEFERRED HEAVYWEIGHT **

†Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE _____ Lbs.
- 7 [ ] OTHER SPECIAL SERVICE _____
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- 10 [ ]
- 11 [ ] DESCRIPTION
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

| PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE (See right) |
|---|---|---|
| 1 | 45 | |
| Total 1 | Total 45 | Total |

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs.

Received At
1 [ ] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B.S.C. 5 [ ] Station

FedEx Emp. No. 44227 Date/Time 1-30 1245

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00.

In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

5 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature:

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 8/90
PART #119501 FXEM 8/90
FORMAT #041
041

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SENDER'S COPY

XC: Hogarth
Klepper → Greg D.
Sent 7/2/84 xc: McKay – is this related to Verona?

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

**DEPARTMENT OF PUBLIC HEALTH**

3500 N. LOGAN
P.O. BOX 30035, LANSING, MICHIGAN 48909
GLORIA R. SMITH, Ph.D., M.P.H., F.A.A.N., Director

Calhoun Co.

June 25, 1984

RECEIVED
JUN 28 1984
ADMINISTRATION

Ronald Blyvis, President
Central Iron & Metal, Inc.
75 North 14th Street
Battle Creek, Michigan 49016

Subject: Drinking Water Quality Advisory

Dear Mr. Blyvis:

The Michigan Department of Public Health analyses of drinking water samples collected from the Central Iron & Metal, Inc. plant, 75 14th Street, indicates the presence of 1,1,1-trichloroethane (TCEA). The samples collected by the Calhoun County Health Department on 3/7/84 and 5/13/84 indicated concentrations of 1,1,1-TCEA at 1 ppb and 2 ppb respectively.

Although the concentration of this chemical is low and does not present a significant health threat, precautionary measures are advised. Other affected individuals in your area have taken similar precautions due to the unknown status of area groundwater quality. The dynamic nature of groundwater and its contaminants does not allow us to confidently predict what your water quality may be in the future.

It is recommended that your company inform its employees of this exposure, post notices at drinking fountains and other points used for water consumption and provide an approved alternate drinking water supply. Please contact the Calhoun County Health Department for approval of your alternative drinking water system.

This advisory is in effect until your plant is served by an approved permanent drinking water supply or until additional information becomes available that would support the lifting of this advisory.

Sincerely,

Joseph Lovato

RECEIVED
JUN 29 1984
GOD-REMEDIAL ACTION

Joseph L. Lovato, Geologist
Ground Water Quality Control Section
Division of Water Supply
Bureau of Environmental & Occupational Health

JLL:br
cc: Calhoun County Health Department, Environmental Health
cc: Center for Environmental Health Sciences, MDPH
cc: Irv Davis, Occupational Health, MDPH
cc: Rick Johns, Chief, GWQD, MDNR
cc: Sheryl Thelen, Division of Water Supply, MDPH

RECEIVED
JUN 28 1984
ADMINISTRATION

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

# M E M O R A N D U M

TO: File
FROM: Kirsten A. Elvekrog
DATE: January 18, 1991
SUBJECT: Sampling Paperwork Errors
Central Iron and Metal

The incorrect airbill number was recorded on the organic traffic report. The correct Airbill Number is 9295289286.

KAE:ja

recycled paper

FIELD PHOTOGRAPHY LOG SHEET



DATE 7/31/84

TIME ~ 12:26 A.M. (P.M.)

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW (SW) WSW
W WNW NW NNW

WEATHER sunny hazy
WARM ~85°F

SITE MI0358

TDD# R5-8303-3C

PHOTOGRAPHED BY:
Tom Pachowicz

SAMPLE ID# (if applicable)

DESCRIPTION: scrap piles

DATE 7/31/84

TIME ~ 12:27 A.M. (P.M.)

DIRECTION: N NNE NE ENE
E ESE SE SSE
(S) SSW SW WSW
W WNW NW NNW

WEATHER sunny hazy
WARM ~85°F

SITE MI0358

TDD# R5-8303-3C

PHOTOGRAPHED BY:
Tom Pachowicz

SAMPLE ID# (if applicable)

DESCRIPTION: scrap piles, cranes

FIELD PHOTOGRAPHY LOG SHEET

Page

DATE 7/31/84

TIME ~ 12:29 A.M. (P.M.)

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
(W) WNW NW NNW

WEATHER Sunny hazy
WARM ~ 85°F

SITE MI0358

TDD# R5-8303-3C

PHOTOGRAPHED BY:
Tom Pachowicz

SAMPLE ID# (if applicable)

DESCRIPTION: top of stained "dirt" pile behind fence

DATE 7/31/84

TIME ~ 12:30 A.M. (P.M.)

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW (NW) NNW

WEATHER Sunny hazy
WARM ~ 85°F

SITE MI0358

TDD# R5-8303-3C

PHOTOGRAPHED BY:
Tom Pachowicz

SAMPLE ID# (if applicable)

DESCRIPTION: entrance to Central Iron & Metal

FIELD PHOTOGRAPHY LOG SHEET

Page _____

DATE 7/31/84

TIME ~ 12:35 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER sunny hazy
WARM ~85°F

SITE MI 0358

TDD# R5-8303-C

PHOTOGRAPHED BY:
Tom Pachowicz

SAMPLE ID# (if applicable)

DESCRIPTION: scrap piles

DATE _____

TIME _____ A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER _____

SITE _____

TDD# _____

PHOTOGRAPHED BY:

SAMPLE ID# (if applicable)

PHOTO

DESCRIPTION: _____

# INVESTIGATION REPORT

| | | | | |
|---|---|---|---|---|
| Department of Natural Resources<br>Law Enforcement Division | 1. CITY: Calhoun | 2. DATE OF REPORT: 12/05/8[illegible] | 3. FILE NO.: 065-37-33 | 4. ACT NO.: 60 |
| | 5. TOWNSHIP: | 6. DATE OF ORIGINAL: [illegible]/07/[illegible] | ☐ Original Investigation<br>☒ Supplementary Investigation | |
| 8. DIVISION OR DISTRICT: Law D 13 | 9. CITY OR VILLAGE: Springfield | 10. PEAS NO.: | | |
| 11. TYPE OF SITE: Salvage Company | | 12. LEGAL LAND DESCRIPTIONS: | | |
| 13. NAME OF SITE / FACILITY / FIRM: Central Iron and Metal Co., Inc. | | | | |
| 14. ADDRESS: | | | | |
| 15. CONTACTED: | | 16. POSITION: | 17. PHONE NUMBER: | |
| 18. ORIGIN OF CASE: | | 19. INVESTIGATING OFFICERS: Sgt. Rumsey | | |

Plea

On 12/01/83, Central Iron and Metal Company, Inc., entered a non contest plea to the charge of illegal disposal of PCBs. District Judge Allen Garbrcht took the case under advisement until June 1, 1984.

The company has paid $400for cost of storage and disposal of PCBs related to this case.

This is East of Eaton Corp in Springfield

Trans

Rumsey

| | |
|---|---|
| 20. INVESTIGATING OFFICER'S SIGNATURE: | 21. REVIEWING OFFICER: |
| 22. COPIES PROVIDED TO: Lt. Murphy, Lt. Schmeler, Lt. Blanchard, Cyle Rowell, EFD | ☐ Open<br>☒ Closed |

R 92

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

| SAS NUMBER |
|---|
| |

Approved by: SPECIAL ANALYTICAL SERVICE
Client Request

[ ] Regional Transmittal [ ] Telephone Request

A. EPA Region/Client: Region V/FIT

B. RSCC Representative: JAN PELS

C. Telephone Number: (312) 353-2720

D. Date of Request: November 16, 1990

E. Site Name: Central Iron and Metal
Springfield, MI.
EPA ID: MID016724114

Please provide below description of your request for Special Analytical Service under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in a delay in the processing of your request. Please continue response on additional sheet or attach supplementary information as needed.

1. General description of analytical service requested:
Analysis of air samples for specified volatile organics using EPA Method TO2. Cartridges are to be analyzed separately unless specified by field personnel.

2. Definition and number of work units involved (specify whether whole samples or fractions; whether organics or inorganics; whether aqueous or soil and sediments; and whether low, medium or high concentration):
Analyze 48 low level air samples for target volatile organic compounds (Table 1) and tentatively identified compounds (TICs).
30 samples + 15 QC tubes + 3 Blank tubes = total 48 tubes (field personnel will supply tubes).

3. Purpose of analysis (specify whether Superfund (enforcement or remedial action), RCRA, NPDES, ETC.):
SUPERFUND---SITE INSPECTION

4. Estimated date(s) of collection: December 17, 1990 .

5. Estimate date(s) and method of shipment:
SHIPMENT BY FEDERAL EXPRESS for week of December 17, 1990 .

6. Number of days analysis and data required after laboratory receipt of sample:
   THE LABORATORY MUST START THE ANALYSIS WITH IN 7 DAYS OF SAMPLE RECEIPT
   THE LAB MUST REPORT RESULTS WITHIN 30 DAYS OF RECEIPT OF SAMPLES TO CPMS.

7. Analytical protocol required (attach copy if other than a protocol currently used in this program:
   Thermal desorption of a CMS cartridge onto a cryogenic focusing trap, followed by desorption of the cryogenic trap and GC/MS analysis of the volatile organic compounds (VOCs). See the attached guideline for GC/MS tuning, analytical procedures, and the target compound list (Table 1), using EPA Method TO2.

8. Special technical instructions (if outside protocol requirements, specify compound names, CAS numbers, detection limits etc.):
   FIT will supply 48 stainless steel sorbent Carbotrap 300 tubes (1/4" o.d. x 7"). Deviations from the method for analysis will not be allowed without approval from the Regional Representative. Verify the detection limits through cartridge spiked with all target compounds at the concentration of the detection limits. See Attachment 1 for additional details.

9. Analytical results required(if known, specify format for data sheets, QA/QC reports, Chain-of-Custody documentation, etc.
   All documentation requirements of the CLP organics statement of work (SOW) (3/90) apply, including copies of the chain-of-custody forms received at the laboratory with the samples, initial and continuing calibration sheets, OADS, surrogate recovery summary, internal standard summary, and matrix spike/matrix spike duplicate (MS/MSD) recovery summary. Non-target compounds detected will be identified, quantitated, and reported as per attachment. All results from analysis of blank cartridges will also be reported. Provide the detection limits verification data as discussed above in Attachment 1.

10. Other(use additional sheets or attach supplementary information, as needed):

11. Name of sampling/shipping contact: ANDREA DAVIS
    Phone: (312) 663-9415

12. DATA REQUIREMENTS

| PARAMETER OR CONCENTRATION | DETECTION LIMIT | ± PRECISION DESIRED |
|---|---|---|
| Target VOCs (Table 1 of SAS) | 5 ng/tube | +/-25% |

13. QC Requirements

| Audits Required | Frequency of audits | LIMITS (Percent or Concentration) |
|---|---|---|
| Method Blank | Daily, at beginning and every 12 hour shift | <MDL |
| Continuing Calibration Check | Daily, at beginning and every 12 hour shift | <25% |
| Field duplicate | 1 per group of 10 samples | 75-125% recovery |
| MS & MSD for in lab blank cartridges | 1 per group of 10 samples | 75-125% recovery +/-25%RPD |
| Surrogate spike | 1 per group of 10 samples | 75-125% recovery |
| Laboratory blank | 1 per day | Document with data package |

14. Action Required if Limits are Exceed:

CONTACT REGION V RSCC JAN PELS (312) 353-2720
CHUCK ELLY (312) 353-9087

IF ANY OUTLIERS OCCUR OR OTHER PROBLEMS (SUCH AS THE NEED FOR DILUTIONS), CONTACT THE RSCC (JAN PELS) BEFORE PROCEEDING.

Please return this request to the Sample Management Office as soon as possible to expedite processing of your request for special analytical service. Should you have any questions or need any assistance, please contact your Regional representative at the Sample Management Office.

TABLE 1

TARGET COMPOUND LIST AND METHOD DETECTION LIMIT

| Parameter | Required Quantitation Limits (ng/tube) |
|---|---|
| Acetone | 5 |
| Benzene | 5 |
| 2-Butanone (MEK) | 5 |
| Carbon Disulfide | 5 |
| Carbon Tetrachloride | 5 |
| Chlorobenzene | 5 |
| Chloroform | 5 |
| Cumene | 5 |
| 1,2-Dichloroethane | 5 |
| 1,2-Dichloroethene (total) | 5 |
| 1,2-Dichloropropane | 5 |
| 1,3-Dichloropropane | 5 |
| Ethyl Benzene | 5 |
| Methylene Chloride | 5 |
| 1,1,2,2-Tetrachloroethane | 5 |
| Tetrachloroethylene | 5 |
| Tetrahydrofuran | 5 |
| Toluene | 5 |
| 1,1,1-Trichloroethane | 5 |
| Trichloroethylene | 5 |
| o-, m-, p-Xylene (total) | 5 |

ATTACHMENT 1

I. Perform the following per CLP Statement of Work (SOW) (3/90).

1. GC/MS Tuning

2. Qualitative compound identification

3. Surrogate Spike (compounds to be used and their concentrations as they are specified in the SOW) to standards, blanks, and samples. the concentration of each surrogate spike compound shall be 200 total ng.

4. Internal Standard Compounds to be used and their concentrations.

5. For matrix spike/matrix spike duplicate (MS/MSD) analysis, matrix spike compounds specified in the CLP SOW shall be used. The total concentration of each compound shall be at 200 ng.

6. Tentatively identified of non-target compounds (TICs).

II. Calibration Requirements

1. Initial Calibration:
   Initial calibration curve shall consist of 5 points at 5, 20, 200, 500, and 1,000 total ng of each compound.

2. Continuing Calibration Check:
   a. Perform daily continuing calibration check at the beginning, before sample analysis, and every 12 hour shift using standards at concentrations of 20, 200, and 500.

   b. Perform weekly using standard at concentration of 20 ng.

III. Preparation and Analysis of Standards

Calibration standards shall be prepared by spiking pre-cleaned blank cartridges with appropriate amounts of standards, and analyzed the same way as the samples.

IV. Detection Limit Verification

Spike a blank cartridge with all target compounds at the required quantitation limits as listed in Table 1. All qualitative criteria as per the CLP SOW for organics shall be met. Provide documentation requirements of the CLP organic SOW.

V. Analysis

Analyze and report results of each cartridge separately in the unit of ng/tube.

11/26/90
FmI0358SB

# Z

## ZAMIA DEBILIS

NIOSH #: ZG 4600000

Dried, ground-up zamia tubers were used (85CVA2 5,197,70)

| TOXICITY DATA: | 3 | CODEN: |
|---|---|---|
| orl-rat TDLo:650 gm/kg/ 77W-C:ETA | | 85CVA2 5,197,70 |

*THR:* An exper ETA.

## ZEARALENONE

CAS RN: 17924924 NIOSH #: DM 2550000
mf: $C_{18}H_{22}O_5$; mw: 318.40

l-form: crystals. mp: 164°-165°. sol in aqu alkali, ether, benzene, alc; almost insol in water. dl-form: crystals. mp: 187°-189°.

SYNS:
6-(10-HYDROXY-6-OXO-TRANS-1-UNDECENYL)-BETA-RESORCYCLIC ACID-N-LACTONE
NCI-C50226

| TOXICITY DATA: | 3 | CODEN: |
|---|---|---|
| dnr-bcs 2500 mg/L | | IRLCDZ 7,204,79 |
| skn-gpg 50 mg/24H SEV | | JANCA2 57,1121,74 |
| mrc-bcs 100 ug/disc | | CNREA8 36,445,76 |
| orl-rat TDLo:10 mg/kg (6-15D preg) | | BECTA6 15,678,76 |
| orl-rat TDLo:100 mg/kg (6-15D preg) | | BECTA6 15,678,76 |

Currently Tested by NTP for Carcinogenesis by Standard Bioassay Protocol as of December 1980. Reported in EPA TSCA Inventory, 1980.

*THR:* SEV skn irr in gpg. An exper TER. MUT data. Possible CARC.

## ZETAR EMULSION

A shampoo containing coal tar derivatives (TOLED5 3,325,79)

NIOSH #: ZG 7250000

SYN: ZET

| TOXICITY DATA: | CODEN: |
|---|---|
| mma-sat 10 ug/plate | TOLED5 3,325,79 |

*THR:* MUT data.

## ZINC

CAS RN: 7440-66-6 NIOSH #: ZG 8600000
af: Zn; aw: 65.37

Bluish-white, lustrous metal. mp: 419.8°; bp: 908°; d: 7.14 @ 25°; vap. press: 1 mm @ 487°.

SYNS:
BLUE POWDER
C.I. 77945
C.I. PIGMENT BLACK 16
GRANULAR ZINC
ZINC DUST
ZINC POWDER

| SKIN AND EYE IRRITATION DATA: | 2 | CODEN: |
|---|---|---|
| skn-hmn 300 ug/3D-I:MLD | | 85DKA8 -,127,77 |

| TOXICITY DATA: | CODEN: |
|---|---|
| ihl-hmn TCLo:124 mg/M³/50M:PUL | AHYGAJ 72,358,10 |

*Toxicology Review:* QURBAW 7(1),75,74; ADTEAS 5,51,72; FOREAE 7,313,42; KOTTAM 11(11),1300,7; AMTODM 3,209,77.

"NIOSH Manual of Analytical Methods" VOL 5 173# NIAMAM*. Reported in EPA TSCA Inventory, 1980. Meets Criteria for Proposed OSHA Medical Records Rule FEREAC 47,30420,82.

*THR:* A hmn skn irr and PUL. See also zinc compounds. Pure zinc powder, dust, fume is relatively non-tox to humans via irr or ihl. The difficulty arises from oxidation of zinc fumes prior to ihal or presence of impurities such as Cd, Sb, As, Pb.

*Fire Hazard:* Mod, in the form of dust when exposed to heat or flame.

*Spontaneous Heating:* No.

*Explosion Hazard:* In the form of dust when reacted with acids.

*Incomp:* $NH_4NO_3$; $BaO_2$; $Ba(NO_3)_2$; Cd; $CS_2$; chlorates; $Cl_2$, $ClF_3$; $CrO_3$; (ethyl acetoacetate + tribromoneopentyl alcohol); $F_2$; hydrazine mononitrate; hydroxylamine; $Pb(N_3)_2$; (Mg + $Ba(NO_3)_2$ + $BaO_2$); $MnCl_2$; $HNO_3$; performic acid; $KClO_3$; $KNO_3$; $K_2O_2$; Se; $NaClO_3$; $Na_2O_2$; S; Te; $H_2O$; $(NH_4)_2S$; $As_2O_3$; $CS_2$; $CaCl_2$; NaOH; chlorinated rubber; catalytic metals; halocarbons; o-nitroanisole; nitrobenzene; non-metals; oxidants; paint primer base; pentacarbonyliron; transition metal halides; seleninyl bromide.

*To Fight Fire:* Special mixtures of dry chemical.

For further information see Vol. 1, No. 7 of *DPIM Report*.

## ZINC ACETATE

CAS RN: 557346 NIOSH #: AK 1500000
mf: $C_4H_6O_4 \cdot Zn$; mw: 183.47

Astringent taste, d: 1.735; mp: 237°. Very sol in water; somewhat sol in alc. Crystals.



recycled paper
ecology and environment

SAX, I.
6th EDITION

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

| SAS NUMBER |
|---|
| |

Approved by: SPECIAL ANALYTICAL SERVICE
Client Request

[ ] Regional Transmittal [ ] Telephone Request

A. EPA Region/Client: Region V/FIT

B. RSCC Representative: JAN PELS

C. Telephone Number: (312) 353-2720

D. Date of Request: November 16, 1990

E. Site Name: Central Iron and Metal
Springfield, MI.
EPA ID: MID016724114

Please provide below description of your request for Special Analytical Service under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in a delay in the processing of your request. Please continue response on additional sheet or attach supplementary information as needed.

1. General description of analytical service requested:
Analysis of air samples for specified volatile organics using EPA Method TO2. Cartridges are to be analyzed separately unless specified by field personnel.

2. Definition and number of work units involved (specify whether whole samples or fractions; whether organics or inorganics; whether aqueous or soil and sediments; and whether low, medium or high concentration):
Analyze 48 low level air samples for target volatile organic compounds (Table 1) and tentatively identified compounds (TICs).
30 samples + 15 QC tubes + 3 Blank tubes = total 48 tubes (field personnel will supply tubes).

3. Purpose of analysis (specify whether Superfund (enforcement or remedial action), RCRA, NPDES, ETC.):
SUPERFUND---SITE INSPECTION

4. Estimated date(s) of collection: December 17, 1990

5. Estimate date(s) and method of shipment:
SHIPMENT BY FEDERAL EXPRESS for week of December 17, 1990

6. Number of days analysis and data required after laboratory receipt of sample:
   THE LABORATORY MUST START THE ANALYSIS WITH IN 7 DAYS OF SAMPLE RECEIPT
   THE LAB MUST REPORT RESULTS WITHIN 30 DAYS OF RECEIPT OF SAMPLES TO CPMS.

7. Analytical protocol required (attach copy if other than a protocol currently used in this program:
   Thermal desorption of a CMS cartridge onto a cryogenic focusing trap, followed by desorption of the cryogenic trap and GC/MS analysis of the volatile organic compounds (VOCs). See the attached guideline for GC/MS tuning, analytical procedures, and the target compound list (Table 1), using EPA Method TO2.

8. Special technical instructions (if outside protocol requirements, specify compound names, CAS numbers, detection limits etc.):
   FIT will supply 48 stainless steel sorbent Carbotrap 300 tubes (1/4" o.d. x 7"). Deviations from the method for analysis will not be allowed without approval from the Regional Representative. Verify the detection limits through cartridge spiked with all target compounds at the concentration of the detection limits. See Attachment 1 for additional details.

9. Analytical results required(if known, specify format for data sheets, QA/QC reports, Chain-of-Custody documentation, etc.
   All documentation requirements of the CLP organics statement of work (SOW) (3/90) apply, including copies of the chain-of-custody forms received at the laboratory with the samples, initial and continuing calibration sheets, OADS, surrogate recovery summary, internal standard summary, and matrix spike/matrix spike duplicate (MS/MSD) recovery summary. Non-target compounds detected will be identified, quantitated, and reported as per attachment. All results from analysis of blank cartridges will also be reported. Provide the detection limits verification data as discussed above in Attachment 1.

10. Other(use additional sheets or attach supplementary information, as needed):

11. Name of sampling/shipping contact: ANDREA DAVIS
    Phone: (312) 663-9415

12. DATA REQUIREMENTS

| PARAMETER OR CONCENTRATION | DETECTION LIMIT | ± PRECISION DESIRED |
|---|---|---|
| Target VOCs (Table 1 of SAS) | 5 ng/tube | +/-25% |

13. QC Requirements

| Audits Required | Frequency of audits | LIMITS (Percent or Concentration) |
|---|---|---|
| Method Blank | Daily, at beginning and every 12 hour shift | <MDL |
| Continuing Calibration Check | Daily, at beginning and every 12 hour shift | <25% |
| Field duplicate | 1 per group of 10 samples | 75-125% recovery |
| MS & MSD for in lab blank cartridges | 1 per group of 10 samples | 75-125% recovery +/-25%RPD |
| Surrogate spike | 1 per group of 10 samples | 75-125% recovery |
| Laboratory blank | 1 per day | Document with data package |

14. Action Required if Limits are Exceed:

CONTACT REGION V RSCC JAN PELS (312) 353-2720
CHUCK ELLY (312) 353-9087

IF ANY OUTLIERS OCCUR OR OTHER PROBLEMS (SUCH AS THE NEED FOR DILUTIONS), CONTACT THE RSCC (JAN PELS) BEFORE PROCEEDING.

Please return this request to the Sample Management Office as soon as possible to expedite processing of your request for special analytical service. Should you have any questions or need any assistance, please contact your Regional representative at the Sample Management Office.

TABLE 1

TARGET COMPOUND LIST AND METHOD DETECTION LIMIT

| Parameter | Required Quantitation Limits (ng/tube) |
|---|---|
| Acetone | 5 |
| Benzene | 5 |
| 2-Butanone (MEK) | 5 |
| Carbon Disulfide | 5 |
| Carbon Tetrachloride | 5 |
| Chlorobenzene | 5 |
| Chloroform | 5 |
| Cumene | 5 |
| 1,2-Dichloroethane | 5 |
| 1,2-Dichloroethene (total) | 5 |
| 1,2-Dichloropropane | 5 |
| 1,3-Dichloropropane | 5 |
| Ethyl Benzene | 5 |
| Methylene Chloride | 5 |
| 1,1,2,2-Tetrachloroethane | 5 |
| Tetrachloroethylene | 5 |
| Tetrahydrofuran | 5 |
| Toluene | 5 |
| 1,1,1-Trichloroethane | 5 |
| Trichloroethylene | 5 |
| o-, m-, p-Xylene (total) | 5 |

ATTACHMENT 1

I. Perform the following per CLP Statement of Work (SOW) (3/90).
   1. GC/MS Tuning

   2. Qualitative compound identification

   3. Surrogate Spike (compounds to be used and their concentrations as they are specified in the SOW) to standards, blanks, and samples. the concentration of each surrogate spike compound shall be 200 total ng.

   4. Internal Standard Compounds to be used and their concentrations.

   5. For matrix spike/matrix spike duplicate (MS/MSD) analysis, matrix spike compounds specified in the CLP SOW shall be used. The total concentration of each compound shall be at 200 ng.

   6. Tentatively identified of non-target compounds (TICs).

II. Calibration Requirements
   1. Initial Calibration:
      Initial calibration curve shall consist of 5 points at 5, 20, 200, 500, and 1,000 total ng of each compound.

   2. Continuing Calibration Check:
      a. Perform daily continuing calibration check at the beginning, before sample analysis, and every 12 hour shift using standards at concentrations of 20, 200, and 500.

      b. Perform weekly using standard at concentration of 20 ng.

III. Preparation and Analysis of Standards
   Calibration standards shall be prepared by spiking pre-cleaned blank cartridges with appropriate amounts of standards, and analyzed the same way as the samples.

IV. Detection Limit Verification
   Spike a blank cartridge with all target compounds at the required quantitation limits as listed in Table 1. All qualitative criteria as per the CLP SOW for organics shall be met. Provide documentation requirements of the CLP organic SOW.

V. Analysis
   Analyze and report results of each cartridge separately in the unit of ng/tube.