# SUMMARY OF INVESTIGATIVE WORK

**prepared for**

**Randall Textron Facility**
**Grenada, Mississippi**

**July 25, 1999**

27-18152.001

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~~JUL 9 1999~~

ECKENFELDER®

AN INTEGRAL PART OF

BROWN AND CALDWELL

July 28, 1999

27-99646.078

JUL 29 1999

Ms. Lael Butler
United States Environmental Protection Agency
Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960

RE: EPA ID No. MSD 007 037 278

Dear Ms. Butler:

At the request of Mr. John Bozick of Meritor Automotive we have enclosed one copy of the document entitled "Randall Textron Facility Grenada, Mississippi: Summary of Investigative Work". This document contains the information that you requested during the Site related meeting held in your offices on May 13, 1999 and described in the follow-up letter sent to the attention of to Mr. Lloyd Taylor of Textron Automotive Company.

You should receive under separate cover, an overlay for the oversized drawings which were previously provided. The overlay shows the location of the Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs).

If you have any questions, please feel free to contact John Bozick at (248) 435-7908 or me at (615) 255-2288.

Sincerely,

Brown and Caldwell

Robert D. Norris

Robert D. Norris, Ph.D.
Technical Director
In-Situ Remediation

cc: John Bozick
Jeffrey L. Pintenich, P.E., CHMM
Mr. Lloyd W. Taylor

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# 1.0 SUMMARY OF SUBMITTAL

Meritor Automotive, Inc. and Textron Automotive Company have conducted a number of environmental investigations at the referenced facility. The most extensive investigative work is reported in the 1994 Remedial Investigation (RI) Report conducted by ECKENFELDER INC., now Brown and Caldwell. The work was performed for Rockwell Automotive North America, now Meritor Automotive, Inc., in response to a Mississippi Department of Environmental Quality (MDEQ) administrative order on consent designed to investigate the on-Site Landfill, and was subsequently expanded to include other areas of the Site.

Subsequent to the submittal of the RI report, the facility became subject to regulation under RCRA and is being addressed by the USEPA's RCRA Programs Branch in Region IV. A RCRA Facility Assessment (RFA) was conducted by USEPA's contractor, A. T. Kearny. On March 2, 1999 USEPA issued a combined RCRA Facility Investigation (RFI)/Confirmatory Sampling (CS) Work Plan call letter. Meritor and Textron requested a meeting at the Region IV office to review the results of the RI conducted for MDEQ and to identify potential data gaps. During a meeting held on May 13, 1999 among Ms. Lael Butler, the Region IV Project Manager, and representatives from Textron Automotive, Meritor Automotive, and Meritor's consultant, Brown and Caldwell, it was agreed that nearly all of the information that might be generated in an RFI/CS effort already existed. Ms. Butler, requested, as documented in USEPA's subsequent letter, that summaries of data obtained subsequent to issuance of the 1994 RI report be prepared and additionally that all available data be organized according to each of several Solid Waste Management Units (SWMU) and Areas of Concern (AOC). This document has been prepared in response to that request.

In the RI report the results of that investigation are discussed on a site-wide basis. The Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) had not yet been determined at the time the report was submitted to the Mississippi Department of

Environmental Quality (MDEQ). The analytical data for specific constituents in each media at all sampling locations were presented in tabular form and on oversized drawings. Constituent concentrations were discussed in terms of ranges and statistical terms for specific media.

Additional data have been obtained during post-closure sampling and in conjunction with interim remediation of the dense non-aqueous liquid (DNAPL), light non-aqueous liquid (LNAPL), and on-Site Landfill areas as documented in several reports which have been submitted to USEPA. Additionally, Textron has sampled and analyzed samples from the compliance wells surrounding the Former Equalization Lagoon and of the Wastewater Treatment Plant effluent. The results of these efforts are described in Section 2 of this submittal.

Summaries were requested for SMWUs 7 and 12, for which it has been determined that no further action is required at this time, including reasons why no further investigatory work is required at this time. In addition summaries documenting media-specific concentrations were requested for SWMUs 13, 14, and 15 and AOCs A, B, and C. These summaries contain for each SWMU and AOC, the location, a brief description, the investigations that have conducted, and media-specific concentrations for constituents that were reported above their detection limit in a number of samples. Additionally, pertinent data for soils, groundwater, surface water, and/or sediments have been extracted from the data tables contained in Appendix D of the Remedial Investigation Report. USEPA has copies of the oversized drawings. To facilitate USEPA's review, overlays for the oversized drawings showing each unit in color have been provided.

## 2.0 INVESTIGATIONS SUPPLEMENTAL TO THE REMEDIAL INVESTIGATION

The 1994 Remedial Investigation Report for this site prepared by ECKENFELDER INC. on behalf of Meritor Automotive detailed the sampling and analysis of soils, surface water, sediments, and groundwater at the facility The report text contained a description of the site, including its geology and hydrogeology, as well as the sampling and analysis work which was conducted. The results of the investigation were discussed on a site-wide basis as Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) had not yet been determined. The analytical data was presented in tabular form and on oversized drawings. These drawings depict surface features, hydrogeological units, soil, sediment, surface water and groundwater sampling locations; and concentrations of detected soil, sediment, surface water, and groundwater constituents. For groundwater, isoconcentrations interpretations of constituents identified in numerous samples were presented. In addition to soil and groundwater impact, two areas containing free phase organics, both LNAPL and DNAPL, were identified.

Since 1994 additional sampling and analysis have been conducted in conjunction with three Interim Remedial Actions and as part of the closure of the Equalization Lagoon. The three interim remediation activities consisted of DNAPL (trichloroethene or TCE) recovery in AOC A, LNAPL (toluene) recovery in AOC B, and excavation and surface treatment of TCE impacted soils in the former on-Site Landfill Area (SWMU 4) Additionally, Meritor conducted an evaluation of monitored natural attenuation of the volatile organic chemical (VOC) plume in groundwater. Since November 1998, Textron Automotive has collected and analyzed groundwater samples from wells located along the perimeter of the former Equalization Lagoon as part of a long-term monitoring program required by their closure permit.

Additional data collected from AOC A and AOC B were limited to volumes of free phase liquids recovered, as shown in Figures 2-1 for DNAPL and 2-2 for LNAPL. As a result of the Interim Remedial Actions performed in AOC A and AOC B, over 200 gallons of TCE and 2,000 gallons of toluene were removed before product thickness decreased to

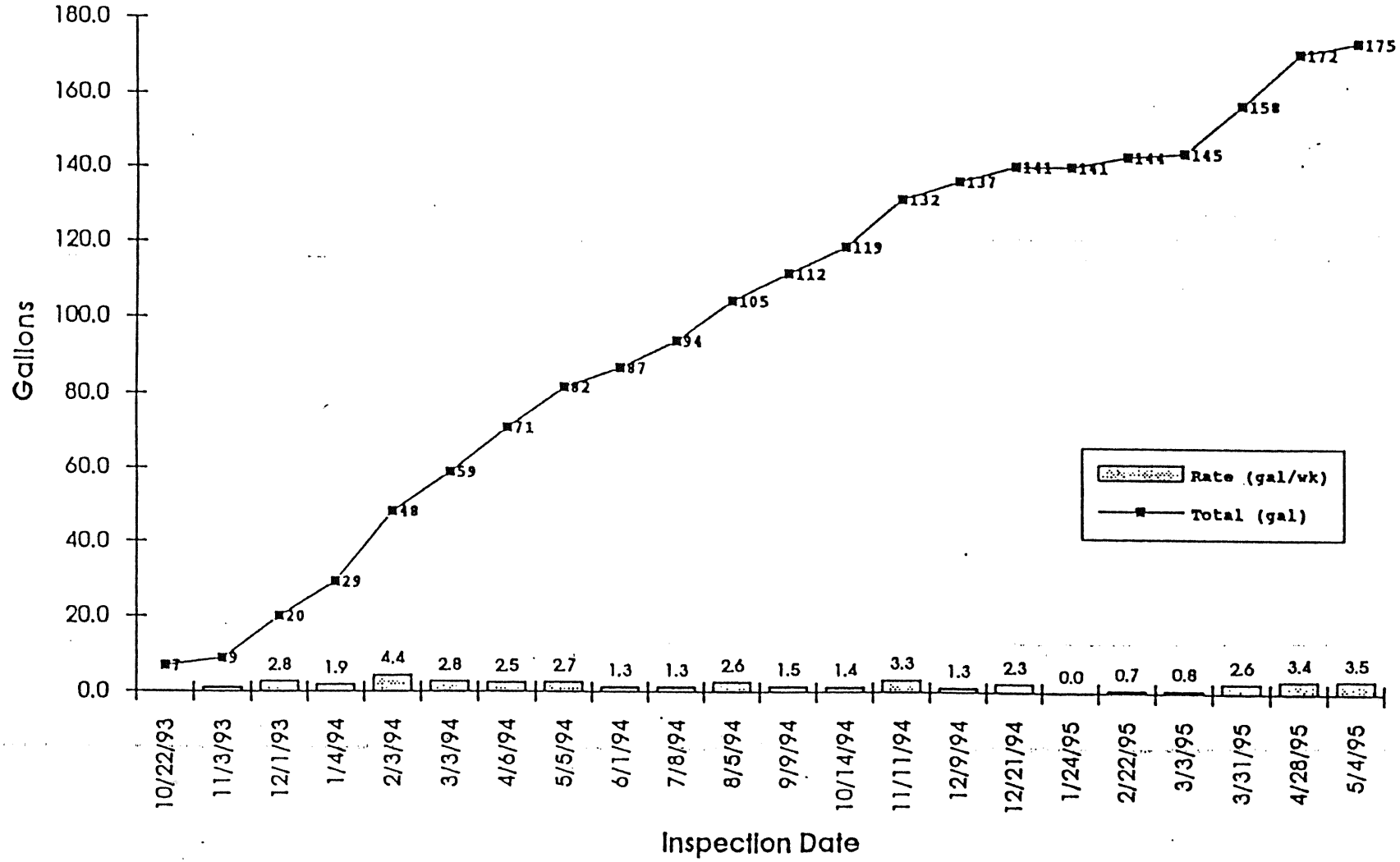


Figure 2-1. TCE (DNAPL) Product Recovery

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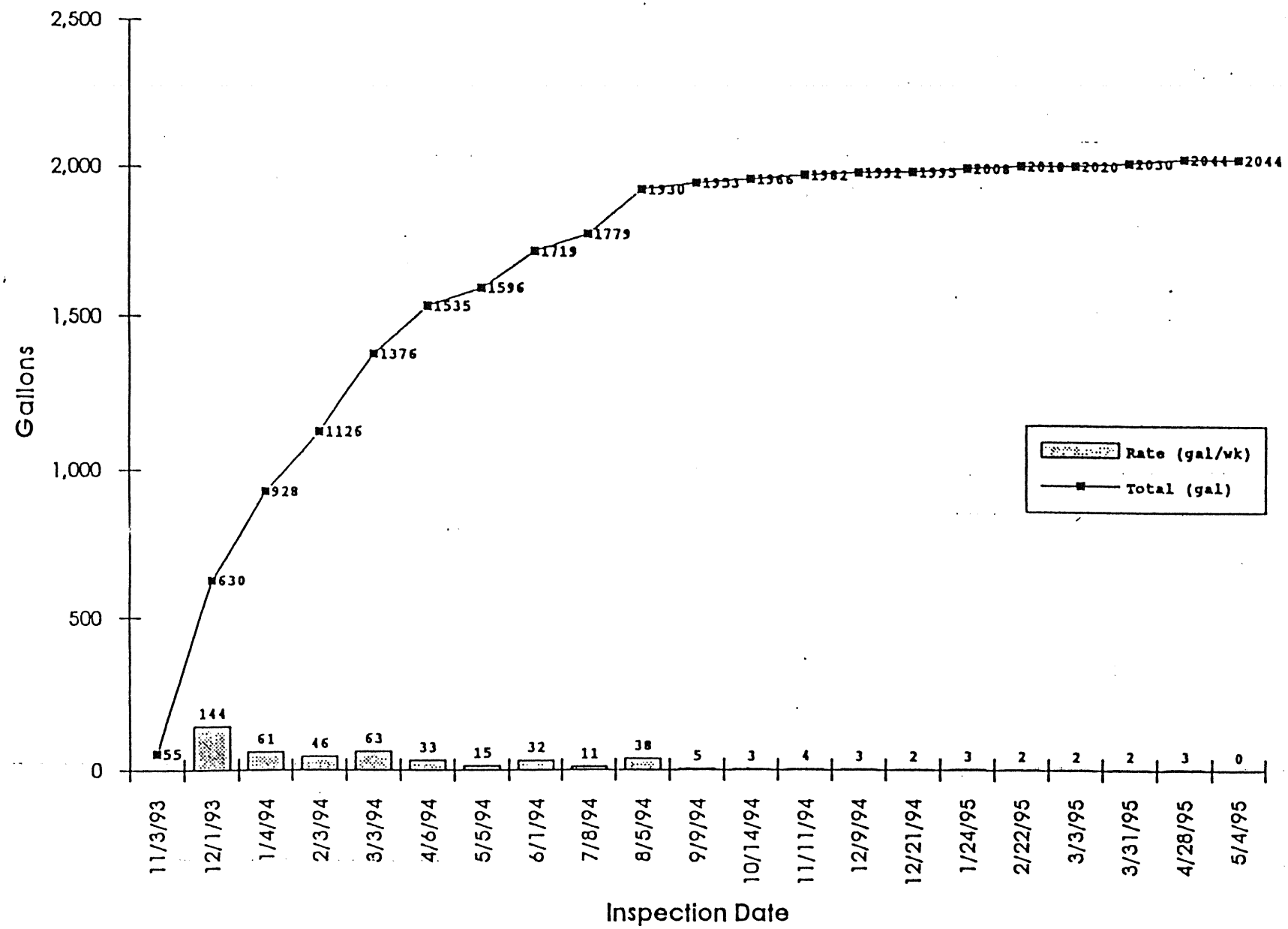


Figure 2-2. Toluene (LNAPL) Product Recovery

96-RA121A.02

the point where additional recovery was no longer beneficial. In conjunction with the LNAPL recovery effort, Meritor attempted to collect groundwater samples from beneath the main building immediately downgradient of the LNAPL recovery system. This attempt was not successful because of the limitations imposed by the building infrastructure.

A large number of soils samples were collected during the Interim Remedial Action performed in the area of the former on-Site landfill. These included samples of treated soils and excavation bottom soils (approximately eight feet below ground surface) and side wall soils. The samples were analyzed for TCE. A cleanup target of 7.8 mg/Kg was used. All treated soils met this target. Excavation side wall and bottom samples met or in some areas slightly exceeded the cleanup target. The details of the interim remediation project including all analytical data are contained in the report Remedial Construction Record Report for the Soil Interim Remedial Action at the Randall Textron Site: Grenada, Mississippi. Figure 3 (5-1 from the report) shows the extent of final excavation, final excavation limit composite sample locations, and the TCE concentrations of the excavation limit samples.

In conjunction with the on-Site landfill clean-up, a set of groundwater samples was collected within and adjacent to the former on-Site landfill during 1996. In 1998 Meritor collected another set of groundwater samples over a slightly larger area to determine VOC concentrations and to evaluate the potential for natural attenuation to contribute to a remedy for groundwater. Analyses included VOCs and parameters recommended in the USEPA's "Technical Protocol for Evaluating Monitored Natural Attenuation of Chlorinated Solvents in Ground Water". The data are presented in Brown and Caldwell's January 1999 report entitled "Supplemental Groundwater Sampling and Analysis: Natural Attenuation Evaluation". Tables 3-1 containing the 1998 VOC data, 3-2 containing a summary of VOC data since 1993, Table 3-2 containing chromium concentrations in groundwater, and Table 4-1 summarizing the bioremediation parameters from the January 1999 report are included here as Tables 2-1 through 2-4. In general, the groundwater quality has changed little over the period 1993 to 1998.

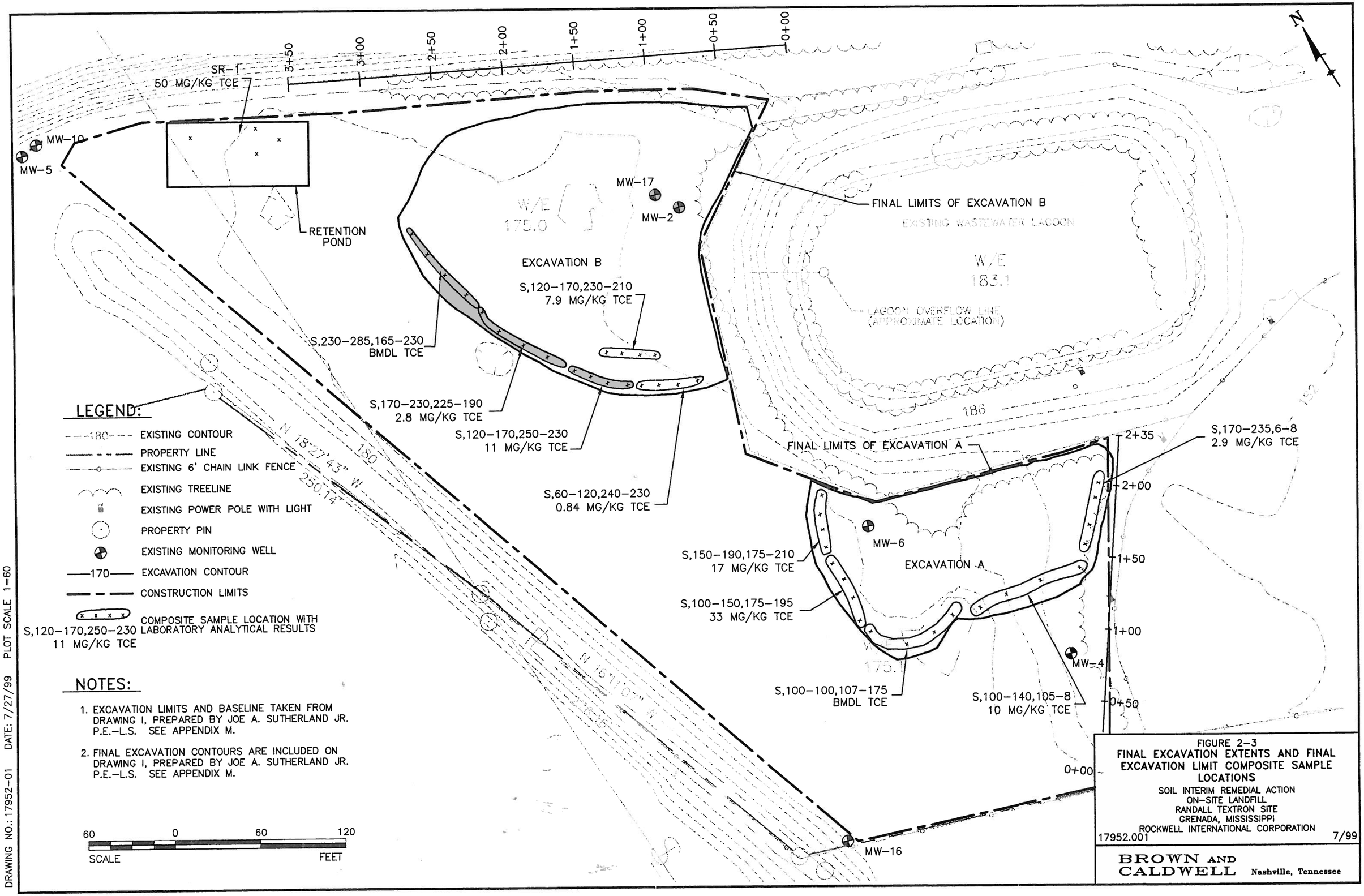
N
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
SR-1
50 MG/KG TCE
MW-10
MW-5
RETENTION POND
MW-17
MW-2
W/E 175.0
EXCAVATION B
S,120-170,230-210
7.9 MG/KG TCE
S,230-285,165-230
BMDL TCE
S,170-230,225-190
2.8 MG/KG TCE
S,120-170,250-230
11 MG/KG TCE
S,60-120,240-230
0.84 MG/KG TCE
FINAL LIMITS OF EXCAVATION B
EXISTING WASTEWATER LAGOON
W/E 183.1
LAGOON OVERFLOW LINE (APPROXIMATE LOCATION)
186
FINAL LIMITS OF EXCAVATION A
2+35
S,170-235,6-8
2.9 MG/KG TCE
2+00
MW-6
EXCAVATION A
S,150-190,175-210
17 MG/KG TCE
S,100-150,175-195
33 MG/KG TCE
1+50
1+00
MW-4
S,100-100,107-175
BMDL TCE
S,100-140,105-8
10 MG/KG TCE
0+50
0+00
MW-16
N 18°27'43" W
250.14'
180
LEGEND:
180 EXISTING CONTOUR
PROPERTY LINE
EXISTING 6' CHAIN LINK FENCE
EXISTING TREELINE
EXISTING POWER POLE WITH LIGHT
PROPERTY PIN
EXISTING MONITORING WELL
170 EXCAVATION CONTOUR
CONSTRUCTION LIMITS
COMPOSITE SAMPLE LOCATION WITH LABORATORY ANALYTICAL RESULTS
S,120-170,250-230
11 MG/KG TCE
NOTES:
1. EXCAVATION LIMITS AND BASELINE TAKEN FROM DRAWING I, PREPARED BY JOE A. SUTHERLAND JR. P.E.-L.S. SEE APPENDIX M.
2. FINAL EXCAVATION CONTOURS ARE INCLUDED ON DRAWING I, PREPARED BY JOE A. SUTHERLAND JR. P.E.-L.S. SEE APPENDIX M.
60 0 60 120
SCALE FEET
DRAWING NO.: 17952-01 DATE: 7/27/99 PLOT SCALE 1=60
FIGURE 2-3
FINAL EXCAVATION EXTENTS AND FINAL EXCAVATION LIMIT COMPOSITE SAMPLE LOCATIONS
SOIL INTERIM REMEDIAL ACTION
ON-SITE LANDFILL
RANDALL TEXTRON SITE
GRENADA, MISSISSIPPI
ROCKWELL INTERNATIONAL CORPORATION
17952.001
7/99
BROWN AND CALDWELL Nashville, Tennessee

**TABLE 2-1**

**RESULTS FOR DETECTED VOCs**
**MERITOR, GRENADA, MISSISSIPPI**

| Well Name | Date | Trichloro-ethene | cis-1,2-Dichloro-ethene | Vinyl chloride | Acetone | Benzene | Bromo-dichloro-methane | Carbon disulfide | 1,1-Dichloro-ethane |
|---|---|---|---|---|---|---|---|---|---|
| | MDL | 1 | 1 | 2 | 5 | 1 | 1 | 1 | 1 |
| | EQL | 10 | 10 | 20 | 50 | 10 | 10 | 10 | 10 |
| | UNITS | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| MW-1 | 10/6/98 | UD | 62000 D | 1200 D | UD | UD | UD | UD | UD |
| MW-2 | 10/6/98 | 650000 D | 170000 D | 6600 D | UD | UD | UD | UD | UD |
| MW-4 | 10/5/98 | 3700 D | 16000 D | 3200 D | U | 2.8 J | U | 5.7 J | U |
| DW-4 | 10/5/98 | 20000 D | 5700 D | 1200 D | U | 9.2 J | U | U | 44 |
| MW-5 | 10/6/98 | 100000 D | 37000 D | 200 JD | UD | UD | UD | UD | UD |
| MW-5 Dupe | 10/6/98 | 99000 D | 36000 D | 200 JD | UD | UD | UD | UD | UD |
| MW-6 | 10/5/98 | 2900 D | 20000 D | 18000 D | 30 J | 1.5 J | U | 2 J | U |
| MW-10 | 10/6/98 | 6.5 JD | UD | UD | UD | UD | UD | UD | UD |
| MW-12 | 10/8/98 | 22 | 190 | U | U | U | U | U | U |
| MW-14 | 10/6/98 | 1200 D | 500 D | UD | UD | UD | UD | UD | UD |
| MW-15 | 10/6/98 | 5200 D | 2300 D | 7.8 J | U | U | U | U | U |
| MW-16 | 10/5/98 | 2800 D | 3700 D | 360 | U | U | U | U | U |
| MW-17 | 10/6/98 | 13000 D | 2800 D | 310 JD | UD | UD | UD | UD | UD |
| MW-23 | 10/6/98 | 200 D | 95 D | 11 JD | UD | UD | UD | UD | UD |
| RT-5 | 10/6/98 | 10000 D | 6100 D | 180 JD | UD | UD | UD | UD | UD |

## TABLE 2-1

## RESULTS FOR DETECTED VOCs
## MERITOR, GRENADA, MISSISSIPPI

| Well Name | Date | 1,1-Dichloro-ethene | trans-1,2-Dichloro-ethene | Ethyl-benzene | Methylene chloride | Tetra-chloro-ethene | Toluene | Xylene-(total) |
|---|---|---|---|---|---|---|---|---|
| | MDL | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | EQL | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | UNITS | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| MW-1 | 10/6/98 | UD | 470 JD | 100 JD | UD | UD | UD | UD |
| MW-2 | 10/6/98 | 250 JD | UD | 380 JD | UD | 80 JD | 2200 D | 1200 D |
| MW-4 | 10/5/98 | 36 | 78 | 14 | U | 5.5 J | 82 | 34 |
| DW-4 | 10/5/98 | 37 | 27 | U | 6.2 J | 54 | U | 2.8 J |
| MW-5 | 10/6/98 | UD | 240 JD | UD | UD | UD | UD | UD |
| MW-5 Dupe | 10/6/98 | UD | UD | UD | UD | UD | UD | UD |
| MW-6 | 10/5/98 | 32 | 38 | 13 | U | U | 160 | 59 |
| MW-10 | 10/6/98 | UD | UD | UD | UD | UD | UD | UD |
| MW-12 | 10/8/98 | U | U | U | U | U | U | U |
| MW-14 | 10/6/98 | UD | UD | UD | UD | UD | UD | UD |
| MW-15 | 10/6/98 | 10 | 5.2 J | U | U | 12 | U | U |
| MW-16 | 10/5/98 | 12 | 16 | U | U | 6.1 J | U | U |
| MW-17 | 10/6/98 | UD | UD | UD | UD | UD | UD | UD |
| MW-23 | 10/6/98 | UD | 3.3 JD | UD | UD | UD | UD | UD |
| RT-5 | 10/6/98 | UD | UD | UD | UD | UD | UD | UD |

TABLE 2-2

TRICHLOROETHENE CONCENTRATION COMPARISON
MERITOR, GRENADA, MISSISSIPPI

| Year Sampled | MW-2 (ug/L) | MW-4 (ug/L) | MW-5 (ug/L) | MW-6 (ug/L) | MW-10 (ug/L) | MW-14 (ug/L) | MW-16 (ug/L) | MW-17 (ug/L) | DW-4 (ug/L) |
|---|---|---|---|---|---|---|---|---|---|
| 1998 | 650,000 D | 3,700 D | 100,000 D | 2,900 D | 6.5 J | 1,200 D | 2,800 D | 13,000 D | 20,000 D |
| 1996 | 41,000 D | 3,600 D | 51,000 D | 160 | 4 J | 1,100 D | 3,600 D | 12,000 D | 28,000 D |
| 1993 | 690,000 D | 3,500 JD | 15,000 D | 9,000 JD | 5.1 J | 380 D | 7,100 D | 11,000 D | NS |
| | 480,000 JD | 3,900 D | 12,000 D | 2,700 D | 2.3 J | 330 D | 5,500 D | 12,000 D | |
| | 560,000 D | 2,900 D | 15,000 D | 9,800 D | | | | 11,000 D | |

NS - Not Sampled
D - sample was diluted.
J - estimated result.

**TABLE 2-3**

**CHROMIUM RESULTS**
**MERITOR, GRENADA, MISSISSIPPI**

| Well Name | Date | Chromium Total (1998) mg/L | Chromium Total (1993) mg/L | Chromium Hexavalent (1998) mg/L | Chromium Hexavalent (1993) mg/L |
|---|---|---|---|---|---|
| MW-1 | 10/06/98 | U | 0.0043 | U | U |
| MW-2 | 10/06/98 | U | U | U | U |
| MW-4 | 10/05/98 | U | U | U | U |
| DW-4 | 10/05/98 | 3.6 | NA | 3.0 | NA |
| MW-5 | 10/06/98 | U | U | U | U |
| MW-5 Dupe | 10/06/98 | U | U | U | U |
| MW-6 | 10/05/98 | 2.3 | 0.011 | U | U |
| MW-10 | 10/06/98 | U | U | U | U |
| MW-14 | 10/06/98 | U | U | U | 0.05/U |
| MW-15 | 10/05/98 | 0.040 | 0.005 | U | U |
| MW-16 | 10/05/98 | 0.020 | 0.062 | U | U/0.060 |
| MW-17 | 10/06/98 | U | U | U | U |
| MW-12 | 10/08/98 | U | U | U | U |
| MW-23 | 10/06/98 | 0.43 | 0.200/0.293 | 0.25 | 0.210/0.279 |
| RT-5 | 10/06/98 | 1.5 | 0.027 | 1.4 | U |

U - not detected
NA - not analyzed

## TABLE 2-4

## BIOREMEDIATION PARAMETERS
## MERITOR, GRENADA, MISSISSIPPI

| Well Name | | Iron mg/L | Manganese mg/L | Alkalinity Bicarbonate (as CaCO3) mg/L | Alkalinity Carbonate (as CaCO3) mg/L | Ammonia (as N), Non-Distilled mg/L | Nitrate+ Nitrite (as N) mg/L | Phosphorus Total (as P) mg/L | Sulfate mg/L | TKN mg/L | Volatile Fatty Acids mg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 10/06/98 | 4.0 | U | 64 | U | 0.13 | U | 0.10 | 36 | 0.48 | 24 |
| MW-5 | 10/06/98 | U | 0.16 | 40 | U | U | U | 0.033 | 55 | U | 14 |
| MW-5 Dup. | 10/06/98 | U | 0.15 | 35 | U | U | U | 0.028 | 53 | U | 7.5 |
| MW-10 | 10/06/98 | 1.6 | 0.30 | 56 | U | 0.11 | U | 0.058 | 21 | U | 5.8 |
| MW-14 | 10/06/98 | U | 0.0020 | 41 | U | U | U | 0.066 | 18 | U | U |
| MW-17 | 10/06/98 | 5.2 | 0.32 | 60 | U | 0.17 | U | 0.10 | 87 | U | 2.9 |
| MW-12 | 10/08/98 | 180 | 53 | 58 | U | U | 1.8 | 0.15 | 23 | U | 4.8 |

| | | Field Parameters | | | | | |
|---|---|---|---|---|---|---|---|
| Well Name | | Disolved Oxygen mg/L | Manganese mg/L | Iron mg/L | Carbon Dioxide mg/L | Hydrogen Sulfide mg/L | ORP mV |
| MW-2 | 10/06/98 | <0.2 | 0.1 | 3.5 | 190 | 0 | 126 |
| MW-5 | 10/06/98 | 0.4 | 0.1 | 0 | 150 | 0 | 281 |
| MW-5 Dup. | 10/06/98 | 0.4 | 0 | 0 | 155 | 0 | 281 |
| MW-10 | 10/06/98 | 0.4 | 0.1 | 1.4 | 45 | 0 | 236 |
| MW-14 | 10/06/98 | 1.2 | 0 | 0.1 | 55 | 0 | 320 |
| MW-17 | 10/06/98 | <0.2 | 0.1 | 4.3 | 45 | 0 | 180 |
| MW-12 | 10/08/98 | 2.2 | 0 | 0.1 | 45 | 0 | 190 |

U - not detected

Textron collected samples of the Wastewater Treatment Plant effluent in 1997 in support of a discharge permit application. The samples were analyzed for a comprehensive group of analytes. The results of this monitoring are presented in Table 2-5. The effluent is shown to contain relatively low levels of certain VOCs and metals.

Textron has been sampling and analyzing groundwater samples collected from the compliance wells surrounding the former Equalization Lagoon since November 1998 in compliance with their post-closure permit. Tables 2-6 and 2-7 summarize the VOC data for metals and groundwater, respectively. Groundwater constituents observed in these wells include primarily, chromium, TCE, and daughter products of TCE. Appendix A contains the laboratory data sheets.

## TABLE 2-5

## WASTEWATER TREATMENT PLANT
## EFFLUENT TO OUTFALL DITCH (µg/L)
## FEBRUARY 17 – 18, 1997

| Parameter | Concentration (ug/L) |
|---|---|
| **Detected Organics** | |
| Toluene | 1.94(J) |
| TCE | 7.06 |
| P-Chloro-m-creosol | 1.5(J) |
| Bis (-2-Ethylhexyl) Phthalate | 54.0 |
| N-Nitrosodiphenylamine | 3.7(J) |
| **Detected Metals** | |
| Aluminum | 0.07 |
| Barium | 0.056 |
| Iron | 0.51 |
| Magnesium | 3.10 |
| Manganese | 0.06 |
| **Part A Analytes** | |
| BOD | 5 |
| COD | 29 |
| TOC | 25.3 |
| **Part B Analytes** | |
| Bromide | 0.41 |
| Fluoride | 0.10 |
| Nitrate/Nitrite | 9.45 |
| Phosphorous | 2.10 |
| Sulfate | 328 |
| Surfactants | 0.15 |

**TABLE 2-6**

**EQUALIZATION LAGOON COMPLIANCE MONITORING**
**METALS IN GROUNDWATER (µg/L)**
**NOVEMBER 23, 1998[a]**

| Well | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|
| MW1-01 (RT-1) | ND | ND | ND | ND | ND | ND | 5.76 | ND |
| MW2-01 (RT-2) | ND | ND | ND | 15,700 | ND | ND | ND | ND |
| MW4-01 (RT-4) | ND | ND | ND | ND | ND | ND | ND | ND |
| MW5-01 (RT-5) | ND | ND | ND | 793 | ND | ND | ND | ND |

[a]Method SW 6010 except for Mercury (SW 7470).

**TABLE 2-7**

**EQUALIZATION LAGOON COMPLIANCE MONITORING**
**VOCs IN GROUNDWATER (µg/L)**
**NOVEMBER 23, 1998[a, b, c]**

| Well | Benzene | Toluene | Xylene | PCE | TCE | 1,2-DCE | 1,1,1-TCA | 1,1,2-TCA | 1,1-DCA | 1,1-DCE | Vinyl Chloride | Chloro-Ethane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW1-01 (RT-1) | | | | | 124 | | | | | | | |
| MW2-01 (RT-2) | 23.6 | 10.3 | 31.5 | 39.8 | 13,800 | 26.2 | 16.3 | | 38.3 | 81.2 | 3,000 | |
| MW4-01 (RT-4) | | | | | 575 | 52.6 | | | 5.9 | 12.5 | 612 | |
| MW5-01 (RT-5) | | | | 14.2 | 11,600 | 17.9 | 12.8 | 6.3 | 24.5 | 36.5 | 242 | 13.3 |

[a]No SVOC detections (Method SW 8270).
[b]Method SW 8260 for VOCs.

## 3.0 DATA SUMMARIES FOR SWMUS AND AOCS

Summaries of data included in the RI report and collected subsequent to issuance of the RI report are provided for SWMUs 7 and 12, for which it has been determined that no further action is required at this time, including reasons why no further investigatory work is required at this time. In addition summaries documenting media-specific concentrations were requested for SWMUs 13, 14, and 15 and AOCs A, B, and C. These summaries contain, for each SWMU and AOC, the location, a brief description, the media that have been investigated, and media-specific concentrations for constituents that were reported above their detection limit in a number of samples. Additionally, pertinent data for soils, groundwater, surface water, and/or sediments have been extracted from the data tables contained in Appendix D of the Remedial Investigation Report. USEPA has copies of the oversized drawings. To facilitate USEPA's review, overlays for the oversized drawings showing each unit in color have been provided.

Summaries are provided in the following order:

- SWMU 7 Outfall Ditch
- SWMU 12 Wet Well
- SWMU 13 Wastewater Treatment Plant
- SWMU 14 Destruct Pit
- SWMU 15 Process Sewers
- AOC A Former TCE Storage Area
- AOC B Former Toluene UST Area
- AOC C Fuel Tank Farm Containment Area

# SWMU 7 OUTFALL DITCH

## SUMMARY

**Location:** Northeastern portion of the site running northwesterly along the northeast side of the Wastewater Treatment Plant, the Sludge Lagoon, and the former On-Site Landfill.

**Description:** The eastern portion of the Outfall Ditch receives discharge from the Wastewater Treatment Plant and portions of the Site Drainage Ditches. Additionally, groundwater discharges to the ditch.

The Outfall Ditch discharges to Riverdale Creek which is a tributary of the Yalobusha River

- Discharge is pursuant to an NPDES permit.
- Previously, the Equalization Lagoon discharged to the Outfall Ditch
- The typical dimensions of the ditch are typically 3 to 4 feet wide by 6 inches to 2 feet deep.
- TCE, 1,1,1-TCA, 1,2-DCE, methylene chloride and toluene have been discharged to the Outfall Ditch.

**Investigations:** Samples of sediments and surface water were collected and analyzed.

Data are presented in Table SWMU 7 and Figures 5-44 for sediment and Table SWMU 7 and Figures 5-45 for surface water. Table SWMU 7 contains data for all constituents.

**Surface Water:** Surface Water samples were collected from six locations within the Outfall Ditch. These locations are shown on oversize drawing 5-45. Additional sampling was conducted within Riverdale Creek, upstream, at the point of discharge from the ditch to the creek, and downstream of the discharge point. Samples were analyzed for VOCs, SVOCs, and metals.

Organic constituents and metals reported in the Outfall Ditch surface water samples in µg/L were:

| VOCs | SW10 | SW11 | SW12 | SW21A | SW21B | SW21C |
|---|---|---|---|---|---|---|
| | .005 mg/l ≤ MCL | | | | | |
| TCE | .074 mg/l | 67 | 99 | 130 | 100 | 120 |
| 1,2-DCE | 26 | 24 | 39 | 98 | 86 | 97 |
| 1,1,1-TCA | ND | 1 | ND | ND | ND | ND |
| Methylene chloride | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | 6.2J | ND |
| Toluene | 2.0J | 1.8J | 1.7J | ND | ND | ND |
| Xylene | 1.4J | 1.2J | 1.1J | ND | ND | ND |

| Metals | SW10 | SW11 | SW12 | SW21A | SW21B | SW21C |
|---|---|---|---|---|---|---|
| Chromium (total) | 410 | 441 | 431 | 536 | 633 | 681 |
| Chromium (VI) | 85 | 172 | 164 | ND | ND | ND |
| Lead | 15 | ND | 3.9 | 12 (X) | 16 | 16 |
| Nickel | ND | ND | ND | ND | 7.7 | 10 |

**Sediments:** Sediment samples were collected from three (3) locations along the Outfall Ditch as shown in over size drawing 5- .. The reported concentrations in µg/kg were:

| VOC | SD-10 | SD-11 | SD-12 |
|---|---|---|---|
| PCE | ND | 4.2 (J) | ND |
| TCE | 37 | 470 | 7.1 (J) |
| 1,2-DCE | 28 | 95 | ND |
| Acetone | 36 (J) | ND | ND |

| Metals | SD-10 | SD-11 | SD-12 |
|---|---|---|---|
| Chromium | 8,000 | 9,680 | 405 |
| Lead | 135 | 295 | 12 |
| Nickel | 109 | 179 | 13 |
| Zinc | 116 | 148 | 31 |

Additional relevant data is presented in Table A; 1997 effluent data for the Wastewater Treatment Plant. Furthermore, groundwater adjacent to the Outfall Ditch has been monitored .and is summarized in Section 2 and can be seen in Figures 5-46 through 5-63.

**Summary** Both sediments and surface water have been sampled at several locations along the Outfall Ditch. Additionally, groundwater and wastewater

effluent, two sources to the Outfall Ditch, have been monitored, as has Riverdale Creek to which the Outfall Ditch discharges. Sufficient information has been obtained to delineate this SWMU. This SWMU was appropriately listed as NFA in USEPA's letter to Mr. Lloyd Taylor at Textron Automotive Company.

# DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 7
## Randall Textron Plant
## Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide |
|---|---|---|---|---|---|---|---|---|---|
| SW-10 | | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-11 | | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-12 | | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21A | | 5/18/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21B | | 5/18/93 | 2.0U | 2.0U | 6.2J | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21C | | 5/18/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21C | | 5/18/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium |
|---|---|---|---|---|---|---|---|---|---|
| SW-10 | | 2/23/93 | NA | NA | 5.0U | NA | NA | NA | 410 |
| SW-11 | | 2/23/93 | NA | NA | 5.0U | NA | NA | NA | 441 |
| SW-12 | | 2/23/93 | NA | NA | 5.0U | NA | NA | NA | 431 |
| SW-21A | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 536 |
| SW-21B | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 633 |
| SW-21C | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 681 |
| SW-21C | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 663 |

**Surface Water (Wet Chemistry)**

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) | TDS (mg/L) | Sulfate (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| SW-10 | | 2/23/93 | 139 | 8.8 | 30 | 0.03X | NA | 1090 | 707 |
| SW-11 | | 2/23/93 | 118 | 8.8 | 30 | 0.02X | NA | 1030 | 577 |
| SW-12 | | 2/23/93 | 300 | 1.0U | 29 | 0.04X | NA | 1040 | 557 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide |
|---|---|---|---|---|---|---|---|---|---|
| SED-10 | 0-0.5 FT | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 36J | 2.0U |
| SED-11 | 0-0.5 FT | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SED-12 | 0-0.5 FT | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium |
|---|---|---|---|---|---|---|---|---|---|
| SED-10 | 0-0.5 FT | 2/23/93 | NA | NA | 4.2 | NA | NA | NA | 8000 |
| SED-11 | 0-0.5 FT | 2/23/93 | NA | NA | 4.6 | NA | NA | NA | 9680 |
| SED-12 | 0-0.5 FT | 2/23/93 | NA | NA | 3.6 | NA | NA | NA | 405 |

## DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 7
### Randall Textron Plant
### Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | 1,1-Dichloroethene | 1,1-Dichloroetane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 2.0U | 1.0U | 26 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-11 | 2.0U | 1.0U | 24 | 1.0U | 1.0U | 10U | 1.0J | 1.0U |
| SW-12 | 2.0U | 1.0U | 39 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21A | 2.0U | 1.0U | 98 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21B | 2.0U | 1.0U | 86 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 92 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 97 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID | Hexavalent Chromium | Cobalt | Copper | Iron | Lead | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 85 | NA | NA | 327X | 15 | NA | NA | 7.0U |
| SW-11 | 172 | NA | NA | 200X | 3.0U | NA | NA | 7.0U |
| SW-12 | 164 | NA | NA | 229X | 3.9 | NA | NA | 7.0U |
| SW-21A | 25U | NA | NA | NA | 12X | NA | NA | 7.0U |
| SW-21B | 25U | NA | NA | NA | 16 | NA | NA | 7.7 |
| SW-21C | 25U | NA | NA | NA | 15X | NA | NA | 9.6 |
| SW-21C | 25U | NA | NA | NA | 16 | NA | NA | 10 |

**Surface Water (Wet Chemistry)**

| Sample ID | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) | Iron Soluble (mg/L) | Magnesium Soluble (mg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Calcium (mg/L) | Magnesium (mg/L) |
|---|---|---|---|---|---|---|---|---|
| SW-10 | NA | NA | NA | NA | NA | NA | 92 | 2.9 |
| SW-11 | NA | NA | NA | NA | NA | NA | 79 | 2.8 |
| SW-12 | NA | NA | NA | NA | NA | NA | 82 | 3.0 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | 1,1-Dichloroethene | 1,1-Dichloroethane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 2.0U | 1.0U | 28 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SED-11 | 2.0U | 1.0U | 95 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SED-12 | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Cobalt | Copper | Iron | Lead | Magnesium | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|
| SED-10 | NA | NA | NA | 135 | NA | NA | NA | 109 |
| SED-11 | NA | NA | NA | 295 | NA | NA | NA | 179 |
| SED-12 | NA | NA | NA | 12 | NA | NA | NA | 13 |

# DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 7
## Randall Textron Plant
## Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 1.0U | 1.0U | 1.0U | 1.0U | 74 | 1.0U | 1.0U | 1.0U |
| SW-11 | 1.0U | 1.0U | 1.0U | 1.0U | 67 | 1.0U | 1.0U | 1.0U |
| SW-12 | 1.0U | 1.0U | 1.0U | 1.0U | 99 | 1.0U | 1.0U | 1.0U |
| SW-21A | 1.0U | 1.0U | 1.0U | 1.0U | 130 | 1.0U | 1.0U | 1.0U |
| SW-21B | 1.0U | 1.0U | 1.0U | 1.0U | 100 | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 120 | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 120 | 1.0U | 1.0U | 1.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|
| SW-10 | NA | NA | NA | NA | 22X | NA |
| SW-11 | NA | NA | NA | NA | 12X | NA |
| SW-12 | NA | NA | NA | NA | 14X | NA |
| SW-21A | NA | NA | NA | NA | 14X | NA |
| SW-21B | NA | NA | NA | NA | 13X | NA |
| SW-21C | NA | NA | NA | NA | 18X | NA |
| SW-21C | NA | NA | NA | NA | 18X | NA |

**Surface Water (Wet Chemistry)**

| Sample ID | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|
| SW-10 | 3.2 | 270 |
| SW-11 | 3.6 | 263 |
| SW-12 | 3.0 | 269 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | cis-1,3-Dichloropropene | trans-1,3-Dichloropropene | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 37 | 1.0U | 1.0U |
| SED-11 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 470 | 1.0U | 1.0U |
| SED-12 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 7.1J | 1.0U | 1.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Potassium | Selenium | Silver | Sodium | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|---|---|
| SED-10 | NA | NA | NA | NA | NA | NA | 116 | NA |
| SED-11 | NA | NA | NA | NA | NA | NA | 148 | NA |
| SED-12 | NA | NA | NA | NA | NA | NA | 31 | NA |

# DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 7
## Randall Textron Plant
## Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 2.0J |
| SW-11 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.8J |
| SW-12 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.7J |
| SW-21A | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SW-21B | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |
| SW-21A |
| SW-21B |
| SW-21C |
| SW-21C |

**Surface Water (Wet Chemistry)**

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U |
| SED-11 | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 4.2J | 1.0U |
| SED-12 | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Percent Solids (%) |
|---|---|
| SED-10 | 55.0 |
| SED-11 | 42.2 |
| SED-12 | 67.7 |

DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 7
Randall Textron Plant
Granada, Mississippi

Surface Water
(Volatiles) (mg/L)

| Sample ID | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|
| SW-10 | 1.0U | 1.0U | 1.0U | 1.4J | 1.0U | 1.0U | 1.0U |
| SW-11 | 1.0U | 1.0U | 1.0U | 1.2J | 1.0U | 1.0U | 1.0U |
| SW-12 | 1.0U | 1.0U | 1.0U | 1.1J | 1.0U | 1.0U | 1.0U |
| SW-21A | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SW-21B | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

Surface Water
(Inorganics) (µg/L)

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |
| SW-21A |
| SW-21B |
| SW-21C |
| SW-21C |

Surface Water
(Wet Chemistry)

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |

Sediment
(Volatiles) (mg/kg)

| Sample ID | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SED-11 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SED-12 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

Sediment
(Inorganics) (mg/kg)

| Sample ID |
|---|
| SED-10 |
| SED-11 |
| SED-12 |

# SWMU 12 WET WELL

## SUMMARY

**Location:** The Wet Well is located near the southeastern corner of the Equalization Lagoon (SWMU ) and north of the northwest corner of the Main Plant Building.

**Description:** The Wet well is a constructed of concrete and has a painted liner. The tank measures 13 feet deep and 10 feet in diameter.

The Wet Well operates as a sump for untreated wastewater for transfer to the Wastewater Treatment Plant (SWMU 13).

This unit has managed alkaline rinse water, non-contact cooling water, mop water, boiler blowdown, laboratory sink washwater, and treated discharge from the chromium destruct Pit (SWMU 14).

**Investigation:** During June 26 and 27, 1995 Textron Personnel removed water and sludge from the Wet Well. At this time, inspection of the unit indicated it to be sound, the liner intact, and groundwater infiltration not to be occurring. Textron Personnel concluded that groundwater contamination did not appear to be occurring. Monitoring Well RT-2 is located approximately 30 feet from the Wet Well. Additionally, RT-3 and MW-1 are located at distances of approximately 200 feet away.

Data from the RI report are presented in Table SWMU 12 and Figures 5-46 through 5-63 for groundwater. No soils data are available.

**Groundwater:** Organic constituents in groundwater in □g/L reported in the RI report for RT-2, RT-3, and MW-1 were:

| | PCE | TCE | 1,2-DCE | VC | 1,1-DCE | 1,1-DCA | 1,2-DCA | MC |
|---|---|---|---|---|---|---|---|---|
| RT-2 | ND | 63,000 (D) | 3,600 (JD) | ND | ND | ND | ND | ND |
| RT-3 | 450 (JD) | 130,000 (D) | 5,100 (D) | ND | ND | ND | ND | ND |
| MW-1 | 12 (J) | 4,900 (D) - 7,900 (D) | 17,000 (D) - 84,000 (JD) | 3,800 (JE) - 4,900 (D) | 330 (JE) | 73 (J) | 1.9 (J) | 5.3 (JBX) |

| | 1,1,2-TCA | Chloro-benzene | Benzene | TCB | Ethyl Benzene | Xylene | Toluene |
|---|---|---|---|---|---|---|---|
| RT-2 | ND | ND | ND | ? | ND | ND | ND |
| RT-3 | ND | ND | ND | ? | ND | 1,600 (JD) | 1,100 (JD) |
| MW-1 | ND | 0.9 (J) | 1.2 (J) | 2 ? | 46 (J) | 54 (J) | 140 (J) |

Metals reported in groundwater in □g/L for Wells RT-2, RT-3, and MW-1 were:

| Metal | Unfiltered | | | Slow Purge | | |
|---|---|---|---|---|---|---|
| | RT-2 | RT-3 | MW-1 | RT-2 | RT-3 | MW-1 |
| Arsenic | NA | NA | 54 | NA | NA | 54 |
| Zinc | NA | NA | 87 | NA | NA | 22 |
| Chromium (total) | 20,100 | 58,800 | 14 | NA | NA | 4 |
| Chromium (VI) | 18,000 | 51,000 | ND | NA | NA | ND |

The most significant impacts in the vicinity of SWMU 12, the Wet Well, are due to TCE and its degradation products and chromium. This SWMU is located within plumes of TCE, its degradation products, and chromium (VI), and thus require no further investigation.

Unfiltered metals are reported here as both metals (same values as in Table AOCB) and slow purge metals (same values as on the oversize drawings. The later data were generated from a second sampling event to keep distinguished between suspended and dissolved metals and are thought to be more representative of metals that could migrate within the aquifer. This SWMU was appropriately listed as NFA in USEPA's letter to Mr. Lloyd Taylor at Textron Automotive Company.

**Summary** The impact to groundwater in the vicinity of SWMU 12 is documented in the RI report in the data recently acquired by Textron. Evidence of impact is consistent with the presence within plumes of chromium and TCE (and its degradation products) The Wet Well was recently inspect and appeared to be intact. Sufficient data is available to delineate this SWMU.

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | 8/7/91 | 2.0U | 2.0U | 3800JE | 2.0U | 5.3JBX | 5.0U | 2.0U |
| MW-1 | | 12/17/91 | 400UD | 400UD | 4900D | 400UD | 400UD | 1000UD | 400UD |
| MW-1 | | 1/13/93 | 200UD | 200UD | 4600D | 200UD | 200UD | 500UD | 200UD |
| RT-2 | | 1/14/93 | 1000UD | 1000UD | 1000UD | 1000UD | 1000UD | 2500UD | 1000UD |
| RT-3 | | 1/14/93 | 1000UD | 1000UD | 1000UD | 1000UD | 1000UD | 2500UD | 1000UD |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | Depth (ft) | Date of Collection | Acenaphthene | Acenaphtylene | Anthracene | Benzidine | Benzyl Alcohol | Benzo(a)anthracene | Benzo(a)pyrene |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | 8/7/91 | 2.0U | 2.0U | 2.0U | 40U | 5.0U | 2.0U | 2.0U |

Groundwater
(Pesticide) (µg/L)

| Sample ID | Depth (ft) | Date of Collection | alpha-BHC | beta-BHC | gamma-BHC | delta-BHC | Aldrin | Chlordane | 4,4'-DDD |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | 8/7/91 | 0.10UD | 0.20UD | 0.10UD | 0.20UD | 0.20UD | 0.10UD | 0.40UD |

Groundwater
(Inorganics) (µg/L)

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | 8/7/91 | 6000 | 20 | 58 | 286 | 1.0U | 3.0U | 14 |
| MW-1 | | 12/17/91 | NA | NA | 43 | NA | NA | NA | 12 |
| MW-1 | | 1/13/93 | NA | NA | 83 | NA | NA | NA | 5.2X |
| RT-2 | | 1/14/93 | NA | NA | NA | NA | NA | NA | 20100 |
| RT-3 | | 1/14/93 | NA | NA | NA | NA | NA | NA | 58800 |

Groundwater
(Wet Chemistry)

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) | TDS (mg/L) | Sulfate (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | 8/7/91 | 376 | 1.0U | 106 | 0.01U | NA | 706 | 89 |
| MW-1 | | 12/17/91 | 1.0U | 92 | 28 | NA | NA | 499 | 67 |
| MW-1 | | 1/13/93 | 288 | 1.0U | 67 | 0.02 | NA | 642 | 142 |
| RT-2 | | 1/14/93 | NA | NA | NA | NA | NA | NA | NA |
| RT-3 | | 1/14/93 | NA | NA | NA | NA | NA | NA | NA |

Groundwater
(Hazardous
Characteristics)

| Sample ID | Depth (ft) | Date of Collection | Corrosivity pH (units) | Ignitability Flashpoint (deg-F) | Reactivity Cyanide (mg/L) | Reactivity Sulfide (mg/L) |
|---|---|---|---|---|---|---|
| MW-1 | | 8/7/91 | 7.03 | >212 | 0.02U | 1.6 |
| MW-1 | | 12/17/91 | 7.05 | >212 | 0.02U | 1.0U |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID | 1,1-Dichloroethene | 1,1-Dichloroethane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 330JE | 73J | 84000JD | 1.0U | 1.9J | 10U | 1.0U | 1.0U |
| MW-1 | 400UD | 200UD | 28000D | 200UD | 200UD | 2000UD | 200UD | 200UD |
| MW-1 | 200UD | 100UD | 17000D | 100UD | 100UD | 1000UD | 100UD | 100UD |
| RT-2 | 1000UD | 500UD | 3600JD | 500UD | 500UD | 5000UD | 500UD | 500UD |
| RT-3 | 1000UD | 500UD | 5100D | 500UD | 500UD | 5000UD | 500UD | 500UD |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | Benzo(b)fluoranthene | Benzo(ghi)perylene | Benzo(k)fluoranthene | bis(2-Chloroethoxy) methane | bis(2-Chloroethyl)ether | bis(2-Chloroisopropyl) ether | bis(2-Ethylhexyl) phthalate | 4-Bromophenyl phenyl ether |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 1.1J | 2.0U |

Groundwater
(Pesticide) (µg/L)

| Sample ID | 4,4'-DDE | 4,4'-DDT | Dieldrin | Endosulfan I | Endosulfan II | Endosulfan Sulfate | Endrin | Endrin Aldehyde |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 0.20UD | 0.40UD | 0.20UD | 0.20UD | 0.10UD | 0.40UD | 0.20UD | 0.10UD |

Groundwater
(Inorganics) (µg/L)

| Sample ID | Hexavalent Chromium | Cobalt | Copper | Iron | Lead | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 25U | 11 | 14 | 22000 | 10 | 2600 | 0.20U | 11 |
| MW-1 | 25U | NA | NA | NA | 4.4 | NA | NA | 8.9 |
| MW-1 | 25U | NA | NA | NA | 3.0U | NA | NA | 8.5 |
| RT-2 | 18000 | NA | NA | NA | NA | NA | NA | NA |
| RT-3 | 51000 | NA | NA | NA | NA | NA | NA | NA |

Groundwater
(Wet Chemistry)

| Sample ID | Arsenic Soluble (µg/L) | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) | Iron Soluble (mg/L) | Lead Soluble (µg/L) | Magnesium Soluble (mg/L) | Nickel Soluble (µg/L) | Potassium Soluble (mg/L) |
|---|---|---|---|---|---|---|---|---|
| MW-1 | NA | 18 | NA | 0.086 | NA | 9.0 | NA | 4.0 |
| MW-1 | NA | 29 | NA | 0.0039X | NA | 1.0U | NA | 71 |
| MW-1 | 54 | 21 | 4.3 | 10.5 | 3.0U | 10 | 7.0U | 2.5 |
| RT-2 | NA | NA | 17000 | NA | NA | NA | NA | NA |
| RT-3 | NA | NA | 54800 | NA | NA | NA | NA | NA |

Groundwater
(Hazardous
Characteristics)

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 1.0U | 1.0U | 1.0U | 1.0U | 7700JDX | 1.0U | 7.0U | 1.2J |
| MW-1 | 200UD | 200UD | 200UD | 200UD | 7900D | 200UD | 200UD | 200UD |
| MW-1 | 100UD | 100UD | 100UD | 100UD | 4900D | 100UD | 100UD | 100UD |
| RT-2 | 500UD | 500UD | 500UD | 500UD | 63000D | 500UD | 500UD | 500UD |
| RT-3 | 500UD | 500UD | 500UD | 500UD | 130000D | 500UD | 500UD | 500UD |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | Butyl benzyl phthalate | 2-Chloronaphthalene | 4-Chlorophenyl-phenyl ether | Chrysene | Dibenzo(a,h) anthracene | 3,3-Dichlorobenzidine | Diethyl phthalate | Dimethyl phthalate |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

Groundwater
(Pesticide) (µg/L)

| Sample ID | Heptachlor | Heptachlor Epoxide | Methoxychlor | Toxaphene | PCB-1016 | PCB-1221 | PCB-1232 | PCB-1242 |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 0.20UD | 0.20UD | 0.40UD | 8.0UD | 2.0UD | 2.0UD | 2.0UD | 2.0UD |

Groundwater
(Inorganics) (µg/L)

| Sample ID | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|
| MW-1 | 5.0U | 3.0U | 2.5 | 15 | 87X | 20U |
| MW-1 | NA | NA | NA | NA | 52X | NA |
| MW-1 | NA | NA | NA | NA | 43X | NA |
| RT-2 | NA | NA | NA | NA | NA | NA |
| RT-3 | NA | NA | NA | NA | NA | NA |

Groundwater
(Wet Chemistry)

| Sample ID | Sodium Soluble (mg/L) | Zinc Soluble (µg/L) | Calcium (mg/L) | Magnesium (mg/L) | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|---|---|---|---|
| MW-1 | 251 | NA | 19 | 10 | 4.6 | 251 |
| MW-1 | 136 | NA | NA | NA | NA | NA |
| MW-1 | 188 | 22X | NA | NA | NA | NA |
| RT-2 | NA | NA | NA | NA | NA | NA |
| RT-3 | NA | NA | NA | NA | NA | NA |

Groundwater
(Hazardous
Characteristics)

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 12J | 1.0U | 140J |
| MW-1 | 400UD | 200UD | 200UD | 400UD | 400UD | 200UD | 200UD | 200UD |
| MW-1 | 200UD | 100UD | 100UD | 200UD | 200UD | 100UD | 100UD | 100UD |
| RT-2 | 1000UD | 500UD | 500UD | 1000UD | 1000UD | 500UD | 500UD | 500UD |
| RT-3 | 1000UD | 500UD | 500UD | 1000UD | 1000UD | 450JD | 500UD | 1100JD |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | Di-n-butyl phthalate | 2,4-Dinitrotoluene | 2,6-Dinitrotoluene | 2,6-Dinitrotoluene | 2,6-Dinitrotoluene | Di-n-octyl phthalate | 1,2-Diphenylhydrazine | Fluoranthene |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 1.3JBX | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

Groundwater
(Pesticide) (µg/L)

| Sample ID | PCB-1248 | PCB-1254 | PCB-1260 |
|---|---|---|---|
| MW-1 | 2.0UD | 2.0UD | 2.0UD |

Groundwater
(Inorganics) (µg/L)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Wet Chemistry)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Hazardous
Characteristics)

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|
| MW-1 | 0.9J | 46J | 1.0U | 54J | 1.0U | 1.0U | 0.9J |
| MW-1 | 200UD | 200UD | 200UD | 400UD | 200UD | 200UD | 200UD |
| MW-1 | 100UD | 100UD | 100UD | 200UD | 100UD | 100UD | 100UD |
| RT-2 | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 500UD |
| RT-3 | 500UD | 500UD | 500UD | 1600JD | 500UD | 500UD | 500UD |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | Fluorene | Hexachlorobenzene | Hexachlorobutadiene | Hexachloro-cyclopentadiene | Hexachloroethane | Indeno(1,2,3-cd)pyrene | Isophorone | Naphthalene |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

Groundwater
(Pesticide) (µg/L)

| Sample ID |
|---|
| MW-1 |

Groundwater
(Inorganics) (µg/L)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Wet Chemistry)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Hazardous
Characteristics)

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | Nitrobenzene | n-Nitrosodi-methylamine | n-Nitrosodi-n-propylamine | n-Nitrosodi-phenylamine | Phenathrene | Pyrene | 1,2,4-Trichlorobenzene | 4-Chloroaniline |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 2.0U | 10U | 2.0U | 2.0U | 2.0U | 2.1J | 5.0U |

Groundwater
(Pesticide) (µg/L)

| Sample ID |
|---|
| MW-1 |

Groundwater
(Inorganics) (µg/L)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Wet Chemistry)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Hazardous
Characteristics)

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

**Groundwater (Semivolatiles) (µg/L)**

| Sample ID | 2-Methylnaphthalene | 2-Chloronaphthalene | 2-Nitroaniline | 3-Nitroaniline | Dibenzofuran | 4-Nitroaniline | 2-Chlorophenol | 2,4-Dichlorophenol |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

**Groundwater (Pesticide) (µg/L)**

| Sample ID |
|---|
| MW-1 |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

**Groundwater (Hazardous Characteristics)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

**Groundwater (Semivolatiles) (µg/L)**

| Sample ID | 2,4-Dimethylphenol | 4,6-Dinitro-2-methylphenol | 2,4-Dinitrophenol | 2-Nitrophenol | 4-Nitrophenol | 4-Chloro-3-methylphenol | Pentachlorophenol | Phenol |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 2.0U | 10U | 40U | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

**Groundwater (Pesticide) (µg/L)**

| Sample ID |
|---|
| MW-1 |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

**Groundwater (Hazardous Characteristics)**

| Sample ID |
|---|
| MW-1 |
| MW-1 |

TABLE SWMU-12

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 12
Randall Textron Plant
Granada, Mississippi

Groundwater
(Volatiles) (mg/L)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Semivolatiles) (µg/L)

| Sample ID | 2,4,6-Trichlorophenol | 2-Methylphenol | 4-Methylphenol | Benzoic Acid | 2,4,5-Trichlorophenol |
|---|---|---|---|---|---|
| MW-1 | 2.0U | 10U | 10U | 5.0U | 10U |

Groundwater
(Pesticide) (µg/L)

| Sample ID |
|---|
| MW-1 |

Groundwater
(Inorganics) (µg/L)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Wet Chemistry)

| Sample ID |
|---|
| MW-1 |
| MW-1 |
| MW-1 |
| RT-2 |
| RT-3 |

Groundwater
(Hazardous
Characteristics)

| Sample ID |
|---|
| MW-1 |
| MW-1 |

# SWMU 13 WASTEWATER TREATMENT PLANT

## SUMMARY

**Location:** SWMU 13 is located in the northeastern portion of the facility between the baseball field and Outfall Ditch (SWMU 7) and between the Sludge Lagoon (SWMU ) and Mississippi Highway No. 332.

**Description:** The two primary units of the Wastewater Treatment Plant are the Flash Mix Tank and the Clarifier.

The Flash Mix Tank has a capacity of 1,000 gallons with a 350 gallon tank for addition of flocculants . It is enclosed within a 25 foot square 20 foot tall building.

The Flash Mix Tank receives untreated water from the Wet Well and supernatant from the Sludge Lagoon.

The pH is adjusted in the tank and flocculants are added to promote solids separation.

The tank is discharged to the clarifier.

The concrete clarifier has a capacity of approximately 200,000 gallons.

Solids are separated as a sludge which is discharged to the Sludge Lagoon through an open-ended pipe.

The supernatant is sent to an aeration ladder to add dissolved oxygen.

The aerated wastewater discharges to the Outfall Ditch through an open-ended metal pipe.

The open-ended pipe is the compliance point under an NPDES permit.

**Investigation:** The potential impact from the Wastewater Treatment plant is indicated from the sediment and surface water samples from the Outfall Ditch as well as the effluent samples. The analytical data from the RI report are presented in Table SWMU 13 and Figure 44 for sediments and Table SWMU 13 and Figure 45 for surface water.

**Surface Water:** Surface Water samples were collected from six locations within the Outfall Ditch. These locations are shown on oversize drawing 5-45. Additional sampling was conducted within Riverdale Creek, upstream, at the point of discharge from the ditch to the creek, and downstream

of the discharge point. Samples were analyzed for VOCs, SVOCs, and metals.

Organic constituents and metals reported in the Outfall Ditch surface water samples in µg/L were:

| VOCs | SW10 | SW11 | SW12 | SW21A | SW21B | SW21C |
|---|---|---|---|---|---|---|
| TCE | 74 | 67 | 99 | 130 | 100 | 120 |
| 1,2-DCE | 26 | 24 | 39 | 98 | 86 | 97 |
| 1,1,1-TCA | ND | 1 | ND | ND | ND | ND |
| Methylene chloride | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | 6.2J | ND |
| Toluene | 2.0J | 1.8J | 1.7J | ND | ND | ND |
| Xylene | 1.4J | 1.2J | 1.1J | ND | ND | ND |

| Metals | SW10 | SW11 | SW12 | SW21A | SW21B | SW21C |
|---|---|---|---|---|---|---|
| Chromium (total) | 410 | 441 | 431 | 536 | 633 | 681 |
| Chromium (VI) | 85 | 172 | 164 | ND | ND | ND |
| Lead | 15 | ND | 3.9 | 12 (X) | 16 | 16 |
| Nickel | ND | ND | ND | ND | 7.7 | 10 |

**Sediments:** Sediment samples were collected from three (3) locations along the Outfall Ditch as shown in over size drawing 5-44 .. The reported concentrations in µg/kg were:

| VOC | SD-10 | SD-11 | SD-12 |
|---|---|---|---|
| PCE | ND | 4.2 (J) | ND |
| TCE | 37 | 470 | 7.1 (J) |
| 1,2-DCE | 28 | 95 | ND |
| Acetone | 36 (J) | ND | ND |

| Metals | SD-10 | SD-11 | SD-12 |
|---|---|---|---|
| Chromium | 8,000 | 9,680 | 405 |
| Lead | 135 | 295 | 12 |
| Nickel | 109 | 179 | 13 |
| Zinc | 116 | 148 | 31 |

Additional relevant data is presented in Table A; 1997 effluent data for the Wastewater Treatment Plant. Furthermore, groundwater adjacent to the Outfall Ditch has been monitored and is summarized in Section 2 and can be seen in Figures 5-46 through 5-63.

**Summary** The potential impact from the Wastewater Treatment Plant is evident from the sediment, surface water, and effluent data presented above and in Table SWMU 13, as well as the oversize drawings. Chromium, TCE and 1,2-DCE are the primary constituents found in these media. Furthermore, the Wastewater Treatment Plant is located within the TCE plume and along the apparent downgradient edge of the Chromium (VI) plume.

## TABLE A

## WASTEWATER TREATMENT PLANT
## EFFLUENT TO OUTFALL DITCH (µg/L)
## FEBRUARY 17 – 18, 1997

| Parameter | Concentration (ug/L) |
|---|---|
| **Detected Organics** | |
| Toluene | 1.94(J) |
| TCE | 7.06 |
| P-Chloro-m-creosol | 1.5(J) |
| Bis (-2-Ethylhexyl) Phthalate | 54.0 |
| N-Nitrosodiphenylamine | 3.7(J) |
| **Detected Metals** | |
| Aluminum | 0.07 |
| Barium | 0.056 |
| Iron | 0.51 |
| Magnesium | 3.10 |
| Manganese | 0.06 |
| **Part A Analytes** | |
| BOD | 5 |
| COD | 29 |
| TOC | 25.3 |
| **Part B Analytes** | |
| Bromide | 0.41 |
| Fluoride | 0.10 |
| Nitrate/Nitrite | 9.45 |
| Phosphorous | 2.10 |
| Sulfate | 328 |
| Surfactants | 0.15 |

# DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 13
## Randall Textron Plant
## Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide |
|---|---|---|---|---|---|---|---|---|---|
| SW-10 | | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-11 | | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-12 | | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21A | | 5/18/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21B | | 5/18/93 | 2.0U | 2.0U | 6.2J | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21C | | 5/18/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SW-21C | | 5/18/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium |
|---|---|---|---|---|---|---|---|---|---|
| SW-10 | | 2/23/93 | NA | NA | 5.0U | NA | NA | NA | 410 |
| SW-11 | | 2/23/93 | NA | NA | 5.0U | NA | NA | NA | 441 |
| SW-12 | | 2/23/93 | NA | NA | 5.0U | NA | NA | NA | 431 |
| SW-21A | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 536 |
| SW-21B | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 633 |
| SW-21C | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 681 |
| SW-21C | | 5/18/93 | NA | NA | 5.0U | NA | NA | NA | 663 |

**Surface Water (Wet Chemistry)**

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) | TDS (mg/L) | Sulfate (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| SW-10 | | 2/23/93 | 139 | 8.8 | 30 | 0.03X | NA | 1090 | 707 |
| SW-11 | | 2/23/93 | 118 | 8.8 | 30 | 0.02X | NA | 1030 | 577 |
| SW-12 | | 2/23/93 | 300 | 1.0U | 29 | 0.04X | NA | 1040 | 557 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide |
|---|---|---|---|---|---|---|---|---|---|
| SED-10 | 0-0.5 FT | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 36J | 2.0U |
| SED-11 | 0-0.5 FT | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |
| SED-12 | 0-0.5 FT | 2/23/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium |
|---|---|---|---|---|---|---|---|---|---|
| SED-10 | 0-0.5 FT | 2/23/93 | NA | NA | 4.2 | NA | NA | NA | 8000 |
| SED-11 | 0-0.5 FT | 2/23/93 | NA | NA | 4.6 | NA | NA | NA | 9680 |
| SED-12 | 0-0.5 FT | 2/23/93 | NA | NA | 3.6 | NA | NA | NA | 405 |

## DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 13
## Randall Textron Plant
## Granada, Mississippi

### Surface Water (Volatiles) (mg/L)

| Sample ID | 1,1-Dichloroethene | 1,1-Dichloroetane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 2.0U | 1.0U | 26 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-11 | 2.0U | 1.0U | 24 | 1.0U | 1.0U | 10U | 1.0J | 1.0U |
| SW-12 | 2.0U | 1.0U | 39 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21A | 2.0U | 1.0U | 98 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21B | 2.0U | 1.0U | 86 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 92 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 97 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |

### Surface Water (Inorganics) (µg/L)

| Sample ID | Hexavalent Chromium | Cobalt | Copper | Iron | Lead | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 85 | NA | NA | 327X | 15 | NA | NA | 7.0U |
| SW-11 | 172 | NA | NA | 200X | 3.0U | NA | NA | 7.0U |
| SW-12 | 164 | NA | NA | 229X | 3.9 | NA | NA | 7.0U |
| SW-21A | 25U | NA | NA | NA | 12X | NA | NA | 7.0U |
| SW-21B | 25U | NA | NA | NA | 16 | NA | NA | 7.7 |
| SW-21C | 25U | NA | NA | NA | 15X | NA | NA | 9.6 |
| SW-21C | 25U | NA | NA | NA | 16 | NA | NA | 10 |

### Surface Water (Wet Chemistry)

| Sample ID | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) | Iron Soluble (mg/L) | Magnesium Soluble (mg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Calcium (mg/L) | Magnesium (mg/L) |
|---|---|---|---|---|---|---|---|---|
| SW-10 | NA | NA | NA | NA | NA | NA | 92 | 2.9 |
| SW-11 | NA | NA | NA | NA | NA | NA | 79 | 2.8 |
| SW-12 | NA | NA | NA | NA | NA | NA | 82 | 3.0 |

### Sediment (Volatiles) (mg/kg)

| Sample ID | 1,1-Dichloroethene | 1,1-Dichloroethane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 2.0U | 1.0U | 28 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SED-11 | 2.0U | 1.0U | 95 | 1.0U | 1.0U | 10U | 1.0U | 1.0U |
| SED-12 | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U |

### Sediment (Inorganics) (mg/kg)

| Sample ID | Cobalt | Copper | Iron | Lead | Magnesium | Manganese | Mercury | Nickel |
|---|---|---|---|---|---|---|---|---|
| SED-10 | NA | NA | NA | 135 | NA | NA | NA | 109 |
| SED-11 | NA | NA | NA | 295 | NA | NA | NA | 179 |
| SED-12 | NA | NA | NA | 12 | NA | NA | NA | 13 |

## DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 13
### Randall Textron Plant
### Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 1.0U | 1.0U | 1.0U | 1.0U | 74 | 1.0U | 1.0U | 1.0U |
| SW-11 | 1.0U | 1.0U | 1.0U | 1.0U | 67 | 1.0U | 1.0U | 1.0U |
| SW-12 | 1.0U | 1.0U | 1.0U | 1.0U | 99 | 1.0U | 1.0U | 1.0U |
| SW-21A | 1.0U | 1.0U | 1.0U | 1.0U | 130 | 1.0U | 1.0U | 1.0U |
| SW-21B | 1.0U | 1.0U | 1.0U | 1.0U | 100 | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 120 | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 120 | 1.0U | 1.0U | 1.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|
| SW-10 | NA | NA | NA | NA | 22X | NA |
| SW-11 | NA | NA | NA | NA | 12X | NA |
| SW-12 | NA | NA | NA | NA | 14X | NA |
| SW-21A | NA | NA | NA | NA | 14X | NA |
| SW-21B | NA | NA | NA | NA | 13X | NA |
| SW-21C | NA | NA | NA | NA | 18X | NA |
| SW-21C | NA | NA | NA | NA | 18X | NA |

**Surface Water (Wet Chemistry)**

| Sample ID | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|
| SW-10 | 3.2 | 270 |
| SW-11 | 3.6 | 263 |
| SW-12 | 3.0 | 269 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | cis-1,3-Dichloropropene | trans-1,3-Dichloropropene | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 37 | 1.0U | 1.0U |
| SED-11 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 470 | 1.0U | 1.0U |
| SED-12 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 7.1J | 1.0U | 1.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Potassium | Selenium | Silver | Sodium | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|---|---|
| SED-10 | NA | NA | NA | NA | NA | NA | 116 | NA |
| SED-11 | NA | NA | NA | NA | NA | NA | 148 | NA |
| SED-12 | NA | NA | NA | NA | NA | NA | 31 | NA |

## DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 13
Randall Textron Plant
Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene |
|---|---|---|---|---|---|---|---|---|
| SW-10 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 2.0J |
| SW-11 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.8J |
| SW-12 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.7J |
| SW-21A | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SW-21B | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |
| SW-21A |
| SW-21B |
| SW-21C |
| SW-21C |

**Surface Water (Wet Chemistry)**

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U |
| SED-11 | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 4.2J | 1.0U |
| SED-12 | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID | Percent Solids (%) |
|---|---|
| SED-10 | 55.0 |
| SED-11 | 42.2 |
| SED-12 | 67.7 |

## DATA SUMMARY TABLE FOR SOLID WASTE MANAGEMENT UNIT 13
### Randall Textron Plant
### Granada, Mississippi

**Surface Water (Volatiles) (mg/L)**

| Sample ID | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|
| SW-10 | 1.0U | 1.0U | 1.0U | 1.4J | 1.0U | 1.0U | 1.0U |
| SW-11 | 1.0U | 1.0U | 1.0U | 1.2J | 1.0U | 1.0U | 1.0U |
| SW-12 | 1.0U | 1.0U | 1.0U | 1.1J | 1.0U | 1.0U | 1.0U |
| SW-21A | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SW-21B | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SW-21C | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Surface Water (Inorganics) (µg/L)**

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |
| SW-21A |
| SW-21B |
| SW-21C |
| SW-21C |

**Surface Water (Wet Chemistry)**

| Sample ID |
|---|
| SW-10 |
| SW-11 |
| SW-12 |

**Sediment (Volatiles) (mg/kg)**

| Sample ID | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|
| SED-10 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SED-11 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SED-12 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Sediment (Inorganics) (mg/kg)**

| Sample ID |
|---|
| SED-10 |
| SED-11 |
| SED-12 |

# SWMU 14 DESTRUCT PIT
# OR
# CHROMIUM REDUCTION UNIT/HOLDING SUMP

## SUMMARY

**Location:** Eastern portion of facility along edge of main building and south of the Equalization Lagoon.

**Description:** Concrete pit measuring 20 feet by 10 feet by 15 feet deep (10 feet below ground surface, 5 feet extending above ground).

Sulfur dioxide was used to convert hexavalent chromium to trivalent chromium.

From 1961 to 1977 discharged to process sewers to the Equalization Lagoon to the Outfall Ditch to Riverdale Creek.

From 1977 to 1990 discharged to Equalization Lagoon to Wet Well to Wastewater Treatment Plant.

From 1990 to 1993 discharged to wet well and then to Wastewater Treatment Plant.

From 1993 to Present used as holding sump for hexavalent chromium.

**Investigation:** Monitoring Well MW-23 is located approximately 25 feet from the Destruct Pit. Soil samples were collected at 0 to 0.5 feet, 2 to 4 feet, and 6 to 8 feet below ground surface.

Data are presented in Table  and Figures 5-1 through 5-43 for soil and Table  and Figures 5-46 through 5-63 for groundwater.

Chlorinated VOCs, BETX, and acetone were all below their detection limits.

Metals were reported in mg/kg as:

Risk based

Risk based
Ind. 3.8 mg/kg
Res. 0.42 mg/kg

| Depth | Chromium | Nickel | Arsenic | Lead | Zinc |
|---|---|---|---|---|---|
| | | 2300. | | | |
| 0-0.5 | 25.5 | 14.4 | 5.2 | 18.3 | 41.6 |
| 2-4 | 20.4 | 15.3 | 2.9 | 19.4 | 35.9 |
| 6-8 | 20.0-30.1 | 20.0-20.3 | 7.1-11.2 | 19.4-23.1 | 57.8-59.4 |

**Groundwater:** Organic constituents in groundwater in µg/L reported for MW-23 were:

| PCE | TCE | 1,2-DCE | VC | 1,1-DCE |
|---|---|---|---|---|
| 2.5 (J) | 6,400 (D) – 9,000 (D) | 2,400 (D) – 4,100 (D) | ND | 9.6 (J) |

Metals in groundwater in µg/L reported for MW-23 were:

| Metals | Unfiltered | Slow Purge |
|---|---|---|
| Cr Total | 1,180-1,230 | 200-293 |
| Cr (VI) | 210-279 | 210-279 |
| Nickel | 172-246 | 8-10 |
| Zinc | 519-666 | 22-75 |

**Summary**: As seen in oversized drawings 5-46, 5-47 and 5-63, the Destruct Pit is within groundwater plumes for VOCs and for hexavalent chromium. The chromium plume is largely due to chromium VI and appears to be of limited extent. Reducing conditions as evidenced by the presence of reductive dechlorination. Products of TCE may result in conversion of chromium (VI) to chromium (III) with subsequent precipitation. Additional investigation would not provide greater delineation that would further facilitate the anticipated Corrective Measure Study and thus selection of a remedy for the site and this SWMU. Additional sampling might be conducted during the preliminary design phase or during construction of a remedial system.

TABLE SWMU-14

# DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
## Randall Textron Plant
## Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride |
|---|---|---|---|---|---|---|---|
| MW-23 | 0-0.5 FT | 11/23/92 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |
| MW-23 | 2-4 FT | 11/23/92 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |
| MW-23 | 6-8 FT | 11/23/92 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |
| MW-23 | 6-8 FT | 11/23/92 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium |
|---|---|---|---|---|---|---|---|
| MW-23 | 0-0.5 FT | 11/23/92 | NA | NA | 5.2 | NA | NA |
| MW-23 | 2-4 FT | 11/23/92 | NA | NA | 2.9 | NA | NA |
| MW-23 | 6-8 FT | 11/23/92 | NA | NA | 11.2 | NA | NA |
| MW-23 | 6-8 FT | 11/23/92 | NA | NA | 7.1 | NA | NA |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride |
|---|---|---|---|---|---|---|---|
| MW-23S | | 1/12/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |
| MW-23S | | 2/23/93 | 100UD | 100UD | 100UD | 100UD | 100UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium |
|---|---|---|---|---|---|---|---|
| MW-23S | | 1/12/93 | NA | NA | 165 | NA | NA |
| MW-23S | | 2/23/93 | NA | NA | 134 | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) |
|---|---|---|---|---|---|---|---|
| MW-23S | | 1/12/93 | 138 | 1.0U | 60 | 0.10 | NA |
| MW-23S | | 2/23/93 | 116 | 1.0U | 54 | 0.01U | NA |

TABLE SWMU-14

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
## Randall Textron Plant
## Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroetane | 1,2-Dichloroethene (Total) | Chloroform |
|---|---|---|---|---|---|---|
| MW-23 | 160 | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 33J | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 5.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 5.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Cadmium | Chromium | Cobalt | Copper | Iron | Lead |
|---|---|---|---|---|---|---|
| MW-23 | NA | 25.5 | NA | NA | NA | 18.3 |
| MW-23 | NA | 20.4 | NA | NA | NA | 19.4 |
| MW-23 | NA | 20.0 | NA | NA | NA | 23.1 |
| MW-23 | NA | 30.1 | NA | NA | NA | 19.4 |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroethane | 1,2-Dichloroethene (Total) | Chloroform |
|---|---|---|---|---|---|---|
| MW-23S | 5.0U | 2.0U | 9.6J | 1.0U | 4100D | 1.0U |
| MW-23S | 250UD | 100UD | 100UD | 50UD | 2400D | 50UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Cadmium | Chromium | Hexavalent Chromium | Cobalt | Copper | Iron |
|---|---|---|---|---|---|---|
| MW-23S | NA | 1230 | 210 | NA | NA | NA |
| MW-23S | NA | 1180 | 279 | NA | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | TDS (mg/L) | Sulfate (mg/L) | Arsenic Soluble (µg/L) | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) | Iron Soluble (mg/L) |
|---|---|---|---|---|---|---|
| MW-23S | 614 | 142 | 5.0U | 23 | 200 | 0.023X |
| MW-23S | 454 | 163 | 5.0U | 22 | 293 | 0.204X |

## TABLE SWMU-14

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
**Randall Textron Plant**
**Granada, Mississippi**

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane |
|---|---|---|---|---|---|---|
| MW-23 | 1.0U | 19J | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Magnesium | Manganese | Mercury | Nickel | Potassium | Selenium |
|---|---|---|---|---|---|---|
| MW-23 | NA | NA | NA | 14.4 | NA | NA |
| MW-23 | NA | NA | NA | 15.3 | NA | NA |
| MW-23 | NA | NA | NA | 20.3 | NA | NA |
| MW-23 | NA | NA | NA | 20.0 | NA | NA |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane |
|---|---|---|---|---|---|---|
| MW-23S | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23S | 50UD | 500UD | 50UD | 50UD | 50UD | 50UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID | Lead | Manganese | Mercury | Nickel | Selenium | Silver |
|---|---|---|---|---|---|---|
| MW-23S | 164 | NA | NA | 246 | NA | NA |
| MW-23S | 174 | NA | NA | 172 | NA | NA |

**Groundwater**
**(Wet Chemistry)**

| Sample ID | Lead Soluble (µg/L) | Magnesium Soluble (mg/L) | Nickel Soluble (µg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Zinc Soluble (µg/L) |
|---|---|---|---|---|---|---|
| MW-23S | 3.0U | 9.2 | 8.1 | 1.8 | 118 | 22X |
| MW-23S | 3.0U | 8.5 | 10 | 2.3 | 109 | 25X |

## TABLE SWMU-14

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
### Randall Textron Plant
### Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene |
|---|---|---|---|---|---|---|
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Silver | Sodium | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|
| MW-23 | NA | NA | NA | NA | 41.6 | NA |
| MW-23 | NA | NA | NA | NA | 35.9 | NA |
| MW-23 | NA | NA | NA | NA | 57.8 | NA |
| MW-23 | NA | NA | NA | NA | 59.4 | NA |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene |
|---|---|---|---|---|---|---|
| MW-23S | 1.0U | 1.0U | 9000D | 1.0U | 1.0U | 1.0U |
| MW-23S | 50UD | 50UD | 6400D | 50UD | 50UD | 50UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|
| MW-23S | NA | NA | 666 | NA |
| MW-23S | NA | NA | 519 | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Calcium (mg/L) | Magnesium (mg/L) | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|---|---|
| MW-23S | NA | NA | NA | NA |
| MW-23S | NA | NA | NA | NA |

TABLE SWMU-14

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
Randall Textron Plant
Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene |
|---|---|---|---|---|---|---|
| MW-23 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Percent Solids (%) |
|---|---|
| MW-23 | 81.7 |
| MW-23 | 80.2 |
| MW-23 | 80.3 |
| MW-23 | 79.1 |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene |
|---|---|---|---|---|---|---|
| MW-23S | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 2.5J |
| MW-23S | 100UD | 50UD | 50UD | 100UD | 100UD | 50UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

TABLE SWMU-14

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
### Randall Textron Plant
### Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) |
|---|---|---|---|---|---|---|
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID |
|---|
| MW-23 |
| MW-23 |
| MW-23 |
| MW-23 |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) |
|---|---|---|---|---|---|---|
| MW-23S | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |
| MW-23S | 50UD | 50UD | 50UD | 50UD | 50UD | 100UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

TABLE SWMU-14

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 14
Randall Textron Plant
Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|
| MW-23 | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID |
|---|
| MW-23 |
| MW-23 |
| MW-23 |
| MW-23 |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|
| MW-23S | 1.0U | 1.0U | 1.0U |
| MW-23S | 50UD | 50UD | 50UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

# SWMU 15 PROCESS SEWERS

## SUMMARY

**Location:** Located throughout the Main Plant Building and parallel to the building from the Destruct Pit (SWMU 14) to the wet well (SWMU 12) continuing on to the Wastewater Treatment Plant (SWMU 13).

**Description:**

- Metal and clay pipes that serve or have served to collect wastewater from all manufacturing rinses.
- Some sections have been removed or are no longer carrying the same waste.
- The section that runs between the Destruct Pit and Wet Well once carried treated chromium-containing wastewater.

**Investigation:** Soil and/or groundwater samples were collected from wells RT-2, RT-3, and MW-23.

Data are presented in Table  and Figures 5-1 through 5-43 for soil and Table  and Figures 5-46 through 5-63 for groundwater.

**Groundwater:** Organic constituents in groundwater in µg/L reported for RT2, RT3, and MW-23 were:

| | PCE | TCE | 1,2-DCE | Vinyl Chloride | Methylene Chloride |
|---|---|---|---|---|---|
| RT-2 | ND | 63,000 (D) | 3,600 (JD) | ND | ND |
| RT-3 | 450 (JD) | 130,000 (D) | 5,100 (D) | ND | ND |
| MW-23 | 2.5 (J) | 6,400 (D) -9,000 (D) | 2,400 (D) -4,100 (D) | ND | ND |

| | Ethyl Benzene | Xylene | Toluene |
|---|---|---|---|
| RT-2 | ND | ND | ND |
| RT-3 | ND | 1,600 (JD) | 1,100 (JD) |
| MW-23 | ND | ND | ND |

Metal detections reported for groundwater in μg/L for Wells RT-2, RT-3, and MW-23 were:

| | Unfiltered | | | Slow Purge | | |
|---|---|---|---|---|---|---|
| Metal | RT-2 | RT-3 | MW-23 | RT-2 | RT-3 | MW-2 |
| Arsenic | NA | NA | 134-165 | NA | NA | ND |
| Nickel | NA | NA | 172-246 | NA | NA | 8-10 |
| Chromium (total) | 20,100 | 58,800 | 1,180-1,230 | NA | NA | 200-293 |
| Chromium (VI) | 18,000 | 51,000 | 210-279 | NA | NA | 210-279 |
| Zinc | NA | NA | 519-666 | NA | NA | 22-75 |

The data show the impact to groundwater to be largely due to TCE and its daughter product, 1,2-DCE as well as chromium (VI). Some toluene and xylenes were also detected.

**Soil Impact:** The only VOC detected in soils collected from MW-23 was acetone at 160 ug/KG, 33 (J qualified) ug/Kg, obtained from the 0 - 0.5 Ft and 2-4 ft intervals, respectively

Metals detected from soils obtained from MW-23 were as follows:

| Metal | 0-0.5 ft BGS | 4-6 ft BGS | 6-8 ft BGS |
|---|---|---|---|
| Arsenic | 5.2 | 2.9 | 7.1-11.2 |
| Chromium (total) | 25.5 | 20.4 | 20.0-30.1 |
| Lead | 18.3 | 19.4 | 19.4-23.1 |
| Nickel | 14.4 | 15.3 | 20.0-20.3 |
| Zinc | 41.6 | 35.9 | 57.8-59.4 |

More recent data for RT-2 is presented in Tables B and C for the 1998 Compliance Monitoring for the Equalization Lagoon.

**Summary**: The sewer line that runs from the Destruct Pit to the Wet Well is within both the TCE plume and chromium (VI) plume. This area may have been impacted from this portion of the sewers. However, other potential sources are the Destruct Pit, the former Storage Tank Area, and the Equalization Lagoon. Other sewer lines run beneath the building where drilling is impractical and thus the extent of potential beneath the building can not be readily determined. However, sufficient information is available in order to conduct a Corrective Measures Study.

**TABLE B**

**EQUALIZATION LAGOON COMPLIANCE MONITORING**
**METALS IN GROUNDWATER (µg/L)**
**NOVEMBER 23, 1998[a]**

| Well | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|
| MW1-01 (RT-1) | ND | ND | ND | ND | ND | ND | 5.76 | ND |
| MW2-01 (RT-2) | ND | ND | ND | MCL 0.10 mg/l 15,700 mg/l | ND | ND | ND | ND |
| MW4-01 (RT-4) | ND | ND | ND | ND | ND | ND | ND | ND |
| MW5-01 (RT-5) | ND | ND | ND | 793 | ND | ND | ND | ND |

[a]Method SW 6010 except for Mercury (SW 7470).

base program
detection → compliance → corr. action

## TABLE C

## EQUALIZATION LAGOON COMPLIANCE MONITORING
## VOCs IN GROUNDWATER (µg/L)
## NOVEMBER 23, 1998[a, b, c]

| Well | Benzene | Toluene | Xylene | PCE | TCE | 1,2-DCE | 1,1,1-TCA | 1,1,2-TCA | 1,1-DCA | 1,1-DCE | Vinyl Chloride | Chloro-Ethane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW1-01 (RT-1) | | | | | µg/L .005 mg/L<br>0.124 mg/L | | | | | | | |
| MW2-01 (RT-2) | 23.6 | 10.3 | 31.5 | 39.8 | 13,800 | 26.2 | 16.3 | | 38.3 | 81.2 | 3,000 | |
| MW4-01 (RT-4) | | | | | 575 | 52.6 | | | 5.9 | 12.5 | 612 | |
| MW5-01 (RT-5) | | | | 14.2 | 11,600 | 17.9 | 12.8 | 6.3 | 24.5 | 36.5 | 242 | 13.3 |

[a]No SVOC detections (Method SW 8270).
[b]Method SW 8260 for VOCs.

TABLE SWMU-15

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 15
### Randall Textron Plant
### Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene |
|---|---|---|---|---|---|---|---|
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID |
|---|
| MW-23 |
| MW-23 |
| MW-23 |
| MW-23 |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene |
|---|---|---|---|---|---|---|---|
| MW-23S | 2.0U | 2.5J | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23S | 100UD | 50UD | 50UD | 50UD | 50UD | 50UD | 50UD |
| RT-2 | 1000UD | 500UD | 500UD | 500UD | 500UD | 500UD | 500UD |
| RT-3 | 1000UD | 450JD | 1100JD | 500UD | 500UD | 500UD | 500UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |
| RT-2 |
| RT-3 |

**Groundwater**
**(Wet Chemistry)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

TABLE SWMU-15

DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 15
Randall Textron Plant
Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 2.0U | 1.0U | 1.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID |
|---|
| MW-23 |
| MW-23 |
| MW-23 |
| MW-23 |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|
| MW-23S | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-23S | 100UD | 50UD | 50UD | 50UD |
| RT-2 | 1000UD | 500UD | 500UD | 500UD |
| RT-3 | 1600JD | 500UD | 500UD | 500UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |
| RT-2 |
| RT-3 |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| MW-23S |
| MW-23S |

TABLE SWMU-15

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 15
Randall Textron Plant
Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroetane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone |
|---|---|---|---|---|---|---|---|
| MW-23 | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 19J |
| MW-23 | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 10U |
| MW-23 | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 10U |
| MW-23 | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U | 10U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Chromium | Cobalt | Copper | Iron | Lead | Magnesium | Manganese |
|---|---|---|---|---|---|---|---|
| MW-23 | 25.5 | NA | NA | NA | 18.3 | NA | NA |
| MW-23 | 20.4 | NA | NA | NA | 19.4 | NA | NA |
| MW-23 | 20.0 | NA | NA | NA | 23.1 | NA | NA |
| MW-23 | 30.1 | NA | NA | NA | 19.4 | NA | NA |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroethane | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone |
|---|---|---|---|---|---|---|---|
| MW-23S | 2.0U | 9.6J | 1.0U | 4100D | 1.0U | 1.0U | 10U |
| MW-23S | 100UD | 100UD | 50UD | 2400D | 50UD | 50UD | 500UD |
| RT-2 | 1000UD | 1000UD | 500UD | 3600JD | 500UD | 500UD | 5000UD |
| RT-3 | 1000UD | 1000UD | 500UD | 5100D | 500UD | 500UD | 5000UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID | Chromium | Hexavalent Chromium | Cobalt | Copper | Iron | Lead | Manganese |
|---|---|---|---|---|---|---|---|
| MW-23S | 1230 | 210 | NA | NA | NA | 164 | NA |
| MW-23S | 1180 | 279 | NA | NA | NA | 174 | NA |
| RT-2 | 20100 | 18000 | NA | NA | NA | NA | NA |
| RT-3 | 58800 | 51000 | NA | NA | NA | NA | NA |

**Groundwater**
**(Wet Chemistry)**

| Sample ID | Sulfate (mg/L) | Arsenic Soluble (µg/L) | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) | Iron Soluble (mg/L) | Lead Soluble (µg/L) | Magnesium Soluble (mg/L) |
|---|---|---|---|---|---|---|---|
| MW-23S | 142 | 5.0U | 23 | 200 | 0.023X | 3.0U | 9.2 |
| MW-23S | 163 | 5.0U | 22 | 293 | 0.204X | 3.0U | 8.5 |

TABLE SWMU-15

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 15
### Randall Textron Plant
### Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene |
|---|---|---|---|---|---|---|---|
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Mercury | Nickel | Potassium | Selenium | Silver | Sodium | Thallium |
|---|---|---|---|---|---|---|---|
| MW-23 | NA | 14.4 | NA | NA | NA | NA | NA |
| MW-23 | NA | 15.3 | NA | NA | NA | NA | NA |
| MW-23 | NA | 20.3 | NA | NA | NA | NA | NA |
| MW-23 | NA | 20.0 | NA | NA | NA | NA | NA |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene |
|---|---|---|---|---|---|---|---|
| MW-23S | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 9000D |
| MW-23S | 50UD | 50UD | 50UD | 50UD | 50UD | 50UD | 6400D |
| RT-2 | 500UD | 500UD | 500UD | 500UD | 500UD | 500UD | 63000D |
| RT-3 | 500UD | 500UD | 500UD | 500UD | 500UD | 500UD | 130000D |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc |
|---|---|---|---|---|---|---|---|
| MW-23S | NA | 246 | NA | NA | NA | NA | 666 |
| MW-23S | NA | 172 | NA | NA | NA | NA | 519 |
| RT-2 | NA | NA | NA | NA | NA | NA | NA |
| RT-3 | NA | NA | NA | NA | NA | NA | NA |

**Groundwater**
**(Wet Chemistry)**

| Sample ID | Nickel Soluble (µg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Zinc Soluble (µg/L) | Calcium (mg/L) | Magnesium (mg/L) | Potassium (mg/L) |
|---|---|---|---|---|---|---|---|
| MW-23S | 8.1 | 1.8 | 118 | 22X | NA | NA | NA |
| MW-23S | 10 | 2.3 | 109 | 25X | NA | NA | NA |

TABLE SWMU-15

## DATA SUMMARY FOR SOLID WASTE MANAGEMENT UNIT 15
## Randall Textron Plant
## Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone |
|---|---|---|---|---|---|---|---|
| MW-23 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U |
| MW-23 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Vanadium | Zinc | Cyanide | Percent Solids (%) |
|---|---|---|---|---|
| MW-23 | NA | 41.6 | NA | 81.7 |
| MW-23 | NA | 35.9 | NA | 80.2 |
| MW-23 | NA | 57.8 | NA | 80.3 |
| MW-23 | NA | 59.4 | NA | 79.1 |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone |
|---|---|---|---|---|---|---|---|
| MW-23S | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U |
| MW-23S | 50UD | 50UD | 50UD | 100UD | 50UD | 50UD | 100UD |
| RT-2 | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 1000UD |
| RT-3 | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 1000UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID | Cyanide |
|---|---|
| MW-23S | NA |
| MW-23S | NA |
| RT-2 | NA |
| RT-3 | NA |

**Groundwater**
**(Wet Chemistry)**

| Sample ID | Sodium (mg/L) |
|---|---|
| MW-23S | NA |
| MW-23S | NA |

# AOC A

## FORMER TRICHLOROETHYLENE (TCE) STORAGE AREA

### SUMMARY

**Location:** The former TCE Storage area was located in the southeastern portion of the Site between Warehouse Building 2 and the Main Plant Building adjacent to the Roll Department Building. AOC A is located approximately upgradient of AOC B, the Former Toluene Underground Storage Tank Area.

**Description:** The area formerly contained two aboveground storage tanks with below ground piping.

The tank capacities were 10,000 and 15,000 gallons.

There was, reportedly, no secondary containment.

Tanks were installed in 1973 and removed in the early 1980s following a reported release from the underground piping.

A new 5,000-gallon steel tank was placed in a concrete berm and aboveground piping was installed.

TCE use was discontinued in 1992.

**Investigation:** Several wells and soil borings were located in proximity of the former tank and underground piping. Free product TCE or DNAPL was found in wells. More than 200 gallons of TCE were recovered by separate phase recovery system and bailing once recovery from the mechanical system was no longer productive.

Data are presented in Table AOC A and Figures 5-1 through 5-43 for soil and Table AOC A and Figures 5-46 through 5-63 for groundwater. Table AOC A contains data for all constituents.

**Soils:** Samples were collected from 20 borings, mostly within a radius of 100 feet of the DNAPL recovery well. Those located within AOC A had the following range of concentrations VOCs and metals in (µg/L).

| Constituent | Depth (feet below grade) | | |
|---|---|---|---|
| Constituent | Depth (ft below grade) | | |
| | 0 - 0.5 | 2-4 | 6-8 |
| PCE | ND – 5,000 (JD) | ND – 11,000 (JD) | ND – 6,400 (J) |
| TCE | ND – 1,500,000 (D) | ND – 1,800,000 (D) | ND – 1,700,000 (D) |
| 1,2-DCE | ND– 6,200 (JD) | ND – 54,000 (D) | ND – 15,000 (JD) |
| Vinyl Chloride | ND | ND | ND |
| Toluene | ND – 30 | ND – 12(J) | ND – 10 (J) |
| Acetone | 96 – 23,000 (J) | ND – 120 | ND – 36,000 (J) |
| Methylene Chloride | ND – 22 (J) | ND – 20 (J) | ND – 5,100 (JD) |
| Xylene | ND – 8.3 (J) | ND | ND |
| Ethyl Benzene | ND | ND | ND |
| 1,1,1-TCA | ND | ND | ND – 5,600 (JD) |
| MEK | 19 (J) ? | ? | ? |
| **Metals** | | | |
| Chromium | 6.5 – 57.0 | 5.8 – 104 | 7.9 – 37.2 |
| Nickel | 2.7 – 22.7 | 1.9 – 35.6 | 2.7 – 34.3 |
| Arsenic | 2.2 – 9.4 | 1.6 – 6.8 | 0.4 – 24.7 |
| Lead | 9.9 – 34.6 | 7.8 – 49.4 | 7.5 – 25.2 |
| Zinc | 14 – 121 | 6.5 – 102 | 27 – 80.5 |

The soil data are, as expected, largely indicative of TCE impact. Many other constituents are reported as (J) qualified because of the relatively high concentrations of TCE in some samples that required large dilutions in order to perform the analysis. Natural attenuation due to anaerobic biodegradation (reductive dechlorination) is indicated by the presence of daughter products. Impact from metals is minimal. Greater detail is provided in oversized drawings 5-1 through 5-43.

**Groundwater:** Groundwater samples have been collected from within AOC A, MW-25, MW-8, and MW-11, as well as in several downgradient, MW-24, MW-23, RT-3, RT-2, and MW-3, as well as monitoring wells within the former on-site landfill, and upgradient locations. Concentrations of organic constituents within the center of AOC A are indicated below:

| | Range of Two Sampling Events (µg/L) |
|---|---|
| **VOCs** | |
| PCE | ND |
| TCE | 240,000 (D) – 360,000 (D) |
| 1,2-DCE | ND – 160,000 (D) |
| Vinyl Chloride | ND |
| Ethyl Benzene | ND |
| Xylene | ND |
| Toluene | ND |
| Methylene Chloride | ND - 1,700(J) |
| Acetone | ND |

| | Unfiltered | Slow Purge |
|---|---|---|
| **Metals** | | |
| Arsenic | 119 - 144 | ND |
| Lead | 140 - 166 | ND |
| Zinc (suspended) | 563 – 823 | 18-36 |
| Nickel | 186 - 240 | 13-14 |
| Chromium (total) | 378 – 476 | 378-476 |
| Chromium (VI) | ND | ND |

Metals are reported here as both unfiltered metals (same values as in Table AOC B) and slow purge metals (same values as on the oversize drawings). The later data were generated from a second sampling event to distinguish between suspended and dissolved metals and are thought to be more representative of metals that could migrate within the aquifer.

As for soils, groundwater is impart largely due to TCE. The ongoing occurrence of reductive dechlorination is evident from the presence of 1,2-DCE, a known anaerobic degradation product of TCE. Impact from chromium and to a lessor extent, nickel and zinc were observed.

**Summary**: Numerous soil borings and wells are located within and nearby AOC A. DNAPL was identified and over 200 gallons of TCE recovered. The extensive distribution of monitoring wells has defined the TCE plume and provides adequate information to proceed with a Corrective Measure Study (CSM).

TABLE AOC A

DATA SUMMARY FOR AREA OF CONCERN A
Randall Textron Plant
Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25 | 0-0.5 FT | 12/16/92 | 2.0U | 2.0U | 2.0U | 2.0U | 9.8J | 96 | 2.0U | 2.0U | 1.0U |
| MW-25 | 2-4 FT | 12/16/92 | 2.0U | 2.0U | 2.0U | 2.0U | 8.9J | 58J | 2.0U | 2.0U | 1.0U |
| MW-25 | 6-8 FT | 12/16/92 | 2.0U | 2.0U | 2.0U | 2.0U | 9.9J | 5.0U | 2.0U | 2.0U | 1.0U |
| SB-21 | 0-0.5 FT | 5/19/93 | 2.0U | 2.0U | 2.0U | 2.0U | 22J | 1100D | 2.0U | 2.0U | 1.0U |
| SB-21 | 2-4 FT | 5/19/93 | 2.0U | 2.0U | 2.0U | 2.0U | 20J | 5.0U | 2.0U | 2.0U | 1.0U |
| SB-21 | 6-8 FT | 5/19/93 | 2.0U | 2.0U | 2.0U | 2.0U | 33 | 27J | 2.0U | 2.0U | 1.0U |
| SB-22 | 0-0.5 FT | 5/19/93 | 6250UD | 6250UD | 6250UD | 6250UD | 6250UD | 23000JD | 6250UD | 6250UD | 3250UD |
| SB-22 | 2-4 FT | 5/19/93 | 6250UD | 6250UD | 6250UD | 6250UD | 6250UD | 15750UD | 6250UD | 6250UD | 3250UD |
| SB-22 | 6-8 FT | 5/19/93 | 6250UD | 6250UD | 6250UD | 6250UD | 5100JD | 36000JD | 6250UD | 6250UD | 3250UD |
| SB-23 | 0-0.5 FT | 5/19/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 170 | 2.0U | 2.0U | 1.0U |
| SB-23 | 2-4 FT | 5/19/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 120 | 2.0U | 2.0U | 1.0U |
| SB-23 | 6-8 FT | 5/19/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 100 | 2.0U | 2.0U | 1.0U |
| SB-25 | 0-0.5 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 110 | 2.0U | 2.0U | 1.0U |
| SB-25 | 2-4 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 65JD | 2.0U | 2.0U | 1.0U |
| SB-25 | 6-8 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U | 2.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Calcium | Chromium | Cobalt |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25 | 0-0.5 FT | 12/16/92 | NA | NA | 4.8 | NA | NA | NA | NA | 57.0 | NA |
| MW-25 | 2-4 FT | 12/16/92 | NA | NA | 6.8 | NA | NA | NA | NA | 104 | NA |
| MW-25 | 6-8 FT | 12/16/92 | NA | NA | 24.7 | NA | NA | NA | NA | 37.2 | NA |
| SB-21 | 0-0.5 FT | 5/19/93 | NA | NA | 8.6 | NA | NA | NA | NA | 52 | NA |
| SB-21 | 2-4 FT | 5/19/93 | NA | NA | 1.6 | NA | NA | NA | NA | 5.8 | NA |
| SB-21 | 6-8 FT | 5/19/93 | NA | NA | 4.5 | NA | NA | NA | NA | 9.4 | NA |
| SB-22 | 0-0.5 FT | 5/19/93 | NA | NA | 2.2 | NA | NA | NA | NA | 6.5 | NA |
| SB-22 | 2-4 FT | 5/19/93 | NA | NA | 2.6 | NA | NA | NA | NA | 11 | NA |
| SB-22 | 6-8 FT | 5/19/93 | NA | NA | 0.41 | NA | NA | NA | NA | 7.9 | NA |
| SB-23 | 0-0.5 FT | 5/19/93 | NA | NA | 6.7 | NA | NA | NA | NA | 17 | NA |
| SB-23 | 2-4 FT | 5/19/93 | NA | NA | 1.9 | NA | NA | NA | NA | 12 | NA |
| SB-23 | 6-8 FT | 5/19/93 | NA | NA | 1.2 | NA | NA | NA | NA | 12 | NA |
| SB-25 | 0-0.5 FT | 5/20/93 | NA | NA | 9.4 | NA | NA | NA | NA | 17 | NA |
| SB-25 | 2-4 FT | 5/20/93 | NA | NA | 3.9 | NA | NA | NA | NA | 9.1 | NA |
| SB-25 | 6-8 FT | 5/20/93 | NA | NA | 11 | NA | NA | NA | NA | 12 | NA |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | | 1/12/93 | 1000UD | 1000UD | 1000UD | 1000UD | 1700JD | 2500UD | 1000UD | 1000UD | 500UD |
| MW-25 | | 2/24/93 | 1000UD | 1000UD | 12000UD | 1000UD | 1000UD | 2500UD | 1000UD | 1000UD | 500UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium | Hexavalent Chromium | Cobalt |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | | 1/12/93 | NA | NA | 144 | NA | NA | NA | 476 | 25U | NA |
| MW-25 | | 2/24/93 | NA | NA | 119 | NA | NA | NA | 378 | 25U | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) | TDS (mg/L) | Sulfate (mg/L) | Arsenic Soluble (µg/L) | Calcium Soluble (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | | 1/12/93 | 206 | 1.0U | 121 | 0.01 | NA | 1180 | 91 | 5.0U | 18 |
| MW-25 | | 2/24/93 | 170 | 1.0U | 149 | 0.03X | NA | 690 | 82 | 5.0U | 13 |

TABLE AOC A

DATA SUMMARY FOR AREA OF CONCERN A
Randall Textron Plant
Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-25 | 4.8J | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-25 | 10J | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-21 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-21 | 22 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-21 | 180 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-22 | 6200JD | 3250UD | 3250UD | 32500UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD |
| SB-22 | 54000D | 3250UD | 3250UD | 32500UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD |
| SB-22 | 15000JD | 3250UD | 3250UD | 32500UD | 5600JD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD |
| SB-23 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-23 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-23 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Copper | Iron | Lead | Magnesium | Manganese | Mercury | Nickel | Potassium | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25 | NA | NA | 34.6 | NA | NA | NA | 22.7 | NA | NA | NA |
| MW-25 | NA | NA | 49.4 | NA | NA | NA | 35.6 | NA | NA | NA |
| MW-25 | NA | NA | 25.2 | NA | NA | NA | 34.3 | NA | NA | NA |
| SB-21 | NA | NA | 32 | NA | NA | NA | 12 | NA | NA | NA |
| SB-21 | NA | NA | 7.8 | NA | NA | NA | 1.4 | NA | NA | NA |
| SB-21 | NA | NA | 8.8 | NA | NA | NA | 23 | NA | NA | NA |
| SB-22 | NA | NA | 9.9 | NA | NA | NA | 5.1 | NA | NA | NA |
| SB-22 | NA | NA | 18 | NA | NA | NA | 2.5 | NA | NA | NA |
| SB-22 | NA | NA | 7.5 | NA | NA | NA | 2.7 | NA | NA | NA |
| SB-23 | NA | NA | 17 | NA | NA | NA | 15 | NA | NA | NA |
| SB-23 | NA | NA | 19 | NA | NA | NA | 4.3 | NA | NA | NA |
| SB-23 | NA | NA | 11 | NA | NA | NA | 4.8 | NA | NA | NA |
| SB-25 | NA | NA | 15 | NA | NA | NA | 13 | NA | NA | NA |
| SB-25 | NA | NA | 18 | NA | NA | NA | 2.1 | NA | NA | NA |
| SB-25 | NA | NA | 9.2 | NA | NA | NA | 7.8 | NA | NA | NA |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,2-Dichloroethene (Total) | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | 160000D | 500UD | 500UD | 5000UD | 500UD | 500UD | 500UD | 500UD | 500UD | 500UD |
| MW-25 | 77000UD | 500UD | 500UD | 5000UD | 500UD | 500UD | 500UD | 500UD | 500UD | 500UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Copper | Iron | Lead | Manganese | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | NA | NA | 166 | NA | NA | 240 | NA | NA | NA | NA |
| MW-25 | NA | NA | 140 | NA | NA | 186 | NA | NA | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Chromium Soluble (µg/L) | Iron Soluble (mg/L) | Lead Soluble (µg/L) | Magnesium Soluble (mg/L) | Nickel Soluble (µg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Zinc Soluble (µg/L) | Calcium (mg/L) | Magnesium (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | 2.0U | 0.044X | 3.0U | 9.0 | 14 | 1.0U | 273 | 18X | NA | NA |
| MW-25 | 3.9X | 0.657X | 3.0U | 7.1 | 13 | 1.0U | 221 | 36X | NA | NA |

TABLE AOC A

DATA SUMMARY FOR AREA OF CONCERN A
Randall Textron Plant
Granada, Mississippi

**Soils (Volatiles) (mg/kg)**

| Sample ID | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25 | 2.4J | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| MW-25 | 11J | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| MW-25 | 26 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-21 | 57 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-21 | 260D | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-21 | 250 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-22 | 1500000D | 3250UD | 3250UD | 3250UD | 6250UD | 3250UD | 3250UD | 6250UD | 6250UD | 5000JD |
| SB-22 | 1800000D | 3250UD | 3250UD | 3250UD | 6250UD | 3250UD | 3250UD | 6250UD | 6250UD | 11000JD |
| SB-22 | 1700000D | 3250UD | 3250UD | 3250UD | 6250UD | 3250UD | 3250UD | 6250UD | 6250UD | 6400JD |
| SB-23 | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-23 | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-23 | 13 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |

**Soils (Inorganics) (mg/kg)**

| Sample ID | Sodium | Thallium | Vanadium | Zinc | Cyanide | Percent Solids (%) |
|---|---|---|---|---|---|---|
| MW-25 | NA | NA | NA | 71.0 | NA | 78.6 |
| MW-25 | NA | NA | NA | 102 | NA | 76.5 |
| MW-25 | NA | NA | NA | 80.5 | NA | 79.3 |
| SB-21 | NA | NA | NA | 121 | NA | 74.6 |
| SB-21 | NA | NA | NA | 6.5 | NA | 80.0 |
| SB-21 | NA | NA | NA | 56 | NA | 79.6 |
| SB-22 | NA | NA | NA | 14 | NA | 78.7 |
| SB-22 | NA | NA | NA | 15 | NA | 72.6 |
| SB-22 | NA | NA | NA | 27 | NA | 81.7 |
| SB-23 | NA | NA | NA | 49 | NA | 76.6 |
| SB-23 | NA | NA | NA | 21 | NA | 73.7 |
| SB-23 | NA | NA | NA | 43 | NA | 81.2 |
| SB-25 | NA | NA | NA | 43 | NA | 78.8 |
| SB-25 | NA | NA | NA | 9.9 | NA | 73.9 |
| SB-25 | NA | NA | NA | 32 | NA | 80.2 |

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-25S | 360000D | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 1000UD | 1000UD | 500UD |
| MW-25 | 240000D | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 1000UD | 1000UD | 500UD |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Zinc | Cyanide |
|---|---|---|
| MW-25S | 823 | NA |
| MW-25 | 563 | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|
| MW-25S | NA | NA |
| MW-25 | NA | NA |

TABLE AOC A

DATA SUMMARY FOR AREA OF CONCERN A
Randall Textron Plant
Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|
| MW-25 | 1.0U | 30 | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-25 | 1.0U | 12J | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-25 | 1.0U | 10J | 1.0U | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| SB-21 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-21 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-21 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-22 | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD |
| SB-22 | 3250UD | 8600JD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD |
| SB-22 | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD | 3250UD |
| SB-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-23 | 1.0U | 7.0J | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-23 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 8.3J | 1.0U | 1.0U | 1.0U |
| SB-25 | 1.0U | 11J | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-25 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID |
|---|
| MW-25 |
| MW-25 |
| MW-25 |
| SB-21 |
| SB-21 |
| SB-21 |
| SB-22 |
| SB-22 |
| SB-22 |
| SB-23 |
| SB-23 |
| SB-23 |
| SB-25 |
| SB-25 |
| SB-25 |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|
| MW-25S | 500UD | 500UD | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 500UD |
| MW-25 | 500UD | 500UD | 500UD | 500UD | 500UD | 1000UD | 500UD | 500UD | 500UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-25S |
| MW-25 |

**Groundwater**
**(Wet Chemistry)**

| Sample ID |
|---|
| MW-25S |
| MW-25 |

# AOC B

## FORMER TOLUENE UNDERGROUND STORAGE AREA

### SUMMARY

**Location:** AOC B is located immediately southeast of the main plant building and approximately downgradient of AOC A.

**Description:** This area formerly contained one 2,000-gallon steel underground tank which was used to store toluene.

The tank was removed in March 1988.

Some soils were removed along with the tank.

Light Non-Aqueous Phase Liquid (LNAPL) was observed at a depth of approximately 5 feet below the ground surface.

Apparently underground piping was the primary source of the release.

More than 2,500 gallons of toluene were recovered from four wells before the mechanical system was replaced by a passive system (bailing).

**Investigation:** Eight borings and six wells are located within or in close vicinity to AOC B.

Data are presented in Table AOC B and Figures 5-1 through 5-43 for soil and Table AOC B and Figures 5-46 through 5-63 for groundwater. The data tables contain the reported concentrations for all constituents for three depths at five boring locations and for MW-24.

**Soils:** Data from four (4) borings (SB-26, SB-29, SB-30, and SB-33), as well as the boring used to install MW-24, are located within AOC B and are summarized below. Additional nearby borings were SB-27, SB-28, SB-31, and SB-32. The range of concentrations of VOCs and metals in µg/Kg were:

| VOCs | Depth Below Grade 0 – 0.5 ft | 2 – 4 ft | 6 – 8 ft |
|---|---|---|---|
| PCE | ND | ND | ND |
| TCE | ND | ND | ND |
| 1,2-DCE | ND – 7.2(J) | ND | ND – 4.2(J) |
| Vinyl Chloride | ND | ND | ND |
| Toluene | ND – 19 | ND – 19 | ND – 56,000 (D) |
| Acetone | ND – 240 (D) | ND – 150 (JD0 | ND – 4,400 (J) |
| Methylene Chloride | ND – 19(J) | ND – 66 | ND |
| Xylene | ND – 6.1(J) | ND | ND – 7.5 (J) |
| Ethyl Benzene | ND | ND | ND – 23 |
| Benzene | 3.0 (J) | ND | ND |
| | Feet Below Grade | | |
| **Metals** | | | |
| Chromium | 3.5 – 20.4 | 4.5 – 26.2 | 10 – 29.2 |
| Nickel | 2.1 – 13.9 | 0.68 – 15.6 | 14 – 27 |
| Arsenic | 2.0 – 6.9 | 1.6 – 4.1 | 7.0 – 21 |
| Lead | 5.6 – 21.5 | 7.0 – 17.8 | 12 – 20.4 |
| Zinc | 12 – 66.4 | 5.4 – 39.8 | 45 – 70 |

As would be expected, the largest impact is from toluene. Except for one shallow sample that contained acetone, all other organic detections were (J) qualified.

Groundwater information includes LNAPL observation from the four recovery wells located within AOC B, MW-24 within AOC B, and numerous upgradient, side gradient, and downgradient wells. The next closest monitoring wells are MW-25, MW-27, MW-28, and MW-30. Groundwater data from MW-24 in µg/L were:

| Compound | Range of Two Samples |
|---|---|
| **VOCs** | |
| TCE | ND – 4,400(JD) |
| 1,2-DCE | 9,500 (D) – 12,000 (D) |
| Vinyl Chloride | ND |
| Benzene | ND - 630(JD) |
| Ethyl Benzene | ND - 3,300(JD) |
| Xylene | ND - 1,200(JD) |

| | |
|---|---|
| Toluene | 660,000 (D) – 150,000 (D) |
| PCE | ND |
| Methylene Chloride | ND |
| Acetone | ND |

| **Metals** | Total Metals | Slow Purge |
|---|---|---|
| Arsenic | 111-165 | 11-29 |
| Lead | 34-60 | ND |
| Zinc | 128(X) – 290 | 15-35 |
| Nickel | 44 (X) – 106 | ND |
| Chromium (total) | 69 (X) – 184 | ND |
| Chromium (IV) | ND | ND |

As expected, the greatest impact is from toluene and to a lessor extent, 1,2-DCE, TCE, benzene, ethyl benzene, and xylenes. The actual groundwater concentrations of toluene reported are of limited significance because LNAPL was present at the time of sampling. The horizontal extent of LNAPL could not be fully determined because drilling within the building was not successful. The occurrence of 1,2-DCE in AOC B is thought to be a result of a combination of TCE migration from AOC A and reductive dechlorination. Metals are reported here as both total metals (same values as in Table AOC B) and slow purge metals (same values as in the oversize drawings). The later data were generated from a second sampling event to distinguish between suspended and dissolved metals and are thought to be more representative of metals that could migrate within the aquifer.

Summary: Several soil borings and nearby monitoring wells in addition to MW-24, as well as the LNAPL recovery wells have provided sufficient delineation of AOC B. The distribution of the primary constituent form AOC B, toluene, is depicted in oversize drawing 5-53. No further delineation is required to conduct a Corrective Measure Study (CSM).

TABLE AOC B

DATA SUMMARY FOR AREA OF CONCERN B
Randall Textron Plant
Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroetane | 1,2-Dichloroethene (Total) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 0-0.5 FT | 12/16/92 | 2.0U | 2.0U | 2.0U | 2.0U | 19J | 170 | 2.0U | 2.0U | 1.0U | 1.0U |
| MW-24 | 2-4 FT | 12/16/92 | 2.0U | 2.0U | 2.0U | 2.0U | 66 | 41J | 2.0U | 2.0U | 1.0U | 1.0U |
| MW-24 | 6-8 FT | 12/16/92 | 250U | 250U | 250U | 250U | 250U | 630U | 250U | 250U | 130U | 130U |
| SB-26 | 0-0.5 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 240D | 2.0U | 2.0U | 1.0U | 7.2J |
| SB-26 | 2-4 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 150JD | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-26 | 6-8 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 160 | 2.0U | 2.0U | 1.0U | 4.2J |
| SB-29 | 0-0.5 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 71 | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-29 | 2-4 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 100JD | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-29 | 6-8 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 220 | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-29 | 6-8 FT | 5/20/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 120JD | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-30 | 0-0.5 FT | 5/21/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-30 | 2-4 FT | 5/21/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-30 | 6-8 FT | 5/21/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 5.0U | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-33 | 0-0.5 FT | 5/21/93 | 2.0U | 2.0U | 2.0U | 2.0U | 3.5J | 25J | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-33 | 2-4 FT | 5/21/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U | 67 | 2.0U | 2.0U | 1.0U | 1.0U |
| SB-33 | 6-8 FT | 5/21/93 | 250U | 250U | 250U | 250U | 250U | 4400J | 250U | 250U | 130U | 130U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Calcium | Chromium | Cobalt | Copper |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 0-0.5 FT | 12/16/92 | NA | NA | 6.5 | NA | NA | NA | NA | 20.4 | NA | NA |
| MW-24 | 2-4 FT | 12/16/92 | NA | NA | 2.7 | NA | NA | NA | NA | 26.2 | NA | NA |
| MW-24 | 6-8 FT | 12/16/92 | NA | NA | 8 | NA | NA | NA | NA | 29.2 | NA | NA |
| SB-26 | 0-0.5 FT | 5/20/93 | NA | NA | 2.0 | NA | NA | NA | NA | 3.5 | NA | NA |
| SB-26 | 2-4 FT | 5/20/93 | NA | NA | 1.6 | NA | NA | NA | NA | 4.5 | NA | NA |
| SB-26 | 6-8 FT | 5/20/93 | NA | NA | 12 | NA | NA | NA | NA | 12 | NA | NA |
| SB-29 | 0-0.5 FT | 5/20/93 | NA | NA | 2.9 | NA | NA | NA | NA | 5.1 | NA | NA |
| SB-29 | 2-4 FT | 5/20/93 | NA | NA | 2.9 | NA | NA | NA | NA | 6.6 | NA | NA |
| SB-29 | 6-8 FT | 5/20/93 | NA | NA | 21 | NA | NA | NA | NA | 16 | NA | NA |
| SB-29 | 6-8 FT | 5/20/93 | NA | NA | 13 | NA | NA | NA | NA | 12 | NA | NA |
| SB-30 | 0-0.5 FT | 5/21/93 | NA | NA | 5.1 | NA | NA | NA | NA | 11 | NA | NA |
| SB-30 | 2-4 FT | 5/21/93 | NA | NA | 1.9 | NA | NA | NA | NA | 8.3 | NA | NA |
| SB-30 | 6-8 FT | 5/21/93 | NA | NA | 7.0 | NA | NA | NA | NA | 10 | NA | NA |
| SB-33 | 0-0.5 FT | 5/21/93 | NA | NA | 6.9 | NA | NA | NA | NA | 7.9 | NA | NA |
| SB-33 | 2-4 FT | 5/21/93 | NA | NA | 4.1 | NA | NA | NA | NA | 9.4 | NA | NA |
| SB-33 | 6-8 FT | 5/21/93 | NA | NA | 7.1 | NA | NA | NA | NA | 14 | NA | NA |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroethane | 1,2-Dichloroethene (Total) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | | 1/15/93 | 1000UD | 1000UD | 1000UD | 1000UD | 1000UD | 2500UD | 1000UD | 1000UD | 500UD | 9500D |
| MW-24 | | 2/24/93 | 2000UD | 2000UD | 2000UD | 2000UD | 2000UD | 5000UD | 2000UD | 2000UD | 1000UD | 12000D |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium | Hexavalent Chromium | Cobalt | Copper |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | | 1/15/93 | NA | NA | 165 | NA | NA | NA | 184 | 25U | NA | NA |
| MW-24 | | 2/24/93 | NA | NA | 111 | NA | NA | NA | 69X | 25U | NA | NA |

**Groundwater**
**(Wet Chemistry)**

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) | TDS (mg/L) | Sulfate (mg/L) | Arsenic Soluble (µg/L) | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | | 1/15/93 | 18 | 1.0U | 85 | 0.25 | NA | 351 | 20 | 11 | 18 | 2.0U |
| MW-24 | | 2/24/93 | 45 | 1.0U | 114 | 0.01U | NA | 353 | 56 | 29 | 13 | 2.0U |

TABLE AOC B

DATA SUMMARY FOR AREA OF CONCERN B
Randall Textron Plant
Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-24 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| MW-24 | 130U | 130U | 1200U | 130U | 130U | 130U | 130U | 130U | 130U | 130U | 130U |
| SB-26 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-26 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-26 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 1.0U | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 130U | 130U | 1300U | 130U | 130U | 130U | 130U | 130U | 130U | 130U | 130U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Iron | Lead | Magnesium | Manganese | Mercury | Nickel | Potassium | Selenium | Silver | Sodium | Thallium |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | NA | 21.5 | NA | NA | NA | 13.9 | NA | NA | NA | NA | NA |
| MW-24 | NA | 17.8 | NA | NA | NA | 15.6 | NA | NA | NA | NA | NA |
| MW-24 | NA | 20.4 | NA | NA | NA | 25.7 | NA | NA | NA | NA | NA |
| SB-26 | NA | 9.6 | NA | NA | NA | 3 | NA | NA | NA | NA | NA |
| SB-26 | NA | 10 | NA | NA | NA | 0.68 | NA | NA | NA | NA | NA |
| SB-26 | NA | 13 | NA | NA | NA | 27 | NA | NA | NA | NA | NA |
| SB-29 | NA | 5.9 | NA | NA | NA | 2.1 | NA | NA | NA | NA | NA |
| SB-29 | NA | 7.0 | NA | NA | NA | 1.7 | NA | NA | NA | NA | NA |
| SB-29 | NA | 14 | NA | NA | NA | 14 | NA | NA | NA | NA | NA |
| SB-29 | NA | 16 | NA | NA | NA | 19 | NA | NA | NA | NA | NA |
| SB-30 | NA | 12 | NA | NA | NA | 10 | NA | NA | NA | NA | NA |
| SB-30 | NA | 10 | NA | NA | NA | 2.6 | NA | NA | NA | NA | NA |
| SB-30 | NA | 13 | NA | NA | NA | 20 | NA | NA | NA | NA | NA |
| SB-33 | NA | 7.4 | NA | NA | NA | 2.6 | NA | NA | NA | NA | NA |
| SB-33 | NA | 17 | NA | NA | NA | 4.6 | NA | NA | NA | NA | NA |
| SB-33 | NA | 12 | NA | NA | NA | 21 | NA | NA | NA | NA | NA |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | Chloroform | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 500UD | 500UD | 5000UD | 500UD | 500UD | 500UD | 500UD | 500UD | 500UD | 11000UD | 500UD |
| MW-24 | 1000UD | 1000UD | 10000UD | 1000UD | 1000UD | 1000UD | 1000UD | 1000UD | 1000UD | 4400JD | 1000UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID | Iron | Lead | Manganese | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | NA | 60 | NA | NA | 106 | NA | NA | NA | NA | 290 | NA |
| MW-24 | NA | 34 | NA | NA | 44X | NA | NA | NA | NA | 128X | NA |

**Groundwater**
**(Wet Chemistry)**

| Sample ID | Iron Soluble (mg/L) | Lead Soluble (µg/L) | Magnesium Soluble (mg/L) | Nickel Soluble (µg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Zinc Soluble (µg/L) | Calcium (mg/L) | Magnesium (mg/L) | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 0.524 | 3.0U | 8.0 | 7.0U | 3.3 | 88 | 35X | NA | NA | NA | NA |
| MW-24 | 13.3 | 3.0U | 6.3 | 7.0U | 1.2 | 83 | 15X | NA | NA | NA | NA |

TABLE AOC B

DATA SUMMARY FOR AREA OF CONCERN B
Randall Textron Plant
Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | 1,1,2-Trichloroethane | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 11J | 1.0U |
| MW-24 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 4.4J | 1.0U |
| MW-24 | 130U | 130U | 250U | 130U | 130U | 250U | 250U | 130U | 130U | 39D | 130U |
| SB-26 | 1.0U | 3.0J | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 12J | 1.0U |
| SB-26 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 15 | 1.0U |
| SB-26 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 7400 | 1.0U |
| SB-29 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 7.4J | 1.0U |
| SB-30 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 8.9J | 1.0U |
| SB-30 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 19 | 1.0U |
| SB-33 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U | 1.0U | 19 | 1.0U |
| SB-33 | 130U | 130U | 250U | 130U | 130U | 250U | 250U | 130U | 130U | 56000D | 130U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID | Vanadium | Zinc | Cyanide | Percent Solids (%) |
|---|---|---|---|---|
| MW-24 | NA | 66.4 | NA | 75.9 |
| MW-24 | NA | 39.8 | NA | 78.8 |
| MW-24 | NA | 65.8 | NA | 78.7 |
| SB-26 | NA | 13 | NA | 79.5 |
| SB-26 | NA | 5.4 | NA | 79.8 |
| SB-26 | NA | 70 | NA | 80.6 |
| SB-29 | NA | 12 | NA | 78.7 |
| SB-29 | NA | 11 | NA | 82.5 |
| SB-29 | NA | 45 | NA | 81.1 |
| SB-29 | NA | 67 | NA | 81.1 |
| SB-30 | NA | 28 | NA | 86.4 |
| SB-30 | NA | 15 | NA | 77.8 |
| SB-30 | NA | 57 | NA | 79.3 |
| SB-33 | NA | 12 | NA | 81.3 |
| SB-33 | NA | 20 | NA | 80.4 |
| SB-33 | NA | 52 | NA | 80.9 |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | 1,1,2-Trichloroethane | Benzene | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-24 | 500UD | 630JD | 1000UD | 500UD | 500UD | 1000UD | 1000UD | 500UD | 500UD | 660000D | 500UD |
| MW-24 | 1000UD | 1000UD | 2000UD | 1000UD | 1000UD | 2000UD | 2000UD | 1000UD | 1000UD | 150000D | 1000UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-24 |
| MW-24 |

**Groundwater**
**(Wet Chemistry)**

| Sample ID |
|---|
| MW-24 |
| MW-24 |

TABLE AOC B

DATA SUMMARY FOR AREA OF CONCERN B
Randall Textron Plant
Granada, Mississippi

**Soils**
**(Volatiles) (mg/kg)**

| Sample ID | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|
| MW-24 | 1.0U | 1.0U | 6.1J | 1.0U | 1.0U | 1.0U |
| MW-24 | 1.0U | 1.0U | 2.0U | 1.0U | 1.0U | 1.0U |
| MW-24 | 130U | 130U | 250U | 130U | 130U | 130U |
| SB-26 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-26 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-26 | 23 | 1.0U | 7.5J | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-29 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-30 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U |
| SB-33 | 130U | 130U | 130U | 130U | 130U | 130U |

**Soils**
**(Inorganics) (mg/kg)**

| Sample ID |
|---|
| MW-24 |
| MW-24 |
| MW-24 |
| SB-26 |
| SB-26 |
| SB-26 |
| SB-29 |
| SB-29 |
| SB-29 |
| SB-29 |
| SB-30 |
| SB-30 |
| SB-30 |
| SB-33 |
| SB-33 |
| SB-33 |

**Groundwater**
**(Volatiles) (mg/L)**

| Sample ID | Ethyl Benzene | Styrene | Xylene (Total) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|
| MW-24 | 3300JD | 500UD | 1200JD | 500UD | 500UD | 500UD |
| MW-24 | 1000UD | 1000UD | 2000UD | 1000UD | 1000UD | 1000UD |

**Groundwater**
**(Inorganics) (µg/L)**

| Sample ID |
|---|
| MW-24 |
| MW-24 |

**Groundwater**
**(Wet Chemistry)**

| Sample ID |
|---|
| MW-24 |
| MW-24 |

# AOC C

## FUEL TANK FARM CONTAINMENT AREA

### SUMMARY

**Location:** AOC C is located within the eastern portion of the Site just east of the former Equalization Lagoon (SWMU 2) and northeast of the Destruct Pit (SWMU 14).

**Description:** The Fuel Tank Farm is contained within a concrete berm measuring approximately 50 feet x 50 feet and 3 feet high. The base of the tank farm is composed of gravel and soil.

The berm served as secondary containment for three 20,000-gallon tanks which held either No. 2 or No. 3 fuel oil before 1971.

The tanks are no longer used.

Grass grows inside the area and occasionally there is standing water which is siphoned off.

**Investigation:** There is one monitoring well, RT-1, immediately adjacent to the containment area. The groundwater results in µg/L were:

Data are presented in Table AOC C and Figures 5-46 through 5-63 for groundwater.

The groundwater constituent concentrations in ug/l obtained from two sampling events were:

| Constituent | Range of Two Samples |
|---|---|
| VOCs | |
| TCE | 90 – 95 |
| 1,2-DCE | 2.8 (J) – 2.9 (J) |
| Vinyl Chloride | ND – ND |
| Ethyl Benzene | ND – ND |
| Xylenes | ND – ND |
| Toluene | ND – ND |
| PCE | ND – ND |
| Methylene Chloride | ND – ND |
| Acetone | ND – ND |

The area appears to be on the edge of the TCE plume. There is no indication of impact from fuel oil although fuel oils based on BTEX analyses. However the fuel oils stored in the tanks may not have contained much BTEX.

**Summary**: Potential groundwater impact is defined by one nearby well and several additional wells that define the extent of TCE and 1,-2 DCE found in the vicinity of AOC C, but which likely r4esult form releases in other portions of the site (e.g., AOC A).

# TABLE AOC C

## DATA SUMMARY FOR AREA OF CONCERN C
## Randall Textron Plant
## Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Depth (ft) | Date of Collection | Chloromethane | Bromomethane | Vinyl Chloride | Chloroethane | Methylene Chloride |
|---|---|---|---|---|---|---|---|
| RT-1 | | 1/14/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |
| RT-1 | | 1/14/93 | 2.0U | 2.0U | 2.0U | 2.0U | 2.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Depth (ft) | Date of Collection | Aluminum | Antimony | Arsenic | Barium | Beryllium |
|---|---|---|---|---|---|---|---|
| RT-1 | | 1/14/93 | NA | NA | NA | NA | NA |
| RT-1 | | 1/14/93 | NA | NA | NA | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Depth (ft) | Date of Collection | Bicarbonate as $CaCO_3$ (mg/L) | Carbonate as $CaCO_3$ (mg/L) | Chloride (mg/L) | Nitrate+Nitrite Nitrogen (mg/L) | pH (units) |
|---|---|---|---|---|---|---|---|
| RT-1 | | 1/14/93 | NA | NA | NA | NA | NA |
| RT-1 | | 1/14/93 | NA | NA | NA | NA | NA |

## TABLE AOC C

### DATA SUMMARY FOR AREA OF CONCERN C
### Randall Textron Plant
### Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Acetone | Carbon Disulfide | 1,1-Dichloroethene | 1,1-Dichloroetane | 1,2-Dichloroethene (Total) | Chloroform |
|---|---|---|---|---|---|---|
| RT-1 | 5.0U | 2.0U | 2.0U | 1.0U | 2.9J | 1.0U |
| RT-1 | 5.0U | 2.0U | 2.0U | 1.0U | 2.8J | 1.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Cadmium | Chromium | Hexavalent Chromium | Cobalt | Copper | Iron |
|---|---|---|---|---|---|---|
| RT-1 | NA | 19 | 25U | NA | NA | NA |
| RT-1 | NA | 45 | 25U | NA | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | TDS (mg/L) | Sulfate (mg/L) | Arsenic Soluble (µg/L) | Calcium Soluble (mg/L) | Chromium Soluble (µg/L) | Iron Soluble (mg/L) |
|---|---|---|---|---|---|---|
| RT-1 | NA | NA | NA | NA | 6.3 | NA |
| RT-1 | NA | NA | NA | NA | 3.1 | NA |

# TABLE AOC C

## DATA SUMMARY FOR AREA OF CONCERN C
## Randall Textron Plant
## Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,2-Dichloroethane | 2-Butanone | 1,1,1-Trichloroethane | Carbon Tetrachloride | Vinyl Acetate | Bromodichloromethane |
|---|---|---|---|---|---|---|
| RT-1 | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U |
| RT-1 | 1.0U | 10U | 1.0U | 1.0U | 1.0U | 1.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Lead | Manganese | Mercury | Nickel | Selenium | Silver |
|---|---|---|---|---|---|---|
| RT-1 | NA | NA | NA | NA | NA | NA |
| RT-1 | NA | NA | NA | NA | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Lead Soluble (µg/L) | Magnesium Soluble (mg/L) | Nickel Soluble (µg/L) | Potassium Soluble (mg/L) | Sodium Soluble (mg/L) | Zinc Soluble (µg/L) |
|---|---|---|---|---|---|---|
| RT-1 | NA | NA | NA | NA | NA | NA |
| RT-1 | NA | NA | NA | NA | NA | NA |

# TABLE AOC C

## DATA SUMMARY FOR AREA OF CONCERN C
## Randall Textron Plant
## Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,2-Dichloropropane | 1,3-Dichloropropene (Total) | Trichloroethene | Dibromochloromethane | 1,1,2-Trichloroethane | Benzene |
|---|---|---|---|---|---|---|
| RT-1 | 1.0U | 1.0U | 90 | 1.0U | 1.0U | 1.0U |
| RT-1 | 1.0U | 1.0U | 95 | 1.0U | 1.0U | 1.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID | Thallium | Vanadium | Zinc | Cyanide |
|---|---|---|---|---|
| RT-1 | NA | NA | NA | NA |
| RT-1 | NA | NA | NA | NA |

**Groundwater (Wet Chemistry)**

| Sample ID | Calcium (mg/L) | Magnesium (mg/L) | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|---|---|
| RT-1 | NA | NA | NA | NA |
| RT-1 | NA | NA | NA | NA |

TABLE AOC C

DATA SUMMARY FOR AREA OF CONCERN C
Randall Textron Plant
Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | Trichlorofluoromethane | 2-Chloroethylvinylether | Bromoform | 4-Methyl-2-Pentanone | 2-Hexanone | Tetrachloroethene |
|---|---|---|---|---|---|---|
| RT-1 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |
| RT-1 | 2.0U | 1.0U | 1.0U | 2.0U | 2.0U | 1.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| RT-1 |
| RT-1 |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| RT-1 |
| RT-1 |

TABLE AOC C

## DATA SUMMARY FOR AREA OF CONCERN C
## Randall Textron Plant
## Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,1,2,2-Tetrachloroethane | Toluene | Chlorobenzene | Ethyl Benzene | Styrene | Xylene (Total) |
|---|---|---|---|---|---|---|
| RT-1 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |
| RT-1 | 1.0U | 1.0U | 1.0U | 1.0U | 1.0U | 2.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| RT-1 |
| RT-1 |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| RT-1 |
| RT-1 |

TABLE AOC C

## DATA SUMMARY FOR AREA OF CONCERN C
### Randall Textron Plant
### Granada, Mississippi

**Groundwater (Volatiles) (mg/L)**

| Sample ID | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|
| RT-1 | 1.0U | 1.0U | 1.0U |
| RT-1 | 1.0U | 1.0U | 1.0U |

**Groundwater (Inorganics) (µg/L)**

| Sample ID |
|---|
| RT-1 |
| RT-1 |

**Groundwater (Wet Chemistry)**

| Sample ID |
|---|
| RT-1 |
| RT-1 |

## TABLE A

## WASTEWATER TREATMENT PLANT
## EFFLUENT TO OUTFALL DITCH (µg/L)
## FEBRUARY 17 – 18, 1997

| Parameter | Concentration (ug/L) |
|---|---|
| **Detected Organics** | |
| Toluene | 1.94(J) |
| TCE | 7.06 |
| P-Chloro-m-creosol | 1.5(J) |
| Bis (-2-Ethylhexyl) Phthalate | 54.0 |
| N-Nitrosodiphenylamine | 3.7(J) |
| **Detected Metals** | |
| Aluminum | 0.07 |
| Barium | 0.056 |
| Iron | 0.51 |
| Magnesium | 3.10 |
| Manganese | 0.06 |
| **Part A Analytes** | |
| BOD | 5 |
| COD | 29 |
| TOC | 25.3 |
| **Part B Analytes** | |
| Bromide | 0.41 |
| Fluoride | 0.10 |
| Nitrate/Nitrite | 9.45 |
| Phosphorous | 2.10 |
| Sulfate | 328 |
| Surfactants | 0.15 |

## TABLE B

## EQUALIZATION LAGOON COMPLIANCE MONITORING
## METALS IN GROUNDWATER (µg/L)
## NOVEMBER 23, 1998[a]

| Well | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|
| MW1-01 (RT-1) | ND | ND | ND | ND | ND | ND | 5.76 | ND |
| MW2-01 (RT-2) | ND | ND | ND | 15,700 | ND | ND | ND | ND |
| MW4-01 (RT-4) | ND | ND | ND | ND | ND | ND | ND | ND |
| MW5-01 (RT-5) | ND | ND | ND | 793 | ND | ND | ND | ND |

[a]Method SW 6010 except for Mercury (SW 7470).

## TABLE C

## EQUALIZATION LAGOON COMPLIANCE MONITORING
## VOCs IN GROUNDWATER (µg/L)
## NOVEMBER 23, 1998[a, b, c]

| Well | Benzene | Toluene | Xylene | PCE | TCE | 1,2-DCE | 1,1,1-TCA | 1,1,2-TCA | 1,1-DCA | 1,1-DCE | Vinyl Chloride | Chloro-Ethane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW1-01 (RT-1) | | | | | 124 | | | | | | | |
| MW2-01 (RT-2) | 23.6 | 10.3 | 31.5 | 39.8 | 13,800 | 26.2 | 16.3 | | 38.3 | 81.2 | 3,000 | |
| MW4-01 (RT-4) | | | | | 575 | 52.6 | | | 5.9 | 12.5 | 612 | |
| MW5-01 (RT-5) | | | | 14.2 | 11,600 | 17.9 | 12.8 | 6.3 | 24.5 | 36.5 | 242 | 13.3 |

[a]No SVOC detections (Method SW 8270).
[b]Method SW 8260 for VOCs.

# ATTACHMENT A

# COMPLIANCE MONITORING FOR FORMER EQUALIZATION LAGOON

## Analytical Data Reports

**NOTE**: Wells MW-1 through MW-5 are same as RT-1 through RT-5 as shown on the over size drawing and as referred to in the RI Report

Pace Analytical Services, Inc. - New Orleans
Sample Cross Reference Summary

Episode: PGR Client: Eco-Systems, Incorporated/MS

Project: GW SAMPLING #1

Site:

| Lab ID | Client ID | Description | Matrix | Collected | Received |
|---|---|---|---|---|---|
| PGR-001 | #2-GW-MW1-01 | TAC-SWMV | Water | 11/23/98 | 11/25/98 |
| PGR-002 | #2-GW-MW5-01 | TAC-SWMV | Water | 11/23/98 | 11/25/98 |
| PGR-003 | #2-GW-MS-MW1-01 | TAC-SWMV/MATRIX SPIKE | Water | 11/23/98 | 11/25/98 |
| PGR-004 | #2-GW-MSD-MW1-01 | TAC-SWMV/MSD | Water | 11/23/98 | 11/25/98 |
| PGR-005 | #2-GW-MW2-01 | TAC-SWMV | Water | 11/23/98 | 11/25/98 |
| PGR-006 | #2-GW-MW4-01 | TAC-SWMV | Water | 11/23/98 | 11/25/98 |
| PGR-007 | #2-TB-01 | TAC-SWMV | Water | 11/23/98 | 11/25/98 |
| PGR-008 | #2-GW-BD1 | TAC-SWMV | Water | 11/23/98 | 11/25/98 |

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | |
|---|---|---|---|
| **Client ID:** | #2-GW-MW1-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS |
| **Project:** | GW SAMPLING #1 | **Site:** | None |
| **Lab ID:** | PGR-001 | **Episode:** | PGR |
| **Sample Qu:** | | | |
| **Description:** | TAC-SWMV | **Matrix:** | Water |
| **% Moisture:** | n/a | | |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water |
| **Batch:** | 28494 | | |
| **Units:** | ug/l | **Target List:** | 8260AP9WAT |
| **Prep Factor:** | 1.00 | **Leached:** | n/a |
| **Prepared:** | | **Analyzed:** | 04-Dec-98 16:59 KC |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone (2-Propanone, Dimethyl ketone) | 1 | ND | | 10.0 | |
| 75-05-8 | Acetonitrile (Methyl cyanide) | 1 | ND | | 50.0 | |
| 107-02-8 | Acrolein (2-Propenal) | 1 | ND | | 10.0 | |
| 107-13-1 | Acrylonitrile (2-Propenenitrile) | 1 | ND | | 10.0 | |
| 107-05-1 | Allyl chloride (3-Chloropropene) | 1 | ND | | 5.00 | |
| 71-43-2 | Benzene | 1 | ND | | 5.00 | |
| 75-27-4 | Bromodichloromethane | 1 | ND | | 5.00 | |
| 75-25-2 | Bromoform | 1 | ND | | 5.00 | |
| 74-83-9 | Bromomethane (Methyl bromide) | 1 | ND | | 10.0 | |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone) | 1 | ND | | 10.0 | |
| 75-15-0 | Carbon disulfide | 1 | ND | | 5.00 | |
| 56-23-5 | Carbon tetrachloride | 1 | ND | | 5.00 | |
| 108-90-7 | Chlorobenzene | 1 | ND | | 5.00 | |
| 75-00-3 | Chloroethane | 1 | ND | | 10.0 | |
| 67-66-3 | Chloroform | 1 | ND | | 5.00 | |
| 74-87-3 | Chloromethane (Methyl chloride) | 1 | ND | | 10.0 | |
| 126-99-8 | Chloroprene (2-Chloro-1,3-butadiene) | 1 | ND | | 50.0 | |
| 124-48-1 | Dibromochloromethane | 1 | ND | | 5.00 | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ND | | 5.00 | |
| 106-93-4 | 1,2-Dibromoethane (Ethylene dibromide) | 1 | ND | | 5.00 | |
| 74-95-3 | Dibromomethane (Methylene bromide) | 1 | ND | | 5.00 | |
| 110-57-6 | trans-1,4-Dichloro-2-butene | 1 | ND | | 5.00 | |
| 75-71-8 | Dichlorodifluoromethane (Freon 12) | 1 | ND | | 50.0 | |
| 75-34-3 | 1,1-Dichloroethane | 1 | ND | | 5.00 | |
| 107-06-2 | 1,2-Dichloroethane (Ethylene dichloride) | 1 | ND | | 5.00 | |
| 75-35-4 | 1,1-Dichloroethene (Dichloroethylene) | 1 | ND | | 5.00 | |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | ND | | 5.00 | |
| 78-87-5 | 1,2-Dichloropropane | 1 | ND | | 5.00 | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 123-91-1 | 1,4-Dioxane | 1 | ND | | 500 | |
| 100-41-4 | Ethylbenzene | 1 | ND | | 5.00 | |
| 591-78-6 | 2-Hexanone | 1 | ND | | 10.0 | |
| 74-88-4 | Iodomethane (Methyl iodide) | 1 | ND | | 5.00 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:46

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | |
|---|---|---|---|
| **Client ID:** | #2-GW-MW1-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS |
| **Project:** | GW SAMPLING #1 | **Site:** | None |
| **Lab ID:** | PGR-001 | **Episode:** | PGR |
| **Description:** | TAC-SWMV | **Matrix:** | Water |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water |
| | | **Units:** | ug/l |
| **Prep Factor:** | 1.00 | **Leached:** | n/a |
| | | **Prepared:** | |

**Sample Qu:**
**% Moisture:** n/a
**Batch:** 28494
**Target List:** 8260AP9WAT
**Analyzed:** 04-Dec-98 16:59 KC

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 78-83-1 | 2-Methyl-1-propanol (iso-Butyl alcohol) | 1 | ND | | 500 | |
| 126-98-7 | Methacrylonitrile | 1 | ND | | 5.00 | |
| 75-09-2 | Methylene chloride (Dichloromethane) | 1 | ND | | 5.00 | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 1 | ND | | 10.0 | |
| 107-12-0 | Propionitrile (Ethyl cyanide) | 1 | ND | | 10.0 | |
| 100-42-4 | Styrene | 1 | ND | | 5.00 | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 127-18-4 | Tetrachloroethene (Perchloroethylene) | 1 | ND | | 5.00 | |
| 108-88-3 | Toluene | 1 | ND | | 5.00 | |
| 71-55-6 | 1,1,1-Trichloroethane (Methyl chloroform) | 1 | ND | | 5.00 | |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | ND | | 5.00 | |
| 79-01-6 | Trichloroethene (Trichloroethylene) | 1 | 124 | | 5.00 | |
| 75-69-4 | Trichlorofluoromethane (Freon 11) | 1 | ND | | 5.00 | |
| 96-18-4 | 1,2,3-Trichloropropane | 1 | ND | | 5.00 | |
| 108-05-4 | Vinyl acetate | 1 | ND | | 10.0 | |
| 75-01-4 | Vinyl chloride (Chloroethene) | 1 | ND | | 10.0 | |
| 1330-20-7 | Xylene (total) | 1 | ND | | 5.00 | |

52 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:46

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW1-01
**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Project:** GW SAMPLING #1
**Site:** None
**Lab ID:** PGR-001
**Episode:** PGR
**Sample Qu:**
**Description:** TAC-SWMV
**Matrix:** Water
**% Moisture:** n/a
**Method:** SW 8270 Appendix IX Semivolatile Organics
**Prep Level:** Water
**Batch:** 28484
**Units:** ug/l
**Target List:** 8270AP9WAT
**Prep Factor:** 1.00
**Leached:** n/a
**Prepared:** 30-Nov-98
**Analyzed:** 02-Dec-98 20:42 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 1 | ND | | 10.0 | |
| 208-96-8 | Acenaphthylene | 1 | ND | | 10.0 | |
| 98-86-2 | Acetophenone | 1 | ND | | 10.0 | |
| 53-96-3 | 2-Acetylaminofluorene | 1 | ND | | 10.0 | |
| 92-67-1 | 4-Aminobiphenyl | 1 | ND | | 10.0 | |
| 62-53-3 | Aniline (Benzeneamine) | 1 | ND | | 10.0 | |
| 120-12-7 | Anthracene | 1 | ND | | 10.0 | |
| 140-57-8 | Aramite | 1 | ND | | 10.0 | |
| 56-55-3 | Benzo(a)anthracene | 1 | ND | | 10.0 | |
| 205-99-2 | Benzo(b)fluoranthene | 1 | ND | | 10.0 | |
| 207-08-09 | Benzo(k)fluoranthene | 1 | ND | | 10.0 | |
| 191-24-2 | Benzo(g,h,i)perylene | 1 | ND | | 10.0 | |
| 50-32-8 | Benzo(a)pyrene | 1 | ND | | 10.0 | |
| 100-51-6 | Benzyl alcohol | 1 | ND | | 10.0 | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 1 | ND | | 10.0 | |
| 85-68-7 | Butylbenzylphthalate | 1 | ND | | 10.0 | |
| 88-85-7 | 2-sec-Butyl-4-6-dinitrophenol (Dinoseb) | 1 | ND | | 10.0 | |
| 106-47-8 | 4-Chloroaniline (p-Chloroaniline) | 1 | ND | | 10.0 | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 1 | ND | | 10.0 | |
| 111-44-4 | bis(2-Chloroethyl) ether | 1 | ND | | 10.0 | |
| 108-60-1 | bis(2-Chloroisopropyl) ether | 1 | ND | | 10.0 | |
| 59-50-7 | 4-Chloro-3-methylphenol (p-Chloro-m-cresol) | 1 | ND | | 10.0 | |
| 91-58-7 | 2-Chloronaphthalene | 1 | ND | | 10.0 | |
| 95-57-8 | 2-Chlorophenol (o-Chlorophenol) | 1 | ND | | 10.0 | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 1 | ND | | 10.0 | |
| 218-01-9 | Chrysene | 1 | ND | | 10.0 | |
| 53-70-3 | Dibenz(a,h)anthracene | 1 | ND | | 10.0 | |
| 132-64-9 | Dibenzofuran | 1 | ND | | 10.0 | |
| 84-74-2 | Di-n-butylphthalate | 1 | ND | | 10.0 | |
| 95-50-1 | 1,2-Dichlorobenzene (o-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 541-73-1 | 1,3-Dichlorobenzene (m-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 106-46-7 | 1,4-Dichlorobenzene (p-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1 | ND | | 20.0 | |
| 120-83-2 | 2,4-Dichlorophenol | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:46

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW1-01
**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Project:** GW SAMPLING #1
**Site:** None
**Lab ID:** PGR-001
**Episode:** PGR
**Sample Qu:**
**Description:** TAC-SWMV
**Matrix:** Water
**% Moisture:** n/a
**Method:** SW 8270 Appendix IX Semivolatile Organics
**Prep Level:** Water
**Batch:** 28484
**Units:** ug/l
**Target List:** 8270AP9WAT
**Prep Factor:** 1.00
**Leached:** n/a
**Prepared:** 30-Nov-98
**Analyzed:** 02-Dec-98 20:42 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 87-65-0 | 2,6-Dichlorophenol | 1 | ND | | 10.0 | |
| 84-66-2 | Diethylphthalate | 1 | ND | | 10.0 | |
| 60-11-7 | p-(Dimethylamino)azobenzene | 1 | ND | | 10.0 | |
| 57-97-6 | 7,12-Dimethylbenz(a)anthracene | 1 | ND | | 10.0 | |
| 119-93-7 | 3,3'-Dimethylbenzidine | 1 | ND | | 10.0 | |
| 122-09-8 | alpha, alpha- Dimethylphenethylamine | 1 | ND | | 10.0 | |
| 105-67-9 | 2,4-Dimethylphenol | 1 | ND | | 10.0 | |
| 131-11-3 | Dimethylphthalate | 1 | ND | | 10.0 | |
| 99-65-0 | 1,3-Dinitrobenzene (m-Dinitrobenzene) | 1 | ND | | 10.0 | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol) | 1 | ND | | 25.0 | |
| 51-28-5 | 2,4-Dinitrophenol | 1 | ND | | 25.0 | |
| 121-14-2 | 2,4-Dinitrotoluene | 1 | ND | | 10.0 | |
| 606-20-2 | 2,6-Dinitrotoluene | 1 | ND | | 10.0 | |
| 117-84-0 | Di-n-octylphthalate | 1 | ND | | 10.0 | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | ND | | 10.0 | |
| 97-63-2 | Ethyl methacrylate (2-Propenoic acid) | 1 | ND | | 10.0 | |
| 62-50-0 | Ethyl methanesulfonate | 1 | ND | | 10.0 | |
| 206-44-0 | Fluoranthene | 1 | ND | | 10.0 | |
| 86-73-7 | Fluorene | 1 | ND | | 10.0 | |
| 118-74-1 | Hexachlorobenzene | 1 | ND | | 10.0 | |
| 87-68-3 | Hexachlorobutadiene | 1 | ND | | 10.0 | |
| 77-47-4 | Hexachlorocyclopentadiene | 1 | ND | | 10.0 | |
| 67-72-1 | Hexachloroethane | 1 | ND | | 10.0 | |
| 70-30-4 | Hexachlorophene | 1 | ND | | 10.0 | |
| 1888-71-7 | Hexachloropropene | 1 | ND | A6 | 10.0 | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1 | ND | | 10.0 | |
| 78-59-1 | Isophorone | 1 | ND | | 10.0 | |
| 120-58-1 | Isosafrole | 1 | ND | | 10.0 | |
| 91-80-5 | Methapyrilene | 1 | ND | | 10.0 | |
| 56-49-5 | 3-Methylcholanthrene | 1 | ND | | 10.0 | |
| 80-62-6 | Methyl methacrylate | 1 | ND | | 10.0 | |
| 66-27-3 | Methyl methanesulfonate | 1 | ND | | 10.0 | |
| 91-57-6 | 2-Methylnaphthalene | 1 | ND | | 10.0 | |
| 95-48-7 | 2-Methylphenol (o-Cresol) | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:46

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW1-01
**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Project:** GW SAMPLING #1
**Site:** None
**Lab ID:** PGR-001
**Episode:** PGR
**Sample Qu:**
**Description:** TAC-SWMV
**Matrix:** Water
**% Moisture:** n/a
**Method:** SW 8270 Appendix IX Semivolatile Organics
**Prep Level:** Water
**Batch:** 28484
**Units:** ug/l
**Target List:** 8270AP9WAT
**Prep Factor:** 1.00
**Leached:** n/a
**Prepared:** 30-Nov-98
**Analyzed:** 02-Dec-98 20:42 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 108-39-4 | 3-Methylphenol (m-Cresol) | 1 | ND | A7 | 10.0 | |
| 106-44-5 | 4-Methylphenol (p-Cresol) | 1 | ND | | 10.0 | |
| 91-20-3 | Naphthalene | 1 | ND | | 10.0 | |
| 134-32-7 | 1-Naphthaleneamine (1-Naphthylamine) | 1 | ND | | 10.0 | |
| 91-59-8 | 2-Naphthaleneamine (2-Naphthylamine) | 1 | ND | | 10.0 | |
| 130-15-4 | 1,4-Naphthoquinone | 1 | ND | | 50.0 | |
| 88-74-4 | 2-Nitroaniline (o-Nitroaniline) | 1 | ND | | 25.0 | |
| 99-09-2 | 3-Nitroaniline (m-Nitroaniline) | 1 | ND | | 25.0 | |
| 100-01-6 | 4-Nitroaniline (p-Nitroaniline) | 1 | ND | | 25.0 | |
| 98-95-3 | Nitrobenzene | 1 | ND | | 10.0 | |
| 88-75-5 | 2-Nitrophenol (o-Nitrophenol) | 1 | ND | | 10.0 | |
| 100-02-7 | 4-Nitrophenol (p-Nitrophenol) | 1 | ND | | 25.0 | |
| 56-57-2 | 4-Nitroquinoline-1-oxide | 1 | ND | | 10.0 | |
| 924-16-3 | N-Nitrosodi-n-butylamine | 1 | ND | | 10.0 | |
| 55-18-5 | N-Nitrosodiethylamine | 1 | ND | | 10.0 | |
| 62-75-9 | N-Nitrosodimethylamine | 1 | ND | | 10.0 | |
| 86-30-6 | N-Nitrosodiphenylamine (Diphenylamine) | 1 | ND | A10 | 10.0 | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 1 | ND | | 10.0 | |
| 10595-95-6 | N-Nitrosomethylethylamine | 1 | ND | | 10.0 | |
| 59-89-2 | N-Nitrosomorpholine | 1 | ND | | 10.0 | |
| 100-75-4 | N-Nitrosopiperidine | 1 | ND | | 10.0 | |
| 930-55-2 | N-Nitrosopyrrolidine | 1 | ND | | 10.0 | |
| 99-55-8 | 5-Nitro-o-toluidine | 1 | ND | | 10.0 | |
| 608-93-5 | Pentachlorobenzene | 1 | ND | | 10.0 | |
| 76-01-7 | Pentachloroethane | 1 | ND | | 10.0 | |
| 82-68-8 | Pentachloronitrobenzene | 1 | ND | | 10.0 | |
| 87-86-5 | Pentachlorophenol | 1 | ND | | 25.0 | |
| 62-44-2 | Phenacetin | 1 | ND | | 10.0 | |
| 85-01-8 | Phenanthrene | 1 | ND | | 10.0 | |
| 108-95-2 | Phenol | 1 | ND | | 10.0 | |
| 106-50-3 | p-Phenylenediamine | 1 | ND | | 10.0 | |
| 109-06-08 | 2-Picoline (2-Methylpyridine) | 1 | ND | | 10.0 | |
| 23950-58-5 | Pronamide | 1 | ND | | 10.0 | |
| 129-00-0 | Pyrene | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:47

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW1-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-001 | **Episode:** | PGR | **Sample Qu:** | |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8270 Appendix IX Semivolatile Organics | **Prep Level:** | Water | **Batch:** | 28484 |
| | | **Units:** | ug/l | **Target List:** | 8270AP9WAT |
| **Prep Factor:** | 1.00 **Leached:** n/a | **Prepared:** | 30-Nov-98 | **Analyzed:** | 02-Dec-98 20:42 JA |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 110-86-1 | Pyridine | 1 | ND | | 10.0 | |
| 94-59-7 | Safrole | 1 | ND | | 10.0 | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | 1 | ND | | 10.0 | |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | 1 | ND | | 10.0 | |
| 95-53-4 | o-Toluidine | 1 | ND | | 10.0 | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1 | ND | | 10.0 | |
| 95-95-4 | 2,4,5-Trichlorophenol | 1 | ND | | 25.0 | |
| 88-06-2 | 2,4,6-Trichlorophenol | 1 | ND | | 10.0 | |
| 99-35-4 | 1,3,5-Trinitrobenzene (sym-Trinitrobenzene) | 1 | ND | | 10.0 | |

111 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:47

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW5-01
**Project:** GW SAMPLING #1
**Lab ID:** PGR-002
**Description:** TAC-SWMV
**Method:** SW 8260 Appendix IX Volatile Organics

**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Site:** None
**Episode:** PGR
**Sample Qu:** D1 M3
**Matrix:** Water
**% Moisture:** n/a
**Prep Level:** Water
**Batch:** 28494
**Units:** ug/l
**Target List:** 8260AP9WAT

**Prep Factor:** 1.00 **Leached:** n/a **Prepared:** **Analyzed:** 04-Dec-98 17:28 KC

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone (2-Propanone, Dimethyl ketone) | 1 | ND | | 10.0 | |
| 75-05-8 | Acetonitrile (Methyl cyanide) | 1 | ND | | 50.0 | |
| 107-02-8 | Acrolein (2-Propenal) | 1 | ND | | 10.0 | |
| 107-13-1 | Acrylonitrile (2-Propenenitrile) | 1 | ND | | 10.0 | |
| 107-05-1 | Allyl chloride (3-Chloropropene) | 1 | ND | | 5.00 | |
| 71-43-2 | Benzene | 1 | ND | | 5.00 | |
| 75-27-4 | Bromodichloromethane | 1 | ND | | 5.00 | |
| 75-25-2 | Bromoform | 1 | ND | | 5.00 | |
| 74-83-9 | Bromomethane (Methyl bromide) | 1 | ND | | 10.0 | |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone) | 1 | ND | | 10.0 | |
| 75-15-0 | Carbon disulfide | 1 | ND | | 5.00 | |
| 56-23-5 | Carbon tetrachloride | 1 | ND | | 5.00 | |
| 108-90-7 | Chlorobenzene | 1 | ND | | 5.00 | |
| 75-00-3 | Chloroethane | 1 | 13.3 | | 10.0 | |
| 67-66-3 | Chloroform | 1 | ND | | 5.00 | |
| 74-87-3 | Chloromethane (Methyl chloride) | 1 | ND | | 10.0 | |
| 126-99-8 | Chloroprene (2-Chloro-1,3-butadiene) | 1 | ND | | 50.0 | |
| 124-48-1 | Dibromochloromethane | 1 | ND | | 5.00 | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ND | | 5.00 | |
| 106-93-4 | 1,2-Dibromoethane (Ethylene dibromide) | 1 | ND | | 5.00 | |
| 74-95-3 | Dibromomethane (Methylene bromide) | 1 | ND | | 5.00 | |
| 110-57-6 | trans-1,4-Dichloro-2-butene | 1 | ND | | 5.00 | |
| 75-71-8 | Dichlorodifluoromethane (Freon 12) | 1 | ND | | 50.0 | |
| 75-34-3 | 1,1-Dichloroethane | 1 | 24.5 | | 5.00 | |
| 107-06-2 | 1,2-Dichloroethane (Ethylene dichloride) | 1 | ND | | 5.00 | |
| 75-35-4 | 1,1-Dichloroethene (Dichloroethylene) | 1 | 36.5 | | 5.00 | |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | 17.9 | | 5.00 | |
| 78-87-5 | 1,2-Dichloropropane | 1 | ND | | 5.00 | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 123-91-1 | 1,4-Dioxane | 1 | ND | | 500 | |
| 100-41-4 | Ethylbenzene | 1 | ND | | 5.00 | |
| 591-78-6 | 2-Hexanone | 1 | ND | | 10.0 | |
| 74-88-4 | Iodomethane (Methyl iodide) | 1 | ND | | 5.00 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:47

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | |
|---|---|---|---|
| **Client ID:** | #2-GW-MW5-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS |
| **Project:** | GW SAMPLING #1 | **Site:** | None |
| **Lab ID:** | PGR-002 | **Episode:** | PGR |
| **Sample Qu:** | D1 M3 | | |
| **Description:** | TAC-SWMV | **Matrix:** | Water |
| **% Moisture:** | n/a | | |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water |
| **Batch:** | 28494 | | |
| | | **Units:** | ug/l |
| **Target List:** | 8260AP9WAT | | |
| **Prep Factor:** | 1.00 | **Leached:** | n/a |
| **Prepared:** | | **Analyzed:** | 04-Dec-98 17:28 KC |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 78-83-1 | 2-Methyl-1-propanol (iso-Butyl alcohol) | 1 | ND | | 500 | |
| 126-98-7 | Methacrylonitrile | 1 | ND | | 5.00 | |
| 75-09-2 | Methylene chloride (Dichloromethane) | 1 | ND | | 5.00 | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 1 | ND | | 10.0 | |
| 107-12-0 | Propionitrile (Ethyl cyanide) | 1 | ND | | 10.0 | |
| 100-42-4 | Styrene | 1 | ND | | 5.00 | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 127-18-4 | Tetrachloroethene (Perchloroethylene) | 1 | 14.2 | | 5.00 | |
| 108-88-3 | Toluene | 1 | ND | | 5.00 | |
| 71-55-6 | 1,1,1-Trichloroethane (Methyl chloroform) | 1 | 12.8 | | 5.00 | |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | 6.33 | | 5.00 | |
| 79-01-6 | Trichloroethene (Trichloroethylene) | 1000 | 11600 | D1 | 5000 | |
| 75-69-4 | Trichlorofluoromethane (Freon 11) | 1 | ND | | 5.00 | |
| 96-18-4 | 1,2,3-Trichloropropane | 1 | ND | | 5.00 | |
| 108-05-4 | Vinyl acetate | 1 | ND | | 10.0 | |
| 75-01-4 | Vinyl chloride (Chloroethene) | 1 | 242 | | 10.0 | |
| 1330-20-7 | Xylene (total) | 1 | ND | | 5.00 | |

52 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:48

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW5-01
**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Project:** GW SAMPLING #1
**Site:** None
**Lab ID:** PGR-002
**Episode:** PGR
**Sample Qu:**
**Description:** TAC-SWMV
**Matrix:** Water
**% Moisture:** n/a
**Method:** SW 8270 Appendix IX Semivolatile Organics
**Prep Level:** Water
**Batch:** 28484
**Units:** ug/l
**Target List:** 8270AP9WAT
**Prep Factor:** 1.00
**Leached:** n/a
**Prepared:** 30-Nov-98
**Analyzed:** 02-Dec-98 21:21 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 1 | ND | | 10.0 | |
| 208-96-8 | Acenaphthylene | 1 | ND | | 10.0 | |
| 98-86-2 | Acetophenone | 1 | ND | | 10.0 | |
| 53-96-3 | 2-Acetylaminofluorene | 1 | ND | | 10.0 | |
| 92-67-1 | 4-Aminobiphenyl | 1 | ND | | 10.0 | |
| 62-53-3 | Aniline (Benzeneamine) | 1 | ND | | 10.0 | |
| 120-12-7 | Anthracene | 1 | ND | | 10.0 | |
| 140-57-8 | Aramite | 1 | ND | | 10.0 | |
| 56-55-3 | Benzo(a)anthracene | 1 | ND | | 10.0 | |
| 205-99-2 | Benzo(b)fluoranthene | 1 | ND | | 10.0 | |
| 207-08-09 | Benzo(k)fluoranthene | 1 | ND | | 10.0 | |
| 191-24-2 | Benzo(g,h,i)perylene | 1 | ND | | 10.0 | |
| 50-32-8 | Benzo(a)pyrene | 1 | ND | | 10.0 | |
| 100-51-6 | Benzyl alcohol | 1 | ND | | 10.0 | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 1 | ND | | 10.0 | |
| 85-68-7 | Butylbenzylphthalate | 1 | ND | | 10.0 | |
| 88-85-7 | 2-sec-Butyl-4-6-dinitrophenol (Dinoseb) | 1 | ND | | 10.0 | |
| 106-47-8 | 4-Chloroaniline (p-Chloroaniline) | 1 | ND | | 10.0 | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 1 | ND | | 10.0 | |
| 111-44-4 | bis(2-Chloroethyl) ether | 1 | ND | | 10.0 | |
| 108-60-1 | bis(2-Chloroisopropyl) ether | 1 | ND | | 10.0 | |
| 59-50-7 | 4-Chloro-3-methylphenol (p-Chloro-m-cresol) | 1 | ND | | 10.0 | |
| 91-58-7 | 2-Chloronaphthalene | 1 | ND | | 10.0 | |
| 95-57-8 | 2-Chlorophenol (o-Chlorophenol) | 1 | ND | | 10.0 | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 1 | ND | | 10.0 | |
| 218-01-9 | Chrysene | 1 | ND | | 10.0 | |
| 53-70-3 | Dibenz(a,h)anthracene | 1 | ND | | 10.0 | |
| 132-64-9 | Dibenzofuran | 1 | ND | | 10.0 | |
| 84-74-2 | Di-n-butylphthalate | 1 | ND | | 10.0 | |
| 95-50-1 | 1,2-Dichlorobenzene (o-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 541-73-1 | 1,3-Dichlorobenzene (m-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 106-46-7 | 1,4-Dichlorobenzene (p-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1 | ND | | 10.0 | |
| 120-83-2 | 2,4-Dichlorophenol | 1 | ND | | 20.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:48

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW5-01
**Project:** GW SAMPLING #1
**Lab ID:** PGR-002
**Description:** TAC-SWMV
**Method:** SW 8270 Appendix IX Semivolatile Organics

**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Site:** None
**Episode:** PGR
**Sample Qu:**
**Matrix:** Water
**% Moisture:** n/a
**Prep Level:** Water
**Batch:** 28484
**Units:** ug/l
**Target List:** 8270AP9WAT

**Prep Factor:** 1.00
**Leached:** n/a
**Prepared:** 30-Nov-98
**Analyzed:** 02-Dec-98 21:21 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 87-65-0 | 2,6-Dichlorophenol | 1 | ND | | 10.0 | |
| 84-66-2 | Diethylphthalate | 1 | ND | | 10.0 | |
| 60-11-7 | p-(Dimethylamino)azobenzene | 1 | ND | | 10.0 | |
| 57-97-6 | 7,12-Dimethylbenz(a)anthracene | 1 | ND | | 10.0 | |
| 119-93-7 | 3,3'-Dimethylbenzidine | 1 | ND | | 10.0 | |
| 122-09-8 | alpha, alpha- Dimethylphenethylamine | 1 | ND | | 10.0 | |
| 105-67-9 | 2,4-Dimethylphenol | 1 | ND | | 10.0 | |
| 131-11-3 | Dimethylphthalate | 1 | ND | | 10.0 | |
| 99-65-0 | 1,3-Dinitrobenzene (m-Dinitrobenzene) | 1 | ND | | 10.0 | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol) | 1 | ND | | 10.0 | |
| 51-28-5 | 2,4-Dinitrophenol | 1 | ND | | 25.0 | |
| 121-14-2 | 2,4-Dinitrotoluene | 1 | ND | | 25.0 | |
| 606-20-2 | 2,6-Dinitrotoluene | 1 | ND | | 10.0 | |
| 117-84-0 | Di-n-octylphthalate | 1 | ND | | 10.0 | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | ND | | 10.0 | |
| 97-63-2 | Ethyl methacrylate (2-Propenoic acid) | 1 | ND | | 10.0 | |
| 62-50-0 | Ethyl methanesulfonate | 1 | ND | | 10.0 | |
| 206-44-0 | Fluoranthene | 1 | ND | | 10.0 | |
| 86-73-7 | Fluorene | 1 | ND | | 10.0 | |
| 118-74-1 | Hexachlorobenzene | 1 | ND | | 10.0 | |
| 87-68-3 | Hexachlorobutadiene | 1 | ND | | 10.0 | |
| 77-47-4 | Hexachlorocyclopentadiene | 1 | ND | | 10.0 | |
| 67-72-1 | Hexachloroethane | 1 | ND | | 10.0 | |
| 70-30-4 | Hexachlorophene | 1 | ND | | 10.0 | |
| 1888-71-7 | Hexachloropropene | 1 | ND | A6 | 10.0 | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1 | ND | | 10.0 | |
| 78-59-1 | Isophorone | 1 | ND | | 10.0 | |
| 120-58-1 | Isosafrole | 1 | ND | | 10.0 | |
| 91-80-5 | Methapyrilene | 1 | ND | | 10.0 | |
| 56-49-5 | 3-Methylcholanthrene | 1 | ND | | 10.0 | |
| 80-62-6 | Methyl methacrylate | 1 | ND | | 10.0 | |
| 66-27-3 | Methyl methanesulfonate | 1 | ND | | 10.0 | |
| 91-57-6 | 2-Methylnaphthalene | 1 | ND | | 10.0 | |
| 95-48-7 | 2-Methylphenol (o-Cresol) | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
PF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:48

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW5-01
**Project:** GW SAMPLING #1
**Lab ID:** PGR-002
**Description:** TAC-SWMV
**Method:** SW 8270 Appendix IX Semivolatile Organics

**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Site:** None
**Episode:** PGR
**Sample Qu:**
**Matrix:** Water
**% Moisture:** n/a
**Prep Level:** Water
**Batch:** 28484
**Units:** ug/l
**Target List:** 8270AP9WAT

**Prep Factor:** 1.00 **Leached:** n/a
**Prepared:** 30-Nov-98 **Analyzed:** 02-Dec-98 21:21 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 108-39-4 | 3-Methylphenol (m-Cresol) | 1 | ND | A7 | 10.0 | |
| 106-44-5 | 4-Methylphenol (p-Cresol) | 1 | ND | | 10.0 | |
| 91-20-3 | Naphthalene | 1 | ND | | 10.0 | |
| 134-32-7 | 1-Naphthaleneamine (1-Naphthylamine) | 1 | ND | | 10.0 | |
| 91-59-8 | 2-Naphthaleneamine (2-Naphthylamine) | 1 | ND | | 10.0 | |
| 130-15-4 | 1,4-Naphthoquinone | 1 | ND | | 50.0 | |
| 88-74-4 | 2-Nitroaniline (o-Nitroaniline) | 1 | ND | | 25.0 | |
| 99-09-2 | 3-Nitroaniline (m-Nitroaniline) | 1 | ND | | 25.0 | |
| 100-01-6 | 4-Nitroaniline (p-Nitroaniline) | 1 | ND | | 25.0 | |
| 98-95-3 | Nitrobenzene | 1 | ND | | 10.0 | |
| 88-75-5 | 2-Nitrophenol (o-Nitrophenol) | 1 | ND | | 10.0 | |
| 100-02-7 | 4-Nitrophenol (p-Nitrophenol) | 1 | ND | | 25.0 | |
| 56-57-2 | 4-Nitroquinoline-1-oxide | 1 | ND | | 10.0 | |
| 924-16-3 | N-Nitrosodi-n-butylamine | 1 | ND | | 10.0 | |
| 55-18-5 | N-Nitrosodiethylamine | 1 | ND | | 10.0 | |
| 62-75-9 | N-Nitrosodimethylamine | 1 | ND | | 10.0 | |
| 86-30-6 | N-Nitrosodiphenylamine (Diphenylamine) | 1 | ND | A10 | 10.0 | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 1 | ND | | 10.0 | |
| 10595-95-6 | N-Nitrosomethylethylamine | 1 | ND | | 10.0 | |
| 59-89-2 | N-Nitrosomorpholine | 1 | ND | | 10.0 | |
| 100-75-4 | N-Nitrosopiperidine | 1 | ND | | 10.0 | |
| 930-55-2 | N-Nitrosopyrrolidine | 1 | ND | | 10.0 | |
| 99-55-8 | 5-Nitro-o-toluidine | 1 | ND | | 10.0 | |
| 608-93-5 | Pentachlorobenzene | 1 | ND | | 10.0 | |
| 76-01-7 | Pentachloroethane | 1 | ND | | 10.0 | |
| 82-68-8 | Pentachloronitrobenzene | 1 | ND | | 10.0 | |
| 87-86-5 | Pentachlorophenol | 1 | ND | | 25.0 | |
| 62-44-2 | Phenacetin | 1 | ND | | 10.0 | |
| 85-01-8 | Phenanthrene | 1 | ND | | 10.0 | |
| 108-95-2 | Phenol | 1 | ND | | 10.0 | |
| 106-50-3 | p-Phenylenediamine | 1 | ND | | 10.0 | |
| 109-06-08 | 2-Picoline (2-Methylpyridine) | 1 | ND | | 10.0 | |
| 23950-58-5 | Pronamide | 1 | ND | | 10.0 | |
| 129-00-0 | Pyrene | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW5-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-002 | **Episode:** | PGR | **Sample Qu:** | |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8270 Appendix IX Semivolatile Organics | **Prep Level:** | Water | **Batch:** | 28484 |
| | | **Units:** | ug/l | **Target List:** | 8270AP9WAT |
| **Prep Factor:** | 1.00 **Leached:** n/a | **Prepared:** | 30-Nov-98 | **Analyzed:** | 02-Dec-98 21:21 JA |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 110-86-1 | Pyridine | 1 | ND | | 10.0 | |
| 94-59-7 | Safrole | 1 | ND | | 10.0 | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | 1 | ND | | 10.0 | |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | 1 | ND | | 10.0 | |
| 95-53-4 | o-Toluidine | 1 | ND | | 10.0 | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1 | ND | | 10.0 | |
| 95-95-4 | 2,4,5-Trichlorophenol | 1 | ND | | 25.0 | |
| 88-06-2 | 2,4,6-Trichlorophenol | 1 | ND | | 10.0 | |
| 99-35-4 | 1,3,5-Trinitrobenzene (sym-Trinitrobenzene) | 1 | ND | | 10.0 | |

111 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:48

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW2-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-005 | **Episode:** | PGR | **Sample Qu:** | D1 |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water | **Batch:** | 28494 |
| | | **Units:** | ug/l | **Target List:** | 8260AP9WAT |
| **Prep Factor:** | 1.00 **Leached:** n/a | **Prepared:** | | **Analyzed:** | 04-Dec-98 17:58 KC |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone (2-Propanone, Dimethyl ketone) | 1 | ND | | 10.0 | |
| 75-05-8 | Acetonitrile (Methyl cyanide) | 1 | ND | | 50.0 | |
| 107-02-8 | Acrolein (2-Propenal) | 1 | ND | | 10.0 | |
| 107-13-1 | Acrylonitrile (2-Propenenitrile) | 1 | ND | | 10.0 | |
| 107-05-1 | Allyl chloride (3-Chloropropene) | 1 | ND | | 5.00 | |
| 71-43-2 | Benzene | 1 | 23.6 | | 5.00 | |
| 75-27-4 | Bromodichloromethane | 1 | ND | | 5.00 | |
| 75-25-2 | Bromoform | 1 | ND | | 5.00 | |
| 74-83-9 | Bromomethane (Methyl bromide) | 1 | ND | | 10.0 | |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone) | 1 | ND | | 10.0 | |
| 75-15-0 | Carbon disulfide | 1 | ND | | 5.00 | |
| 56-23-5 | Carbon tetrachloride | 1 | ND | | 5.00 | |
| 108-90-7 | Chlorobenzene | 1 | ND | | 5.00 | |
| 75-00-3 | Chloroethane | 1 | ND | | 10.0 | |
| 67-66-3 | Chloroform | 1 | ND | | 5.00 | |
| 74-87-3 | Chloromethane (Methyl chloride) | 1 | ND | | 10.0 | |
| 126-99-8 | Chloroprene (2-Chloro-1,3-butadiene) | 1 | ND | | 50.0 | |
| 124-48-1 | Dibromochloromethane | 1 | ND | | 5.00 | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ND | | 5.00 | |
| 106-93-4 | 1,2-Dibromoethane (Ethylene dibromide) | 1 | ND | | 5.00 | |
| 74-95-3 | Dibromomethane (Methylene bromide) | 1 | ND | | 5.00 | |
| 110-57-6 | trans-1,4-Dichloro-2-butene | 1 | ND | | 5.00 | |
| 75-71-8 | Dichlorodifluoromethane (Freon 12) | 1 | ND | | 50.0 | |
| 75-34-3 | 1,1-Dichloroethane | 1 | 38.3 | | 5.00 | |
| 107-06-2 | 1,2-Dichloroethane (Ethylene dichloride) | 1 | ND | | 5.00 | |
| 75-35-4 | 1,1-Dichloroethene (Dichloroethylene) | 1 | 81.2 | | 5.00 | |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | 26.2 | | 5.00 | |
| 78-87-5 | 1,2-Dichloropropane | 1 | ND | | 5.00 | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 123-91-1 | 1,4-Dioxane | 1 | ND | | 500 | |
| 100-41-4 | Ethylbenzene | 1 | ND | | 5.00 | |
| 591-78-6 | 2-Hexanone | 1 | ND | | 10.0 | |
| 74-88-4 | Iodomethane (Methyl iodide) | 1 | ND | | 5.00 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:51

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW2-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-005 | **Episode:** | PGR | **Sample Qu:** | D1 |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water | **Batch:** | 28494 |
| | | **Units:** | ug/l | **Target List:** | 8260AP9WAT |
| **Prep Factor:** | 1.00 **Leached:** n/a | **Prepared:** | | **Analyzed:** | 04-Dec-98 17:58 KC |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 78-83-1 | 2-Methyl-1-propanol (iso-Butyl alcohol) | 1 | ND | | 500 | |
| 126-98-7 | Methacrylonitrile | 1 | ND | | 5.00 | |
| 75-09-2 | Methylene chloride (Dichloromethane) | 1 | ND | | 5.00 | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 1 | ND | | 10.0 | |
| 107-12-0 | Propionitrile (Ethyl cyanide) | 1 | ND | | 10.0 | |
| 100-42-4 | Styrene | 1 | ND | | 5.00 | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 127-18-4 | Tetrachloroethene (Perchloroethylene) | 1 | 39.8 | | 5.00 | |
| 108-88-3 | Toluene | 1 | 10.3 | | 5.00 | |
| 71-55-6 | 1,1,1-Trichloroethane (Methyl chloroform) | 1 | 16.3 | | 5.00 | |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | ND | | 5.00 | |
| 79-01-6 | Trichloroethene (Trichloroethylene) | 100 | 13800 | D1 | 500 | |
| 75-69-4 | Trichlorofluoromethane (Freon 11) | 1 | ND | | 5.00 | |
| 96-18-4 | 1,2,3-Trichloropropane | 1 | ND | | 5.00 | |
| 108-05-4 | Vinyl acetate | 1 | ND | | 10.0 | |
| 75-01-4 | Vinyl chloride (Chloroethene) | 100 | 3000 | D1 | 1000 | |
| 1330-20-7 | Xylene (total) | 1 | 31.5 | | 5.00 | |

52 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:52

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW2-01
**Project:** GW SAMPLING #1
**Lab ID:** PGR-005
**Description:** TAC-SWMV
**Method:** SW 8270 Appendix IX Semivolatile Organics
**Prep Factor:** 1.03 **Leached:** n/a

**Client:** ECO-SYSTEMS, INCORPORATED/MS
**Site:** None
**Episode:** PGR **Sample Qu:** P1
**Matrix:** Water **% Moisture:** n/a
**Prep Level:** Water **Batch:** 28484
**Units:** ug/l **Target List:** 8270AP9WAT
**Prepared:** 30-Nov-98 **Analyzed:** 02-Dec-98 22:00 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 1 | ND | | 10.3 | |
| 208-96-8 | Acenaphthylene | 1 | ND | | 10.3 | |
| 98-86-2 | Acetophenone | 1 | ND | | 10.3 | |
| 53-96-3 | 2-Acetylaminofluorene | 1 | ND | | 10.3 | |
| 92-67-1 | 4-Aminobiphenyl | 1 | ND | | 10.3 | |
| 62-53-3 | Aniline (Benzeneamine) | 1 | ND | | 10.3 | |
| 120-12-7 | Anthracene | 1 | ND | | 10.3 | |
| 140-57-8 | Aramite | 1 | ND | | 10.3 | |
| 56-55-3 | Benzo(a)anthracene | 1 | ND | | 10.3 | |
| 205-99-2 | Benzo(b)fluoranthene | 1 | ND | | 10.3 | |
| 207-08-09 | Benzo(k)fluoranthene | 1 | ND | | 10.3 | |
| 191-24-2 | Benzo(g,h,i)perylene | 1 | ND | | 10.3 | |
| 50-32-8 | Benzo(a)pyrene | 1 | ND | | 10.3 | |
| 100-51-6 | Benzyl alcohol | 1 | ND | | 10.3 | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 1 | ND | | 10.3 | |
| 85-68-7 | Butylbenzylphthalate | 1 | ND | | 10.3 | |
| 88-85-7 | 2-sec-Butyl-4-6-dinitrophenol (Dinoseb) | 1 | ND | | 10.3 | |
| 106-47-8 | 4-Chloroaniline (p-Chloroaniline) | 1 | ND | | 10.3 | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 1 | ND | | 10.3 | |
| 111-44-4 | bis(2-Chloroethyl) ether | 1 | ND | | 10.3 | |
| 108-60-1 | bis(2-Chloroisopropyl) ether | 1 | ND | | 10.3 | |
| 59-50-7 | 4-Chloro-3-methylphenol (p-Chloro-m-cresol) | 1 | ND | | 10.3 | |
| 91-58-7 | 2-Chloronaphthalene | 1 | ND | | 10.3 | |
| 95-57-8 | 2-Chlorophenol (o-Chlorophenol) | 1 | ND | | 10.3 | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 1 | ND | | 10.3 | |
| 218-01-9 | Chrysene | 1 | ND | | 10.3 | |
| 53-70-3 | Dibenz(a,h)anthracene | 1 | ND | | 10.3 | |
| 132-64-9 | Dibenzofuran | 1 | ND | | 10.3 | |
| 84-74-2 | Di-n-butylphthalate | 1 | ND | | 10.3 | |
| 95-50-1 | 1,2-Dichlorobenzene (o-Dichlorobenzene) | 1 | ND | | 10.3 | |
| 541-73-1 | 1,3-Dichlorobenzene (m-Dichlorobenzene) | 1 | ND | | 10.3 | |
| 106-46-7 | 1,4-Dichlorobenzene (p-Dichlorobenzene) | 1 | ND | | 10.3 | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1 | ND | | 20.6 | |
| 120-83-2 | 2,4-Dichlorophenol | 1 | ND | | 10.3 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:52

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW2-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-005 | **Episode:** | PGR | **Sample Qu:** | P1 |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8270 Appendix IX Semivolatile Organics | **Prep Level:** | Water | **Batch:** | 28484 |
| | | **Units:** | ug/l | **Target List:** | 8270AP9WAT |
| **Prep Factor:** | 1.03 **Leached:** n/a | **Prepared:** | 30-Nov-98 | **Analyzed:** | 02-Dec-98 22:00 JA |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 87-65-0 | 2,6-Dichlorophenol | 1 | ND | | 10.3 | |
| 84-66-2 | Diethylphthalate | 1 | ND | | 10.3 | |
| 60-11-7 | p-(Dimethylamino)azobenzene | 1 | ND | | 10.3 | |
| 57-97-6 | 7,12-Dimethylbenz(a)anthracene | 1 | ND | | 10.3 | |
| 119-93-7 | 3,3'-Dimethylbenzidine | 1 | ND | | 10.3 | |
| 122-09-8 | alpha, alpha- Dimethylphenethylamine | 1 | ND | | 10.3 | |
| 105-67-9 | 2,4-Dimethylphenol | 1 | ND | | 10.3 | |
| 131-11-3 | Dimethylphthalate | 1 | ND | | 10.3 | |
| 99-65-0 | 1,3-Dinitrobenzene (m-Dinitrobenzene) | 1 | ND | | 10.3 | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol) | 1 | ND | | 25.7 | |
| 51-28-5 | 2,4-Dinitrophenol | 1 | ND | | 25.7 | |
| 121-14-2 | 2,4-Dinitrotoluene | 1 | ND | | 10.3 | |
| 606-20-2 | 2,6-Dinitrotoluene | 1 | ND | | 10.3 | |
| 117-84-0 | Di-n-octylphthalate | 1 | ND | | 10.3 | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | ND | | 10.3 | |
| 97-63-2 | Ethyl methacrylate (2-Propenoic acid) | 1 | ND | | 10.3 | |
| 62-50-0 | Ethyl methanesulfonate | 1 | ND | | 10.3 | |
| 206-44-0 | Fluoranthene | 1 | ND | | 10.3 | |
| 86-73-7 | Fluorene | 1 | ND | | 10.3 | |
| 118-74-1 | Hexachlorobenzene | 1 | ND | | 10.3 | |
| 87-68-3 | Hexachlorobutadiene | 1 | ND | | 10.3 | |
| 77-47-4 | Hexachlorocyclopentadiene | 1 | ND | | 10.3 | |
| 67-72-1 | Hexachloroethane | 1 | ND | | 10.3 | |
| 70-30-4 | Hexachlorophene | 1 | ND | A6 | 10.3 | |
| 1888-71-7 | Hexachloropropene | 1 | ND | | 10.3 | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1 | ND | | 10.3 | |
| 78-59-1 | Isophorone | 1 | ND | | 10.3 | |
| 120-58-1 | Isosafrole | 1 | ND | | 10.3 | |
| 91-80-5 | Methapyrilene | 1 | ND | | 10.3 | |
| 56-49-5 | 3-Methylcholanthrene | 1 | ND | | 10.3 | |
| 80-62-6 | Methyl methacrylate | 1 | ND | | 10.3 | |
| 66-27-3 | Methyl methanesulfonate | 1 | ND | | 10.3 | |
| 91-57-6 | 2-Methylnaphthalene | 1 | ND | | 10.3 | |
| 95-48-7 | 2-Methylphenol (o-Cresol) | 1 | ND | | 10.3 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:52

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW2-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-005 **Episode:** PGR **Sample Qu:** P1

**Description:** TAC-SWMV **Matrix:** Water **% Moisture:** n/a

**Method:** SW 8270 Appendix IX Semivolatile Organics **Prep Level:** Water **Batch:** 28484

**Units:** ug/l **Target List:** 8270AP9WAT

**Prep Factor:** 1.03 **Leached:** n/a **Prepared:** 30-Nov-98 **Analyzed:** 02-Dec-98 22:00 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 108-39-4 | 3-Methylphenol (m-Cresol) | 1 | ND | A7 | 10.3 | |
| 106-44-5 | 4-Methylphenol (p-Cresol) | 1 | ND | | 10.3 | |
| 91-20-3 | Naphthalene | 1 | ND | | 10.3 | |
| 134-32-7 | 1-Naphthaleneamine (1-Naphthylamine) | 1 | ND | | 10.3 | |
| 91-59-8 | 2-Naphthaleneamine (2-Naphthylamine) | 1 | ND | | 10.3 | |
| 130-15-4 | 1,4-Naphthoquinone | 1 | ND | | 51.5 | |
| 88-74-4 | 2-Nitroaniline (o-Nitroaniline) | 1 | ND | | 25.7 | |
| 99-09-2 | 3-Nitroaniline (m-Nitroaniline) | 1 | ND | | 25.7 | |
| 100-01-6 | 4-Nitroaniline (p-Nitroaniline) | 1 | ND | | 25.7 | |
| 98-95-3 | Nitrobenzene | 1 | ND | | 10.3 | |
| 88-75-5 | 2-Nitrophenol (o-Nitrophenol) | 1 | ND | | 10.3 | |
| 100-02-7 | 4-Nitrophenol (p-Nitrophenol) | 1 | ND | | 25.7 | |
| 56-57-2 | 4-Nitroquinoline-1-oxide | 1 | ND | | 10.3 | |
| 924-16-3 | N-Nitrosodi-n-butylamine | 1 | ND | | 10.3 | |
| 55-18-5 | N-Nitrosodiethylamine | 1 | ND | | 10.3 | |
| 62-75-9 | N-Nitrosodimethylamine | 1 | ND | | 10.3 | |
| 86-30-6 | N-Nitrosodiphenylamine (Diphenylamine) | 1 | ND | A10 | 10.3 | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 1 | ND | | 10.3 | |
| 10595-95-6 | N-Nitrosomethylethylamine | 1 | ND | | 10.3 | |
| 59-89-2 | N-Nitrosomorpholine | 1 | ND | | 10.3 | |
| 100-75-4 | N-Nitrosopiperidine | 1 | ND | | 10.3 | |
| 930-55-2 | N-Nitrosopyrrolidine | 1 | ND | | 10.3 | |
| 99-55-8 | 5-Nitro-o-toluidine | 1 | ND | | 10.3 | |
| 608-93-5 | Pentachlorobenzene | 1 | ND | | 10.3 | |
| 76-01-7 | Pentachloroethane | 1 | ND | | 10.3 | |
| 82-68-8 | Pentachloronitrobenzene | 1 | ND | | 10.3 | |
| 87-86-5 | Pentachlorophenol | 1 | ND | | 25.7 | |
| 62-44-2 | Phenacetin | 1 | ND | | 10.3 | |
| 85-01-8 | Phenanthrene | 1 | ND | | 10.3 | |
| 108-95-2 | Phenol | 1 | ND | | 10.3 | |
| 106-50-3 | p-Phenylenediamine | 1 | ND | | 10.3 | |
| 109-06-08 | 2-Picoline (2-Methylpyridine) | 1 | ND | | 10.3 | |
| 23950-58-5 | Pronamide | 1 | ND | | 10.3 | |
| 129-00-0 | Pyrene | 1 | ND | | 10.3 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW2-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-005 | **Episode:** | PGR | **Sample Qu:** | P1 |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8270 Appendix IX Semivolatile Organics | **Prep Level:** | Water | **Batch:** | 28484 |
| | | **Units:** | ug/l | **Target List:** | 8270AP9WAT |
| **Prep Factor:** | 1.03 **Leached:** n/a | **Prepared:** | 30-Nov-98 | **Analyzed:** | 02-Dec-98 22:00 JA |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 110-86-1 | Pyridine | 1 | ND | | 10.3 | |
| 94-59-7 | Safrole | 1 | ND | | 10.3 | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | 1 | ND | | 10.3 | |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | 1 | ND | | 10.3 | |
| 95-53-4 | o-Toluidine | 1 | ND | | 10.3 | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1 | ND | | 10.3 | |
| 95-95-4 | 2,4,5-Trichlorophenol | 1 | ND | | 25.7 | |
| 88-06-2 | 2,4,6-Trichlorophenol | 1 | ND | | 10.3 | |
| 99-35-4 | 1,3,5-Trinitrobenzene (sym-Trinitrobenzene) | 1 | ND | | 10.3 | |

111 compound(s) reported

D denotes Not Detected at or above the adjusted reporting limit.
F denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | |
|---|---|---|---|
| **Client ID:** | #2-GW-MW4-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS |
| **Project:** | GW SAMPLING #1 | **Site:** | None |
| **Lab ID:** | PGR-006 | **Episode:** | PGR |
| **Sample Qu:** | | | |
| **Description:** | TAC-SWMV | **Matrix:** | Water |
| **% Moisture:** | n/a | | |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water |
| **Batch:** | 28494 | | |
| **Units:** | ug/l | **Target List:** | 8260AP9WAT |
| **Prep Factor:** | 1.00 | **Leached:** | n/a |
| **Prepared:** | | **Analyzed:** | 04-Dec-98 18:27 KC |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone (2-Propanone, Dimethyl ketone) | 1 | ND | | 10.0 | |
| 75-05-8 | Acetonitrile (Methyl cyanide) | 1 | ND | | 50.0 | |
| 107-02-8 | Acrolein (2-Propenal) | 1 | ND | | 10.0 | |
| 107-13-1 | Acrylonitrile (2-Propenenitrile) | 1 | ND | | 10.0 | |
| 107-05-1 | Allyl chloride (3-Chloropropene) | 1 | ND | | 5.00 | |
| 71-43-2 | Benzene | 1 | ND | | 5.00 | |
| 75-27-4 | Bromodichloromethane | 1 | ND | | 5.00 | |
| 75-25-2 | Bromoform | 1 | ND | | 5.00 | |
| 74-83-9 | Bromomethane (Methyl bromide) | 1 | ND | | 10.0 | |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone) | 1 | ND | | 10.0 | |
| 75-15-0 | Carbon disulfide | 1 | ND | | 5.00 | |
| 56-23-5 | Carbon tetrachloride | 1 | ND | | 5.00 | |
| 108-90-7 | Chlorobenzene | 1 | ND | | 5.00 | |
| 75-00-3 | Chloroethane | 1 | ND | | 10.0 | |
| 67-66-3 | Chloroform | 1 | ND | | 5.00 | |
| 74-87-3 | Chloromethane (Methyl chloride) | 1 | ND | | 10.0 | |
| 126-99-8 | Chloroprene (2-Chloro-1,3-butadiene) | 1 | ND | | 50.0 | |
| 124-48-1 | Dibromochloromethane | 1 | ND | | 5.00 | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ND | | 5.00 | |
| 106-93-4 | 1,2-Dibromoethane (Ethylene dibromide) | 1 | ND | | 5.00 | |
| 74-95-3 | Dibromomethane (Methylene bromide) | 1 | ND | | 5.00 | |
| 110-57-6 | trans-1,4-Dichloro-2-butene | 1 | ND | | 5.00 | |
| 75-71-8 | Dichlorodifluoromethane (Freon 12) | 1 | ND | | 50.0 | |
| 75-34-3 | 1,1-Dichloroethane | 1 | 5.87 | | 5.00 | |
| 107-06-2 | 1,2-Dichloroethane (Ethylene dichloride) | 1 | ND | | 5.00 | |
| 75-35-4 | 1,1-Dichloroethene (Dichloroethylene) | 1 | 12.5 | | 5.00 | |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | 52.6 | | 5.00 | |
| 78-87-5 | 1,2-Dichloropropane | 1 | ND | | 5.00 | |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | ND | | 5.00 | |
| 123-91-1 | 1,4-Dioxane | 1 | ND | | 500 | |
| 100-41-4 | Ethylbenzene | 1 | ND | | 5.00 | |
| 591-78-6 | 2-Hexanone | 1 | ND | | 10.0 | |
| 74-88-4 | Iodomethane (Methyl iodide) | 1 | ND | | 5.00 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW4-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-006 | **Episode:** | PGR | **Sample Qu:** | |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8260 Appendix IX Volatile Organics | **Prep Level:** | Water | **Batch:** | 28494 |
| | | **Units:** | ug/l | **Target List:** | 8260AP9WAT |
| **Prep Factor:** | 1.00 **Leached:** n/a | **Prepared:** | | **Analyzed:** | 04-Dec-98 18:27 KC |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 78-83-1 | 2-Methyl-1-propanol (iso-Butyl alcohol) | 1 | ND | | 500 | |
| 126-98-7 | Methacrylonitrile | 1 | ND | | 5.00 | |
| 75-09-2 | Methylene chloride (Dichloromethane) | 1 | ND | | 5.00 | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 1 | ND | | 10.0 | |
| 107-12-0 | Propionitrile (Ethyl cyanide) | 1 | ND | | 10.0 | |
| 100-42-4 | Styrene | 1 | ND | | 5.00 | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | ND | | 5.00 | |
| 127-18-4 | Tetrachloroethene (Perchloroethylene) | 1 | ND | | 5.00 | |
| 108-88-3 | Toluene | 1 | ND | | 5.00 | |
| 71-55-6 | 1,1,1-Trichloroethane (Methyl chloroform) | 1 | ND | | 5.00 | |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | ND | | 5.00 | |
| 79-01-6 | Trichloroethene (Trichloroethylene) | 1 | 575 | N | 5.00 | |
| 75-69-4 | Trichlorofluoromethane (Freon 11) | 1 | ND | | 5.00 | |
| 96-18-4 | 1,2,3-Trichloropropane | 1 | ND | | 5.00 | |
| 108-05-4 | Vinyl acetate | 1 | ND | | 10.0 | |
| 75-01-4 | Vinyl chloride (Chloroethene) | 1 | 612 | N | 10.0 | |
| 1330-20-7 | Xylene (total) | 1 | ND | | 5.00 | |

52 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | |
|---|---|---|---|
| **Client ID:** | #2-GW-MW4-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS |
| **Project:** | GW SAMPLING #1 | **Site:** | None |
| **Lab ID:** | PGR-006 | **Episode:** | PGR |
| **Sample Qu:** | | | |
| **Description:** | TAC-SWMV | **Matrix:** | Water |
| **% Moisture:** | n/a | | |
| **Method:** | SW 8270 Appendix IX Semivolatile Organics | **Prep Level:** | Water |
| **Batch:** | 28484 | | |
| **Units:** | ug/l | **Target List:** | 8270AP9WAT |
| **Prep Factor:** | 1.00 | **Leached:** | n/a |
| **Prepared:** | 30-Nov-98 | **Analyzed:** | 02-Dec-98 22:39 JA |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 1 | ND | | 10.0 | |
| 208-96-8 | Acenaphthylene | 1 | ND | | 10.0 | |
| 98-86-2 | Acetophenone | 1 | ND | | 10.0 | |
| 53-96-3 | 2-Acetylaminofluorene | 1 | ND | | 10.0 | |
| 92-67-1 | 4-Aminobiphenyl | 1 | ND | | 10.0 | |
| 62-53-3 | Aniline (Benzeneamine) | 1 | ND | | 10.0 | |
| 120-12-7 | Anthracene | 1 | ND | | 10.0 | |
| 140-57-8 | Aramite | 1 | ND | | 10.0 | |
| 56-55-3 | Benzo(a)anthracene | 1 | ND | | 10.0 | |
| 205-99-2 | Benzo(b)fluoranthene | 1 | ND | | 10.0 | |
| 207-08-09 | Benzo(k)fluoranthene | 1 | ND | | 10.0 | |
| 191-24-2 | Benzo(g,h,i)perylene | 1 | ND | | 10.0 | |
| 50-32-8 | Benzo(a)pyrene | 1 | ND | | 10.0 | |
| 100-51-6 | Benzyl alcohol | 1 | ND | | 10.0 | |
| 101-55-3 | 4-Bromophenyl phenyl ether | 1 | ND | | 10.0 | |
| 85-68-7 | Butylbenzylphthalate | 1 | ND | | 10.0 | |
| 88-85-7 | 2-sec-Butyl-4-6-dinitrophenol (Dinoseb) | 1 | ND | | 10.0 | |
| 106-47-8 | 4-Chloroaniline (p-Chloroaniline) | 1 | ND | | 10.0 | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 1 | ND | | 10.0 | |
| 111-44-4 | bis(2-Chloroethyl) ether | 1 | ND | | 10.0 | |
| 108-60-1 | bis(2-Chloroisopropyl) ether | 1 | ND | | 10.0 | |
| 59-50-7 | 4-Chloro-3-methylphenol (p-Chloro-m-cresol) | 1 | ND | | 10.0 | |
| 91-58-7 | 2-Chloronaphthalene | 1 | ND | | 10.0 | |
| 95-57-8 | 2-Chlorophenol (o-Chlorophenol) | 1 | ND | | 10.0 | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 1 | ND | | 10.0 | |
| 218-01-9 | Chrysene | 1 | ND | | 10.0 | |
| 53-70-3 | Dibenz(a,h)anthracene | 1 | ND | | 10.0 | |
| 132-64-9 | Dibenzofuran | 1 | ND | | 10.0 | |
| 84-74-2 | Di-n-butylphthalate | 1 | ND | | 10.0 | |
| 95-50-1 | 1,2-Dichlorobenzene (o-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 541-73-1 | 1,3-Dichlorobenzene (m-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 106-46-7 | 1,4-Dichlorobenzene (p-Dichlorobenzene) | 1 | ND | | 10.0 | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1 | ND | | 20.0 | |
| 120-83-2 | 2,4-Dichlorophenol | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

| | | | | | |
|---|---|---|---|---|---|
| **Client ID:** | #2-GW-MW4-01 | **Client:** | ECO-SYSTEMS, INCORPORATED/MS | | |
| **Project:** | GW SAMPLING #1 | **Site:** | None | | |
| **Lab ID:** | PGR-006 | **Episode:** | PGR | **Sample Qu:** | |
| **Description:** | TAC-SWMV | **Matrix:** | Water | **% Moisture:** | n/a |
| **Method:** | SW 8270 Appendix IX Semivolatile Organics | **Prep Level:** | Water | **Batch:** | 28484 |
| | | **Units:** | ug/l | **Target List:** | 8270AP9WAT |
| **Prep Factor:** | 1.00 **Leached:** n/a | **Prepared:** | 30-Nov-98 | **Analyzed:** | 02-Dec-98 22:39 JA |

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 87-65-0 | 2,6-Dichlorophenol | 1 | ND | | 10.0 | |
| 84-66-2 | Diethylphthalate | 1 | ND | | 10.0 | |
| 60-11-7 | p-(Dimethylamino)azobenzene | 1 | ND | | 10.0 | |
| 57-97-6 | 7,12-Dimethylbenz(a)anthracene | 1 | ND | | 10.0 | |
| 119-93-7 | 3,3'-Dimethylbenzidine | 1 | ND | | 10.0 | |
| 122-09-8 | alpha, alpha- Dimethylphenethylamine | 1 | ND | | 10.0 | |
| 105-67-9 | 2,4-Dimethylphenol | 1 | ND | | 10.0 | |
| 131-11-3 | Dimethylphthalate | 1 | ND | | 10.0 | |
| 99-65-0 | 1,3-Dinitrobenzene (m-Dinitrobenzene) | 1 | ND | | 10.0 | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol) | 1 | ND | | 25.0 | |
| 51-28-5 | 2,4-Dinitrophenol | 1 | ND | | 25.0 | |
| 121-14-2 | 2,4-Dinitrotoluene | 1 | ND | | 10.0 | |
| 606-20-2 | 2,6-Dinitrotoluene | 1 | ND | | 10.0 | |
| 117-84-0 | Di-n-octylphthalate | 1 | ND | | 10.0 | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | ND | | 10.0 | |
| 97-63-2 | Ethyl methacrylate (2-Propenoic acid) | 1 | ND | | 10.0 | |
| 62-50-0 | Ethyl methanesulfonate | 1 | ND | | 10.0 | |
| 206-44-0 | Fluoranthene | 1 | ND | | 10.0 | |
| 86-73-7 | Fluorene | 1 | ND | | 10.0 | |
| 118-74-1 | Hexachlorobenzene | 1 | ND | | 10.0 | |
| 87-68-3 | Hexachlorobutadiene | 1 | ND | | 10.0 | |
| 77-47-4 | Hexachlorocyclopentadiene | 1 | ND | | 10.0 | |
| 67-72-1 | Hexachloroethane | 1 | ND | | 10.0 | |
| 70-30-4 | Hexachlorophene | 1 | ND | A6 | 10.0 | |
| 1888-71-7 | Hexachloropropene | 1 | ND | | 10.0 | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1 | ND | | 10.0 | |
| 78-59-1 | Isophorone | 1 | ND | | 10.0 | |
| 120-58-1 | Isosafrole | 1 | ND | | 10.0 | |
| 91-80-5 | Methapyrilene | 1 | ND | | 10.0 | |
| 56-49-5 | 3-Methylcholanthrene | 1 | ND | | 10.0 | |
| 80-62-6 | Methyl methacrylate | 1 | ND | | 10.0 | |
| 66-27-3 | Methyl methanesulfonate | 1 | ND | | 10.0 | |
| 91-57-6 | 2-Methylnaphthalene | 1 | ND | | 10.0 | |
| 95-48-7 | 2-Methylphenol (o-Cresol) | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

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# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW4-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-006 **Episode:** PGR **Sample Qu:**

**Description:** TAC-SWMV **Matrix:** Water **% Moisture:** n/a

**Method:** SW 8270 Appendix IX Semivolatile Organics **Prep Level:** Water **Batch:** 28484

**Units:** ug/l **Target List:** 8270AP9WAT

**Prep Factor:** 1.00 **Leached:** n/a **Prepared:** 30-Nov-98 **Analyzed:** 02-Dec-98 22:39 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 108-39-4 | 3-Methylphenol (m-Cresol) | 1 | ND | A7 | 10.0 | |
| 106-44-5 | 4-Methylphenol (p-Cresol) | 1 | ND | | 10.0 | |
| 91-20-3 | Naphthalene | 1 | ND | | 10.0 | |
| 134-32-7 | 1-Naphthaleneamine (1-Naphthylamine) | 1 | ND | | 10.0 | |
| 91-59-8 | 2-Naphthaleneamine (2-Naphthylamine) | 1 | ND | | 10.0 | |
| 130-15-4 | 1,4-Naphthoquinone | 1 | ND | | 50.0 | |
| 88-74-4 | 2-Nitroaniline (o-Nitroaniline) | 1 | ND | | 25.0 | |
| 99-09-2 | 3-Nitroaniline (m-Nitroaniline) | 1 | ND | | 25.0 | |
| 100-01-6 | 4-Nitroaniline (p-Nitroaniline) | 1 | ND | | 25.0 | |
| 98-95-3 | Nitrobenzene | 1 | ND | | 10.0 | |
| 88-75-5 | 2-Nitrophenol (o-Nitrophenol) | 1 | ND | | 10.0 | |
| 100-02-7 | 4-Nitrophenol (p-Nitrophenol) | 1 | ND | | 25.0 | |
| 56-57-2 | 4-Nitroquinoline-1-oxide | 1 | ND | | 10.0 | |
| 924-16-3 | N-Nitrosodi-n-butylamine | 1 | ND | | 10.0 | |
| 55-18-5 | N-Nitrosodiethylamine | 1 | ND | | 10.0 | |
| 62-75-9 | N-Nitrosodimethylamine | 1 | ND | | 10.0 | |
| 86-30-6 | N-Nitrosodiphenylamine (Diphenylamine) | 1 | ND | A10 | 10.0 | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 1 | ND | | 10.0 | |
| 10595-95-6 | N-Nitrosomethylethylamine | 1 | ND | | 10.0 | |
| 59-89-2 | N-Nitrosomorpholine | 1 | ND | | 10.0 | |
| 100-75-4 | N-Nitrosopiperidine | 1 | ND | | 10.0 | |
| 930-55-2 | N-Nitrosopyrrolidine | 1 | ND | | 10.0 | |
| 99-55-8 | 5-Nitro-o-toluidine | 1 | ND | | 10.0 | |
| 608-93-5 | Pentachlorobenzene | 1 | ND | | 10.0 | |
| 76-01-7 | Pentachloroethane | 1 | ND | | 10.0 | |
| 82-68-8 | Pentachloronitrobenzene | 1 | ND | | 10.0 | |
| 87-86-5 | Pentachlorophenol | 1 | ND | | 25.0 | |
| 62-44-2 | Phenacetin | 1 | ND | | 10.0 | |
| 85-01-8 | Phenanthrene | 1 | ND | | 10.0 | |
| 108-95-2 | Phenol | 1 | ND | | 10.0 | |
| 106-50-3 | p-Phenylenediamine | 1 | ND | | 10.0 | |
| 109-06-08 | 2-Picoline (2-Methylpyridine) | 1 | ND | | 10.0 | |
| 23950-58-5 | Pronamide | 1 | ND | | 10.0 | |
| 129-00-0 | Pyrene | 1 | ND | | 10.0 | |

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:36:53

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Protocol

**Client ID:** #2-GW-MW4-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-006 **Episode:** PGR **Sample Qu:**

**Description:** TAC-SWMV **Matrix:** Water **% Moisture:** n/a

**Method:** SW 8270 Appendix IX Semivolatile Organics **Prep Level:** Water **Batch:** 28484

**Units:** ug/l **Target List:** 8270AP9WAT

**Prep Factor:** 1.00 **Leached:** n/a **Prepared:** 30-Nov-98 **Analyzed:** 02-Dec-98 22:39 JA

| CAS Number | Parameter | Dilution | Result | Qu | Reporting Limit | Reg. Limit |
|---|---|---|---|---|---|---|
| 110-86-1 | Pyridine | 1 | ND | | 10.0 | |
| 94-59-7 | Safrole | 1 | ND | | 10.0 | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | 1 | ND | | 10.0 | |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | 1 | ND | | 10.0 | |
| 95-53-4 | o-Toluidine | 1 | ND | | 10.0 | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1 | ND | | 10.0 | |
| 95-95-4 | 2,4,5-Trichlorophenol | 1 | ND | | 25.0 | |
| 88-06-2 | 2,4,6-Trichlorophenol | 1 | ND | | 10.0 | |
| 99-35-4 | 1,3,5-Trinitrobenzene (sym-Trinitrobenzene) | 1 | ND | | 10.0 | |

111 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MW1-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-001 **Episode:** PGR

**Description:** TAC-SWMV **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |
| Barium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 200 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |
| Cadmium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |
| Chromium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |
| Lead | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 3.00 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |
| Mercury | SW 7470 | 28511 | 1 | 1 | ND | | ug/l | 0.200 | 02-Dec-98 | 02-Dec-98 | 13:44 DNT | |
| Selenium | SW 6010 | 28510 | 1 | 1 | 5.76 | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |
| Silver | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:37 KJR | |

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:37:15

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MW5-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-002 **Episode:** PGR

**Description:** TAC-SWMV **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |
| Barium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 200 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |
| Cadmium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |
| Chromium | SW 6010 | 28510 | 1 | 1 | 793 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |
| Lead | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 3.00 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |
| Mercury | SW 7470 | 28511 | 1 | 1 | ND | | ug/l | 0.200 | 02-Dec-98 | 02-Dec-98 | 13:51 DNT | |
| Selenium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |
| Silver | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:58 KJR | |

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:37:15

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MS-MW5-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-003S **Episode:** PGR

**Description:** TAC-SWMV/MATRIX SPIKE **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | SW 6010 | 28510 | 1 | 1 | 1760 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |
| Barium | SW 6010 | 28510 | 1 | 1 | 1810 | | ug/l | 200 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |
| Cadmium | SW 6010 | 28510 | 1 | 1 | 38.4 | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |
| Chromium | SW 6010 | 28510 | 1 | 1 | 768 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |
| Lead | SW 6010 | 28510 | 1 | 1 | 443 | | ug/l | 3.00 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |
| Mercury | SW 7470 | 28511 | 1 | 1 | 0.866 | | ug/l | 0.200 | 02-Dec-98 | 02-Dec-98 | 13:46 DNT | |
| Selenium | SW 6010 | 28510 | 1 | 1 | 1690 | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |
| Silver | SW 6010 | 28510 | 1 | 1 | 35.0 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:42 KJR | |

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 15:01:45

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MSD-MW5-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-004D **Episode:** PGR

**Description:** TAC-SWMV/MSD **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | SW 7470 | 28511 | 1 | 1 | ND | | ug/l | 0.200 | 02-Dec-98 | 02-Dec-98 13:48 DNT | |

1 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 15:11:05

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MSD-MW5-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-004SD **Episode:** PGR

**Description:** TAC-SWMV/MSD **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | SW 6010 | 28510 | 1 | 1 | 1700 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |
| Barium | SW 6010 | 28510 | 1 | 1 | 1790 | | ug/l | 200 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |
| Cadmium | SW 6010 | 28510 | 1 | 1 | 37.4 | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |
| Chromium | SW 6010 | 28510 | 1 | 1 | 772 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |
| Lead | SW 6010 | 28510 | 1 | 1 | 435 | | ug/l | 3.00 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |
| Selenium | SW 6010 | 28510 | 1 | 1 | 1620 | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |
| Silver | SW 6010 | 28510 | 1 | 1 | 33.9 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 11:48 KJR | |

7 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 15:11:06

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MW2-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-005 **Episode:** PGR

**Description:** TAC-SWMV **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |
| Barium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 200 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |
| Cadmium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |
| Chromium | SW 6010 | 28510 | 1 | 1 | 15700 | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |
| Lead | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 3.00 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |
| Mercury | SW 7470 | 28511 | 1 | 1 | ND | | ug/l | 0.200 | 02-Dec-98 | 02-Dec-98 | 13:58 DNT | |
| Selenium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |
| Silver | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 12:04 KJR | |

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:37:16

# Report of Laboratory Analysis

## Pace Analytical Services, Inc. - New Orleans

### Single Sample - Inorganic Parameters

**Client ID:** #2-GW-MW4-01 **Client:** ECO-SYSTEMS, INCORPORATED/MS

**Project:** GW SAMPLING #1 **Site:** None

**Lab ID:** PGR-006 **Episode:** PGR

**Description:** TAC-SWMV **Matrix:** Water **%Moisture:** n/a

| ParameterName | Method | Batch | DF | PF | Result | Qu | Units | Reporting Limit | Prep. | Analysis | | Reg. Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |
| Barium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 200 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |
| Cadmium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |
| Chromium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |
| Lead | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 3.00 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |
| Mercury | SW 7470 | 28511 | 1 | 1 | ND | | ug/l | 0.200 | 02-Dec-98 | 02-Dec-98 | 14:00 DNT | |
| Selenium | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 5.00 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |
| Silver | SW 6010 | 28510 | 1 | 1 | ND | | ug/l | 10.0 | 02-Dec-98 | 03-Dec-98 | 12:09 KJR | |

8 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

12/11/98 14:37:16

# ATTACHMENT B

# EFFLUENT FOR WASTEWATER TREATMENT PLANT

## Analytical Data Sheets

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: TEXTRON AUTOMOTIVE COMPANY

File Number: BT37026 Sample Date/Time: 02-17/18-97
Collected By: Client Date/Time Rec'd: 02-19-97 @ 1030

NPDES PERMIT APPLICATION

| Analyte/Method # | Outfall 001 | MDL | Date/Time/Analyst |
|---|---|---|---|
| Part A: | | | |
| BOD/405.1 | 5 | 1 | 02/20/97/1530/RWC |
| COD/410.4 | 29 | 10 | 02-21-97/1230/KAW |
| TOC/415.1 | 25.3 | 0.1 | 02-24-97/1400/RWC |
| Ammonia/350.2 | ND | 0.1 | 02-28-97/0945/KAW |
| Part B: | | | |
| Bromide/320.1 | 0.41 | 0.05 | 03-06-97/1130/TEB |
| Chlorine Residual/330.5 | ND | 0.02 | 02-19-97/1040/RWC |
| Fluoride/340.2 | 0.10 | 0.1 | 03-05-97/1305/TEB |
| Nitrate-Nitrite/353.3 | 9.45 | 0.05 | 02-25-97/1100/TEB |
| Nitrogen, Organic/351.3 | ND | 0.3 | 02-28-97/1510/DAW |
| Phosphorus/365.2 | 2.10 | 0.01 | 02-25-97/1000/RWC |
| Sulfate/375.4 | 328 | 1 | 02-25-97/1550/TEB |
| Sulfide/376.1 | ND | 0.4 | 02-25-97/1430/RWC |
| Sulfite/377.1 | ND | 2 | 02-19-97/1100/RWC |
| Surfactants/425.1 | 0.15 | 0.01 | 03-14-97/1550/TEB |

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by:

Post-it® Fax Note 7671

| | |
|---|---|
| To Jeff Pinterich | Date / # of pages ▶ |
| Co./Dept. | From Don Williams |
| Phone # 255-2288 | Co. Textron Auto |
| Fax # 615 256-8332 | Phone # 601 226-1161 |
| | Fax # |

jw

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: TEXTRON AUTOMOTIVE COMPANY

File Number: BT37026
Collected By: Client

Sample Date/Time: 02-17/18-97
Date/Time Rec'd: 02-19-97 @ 1030

NPDES PERMIT APPLICATION

| Analyte/Method # | Outfall 001 | MDL | Date/Time/Analyst |
|---|---|---|---|
| Part B: | | | |
| Aluminum/200.7 | 0.07 | 0.05 | 03-04-97/1555/JMD |
| Barium/200.7 | 0.056 | 0.002 | 03-06-97/1200/JMD |
| Boron/200.7 | ND | 0.03 | 03-06-97/1430/JMD |
| Cobalt/200.7* | ND | 0.001 | 03-05-97/1645/JMD |
| Iron/236.1 | 0.51 | 0.05 | 03-05-97/0900/JMD |
| Magnesium/242.1 | 3.10 | 0.04 | 03-06-97/1435/JMD |
| Molybdenum/200.7 | ND | 0.003 | 03-06-97/1430/JMD |
| Manganese/243.1 | 0.06 | 0.02 | 03-05-97/0910/JMD |
| Tin/200.7 | ND | 0.05 | 03-06-97/1200/JMD |
| Titanium/200.7 | ND | 0.05 | 03-06-97/1420/JMD |
| Part C: | | | |
| Antimony/200.7 | ND | 0.02 | 03-06-97/1430/JMD |
| Arsenic/200.7* | ND | 0.002 | 02-25-97/1620/JMD |
| Beryllium/200.7 | ND | 0.001 | 03-06-97/1430/JMD |
| Mercury/245.2 | ND | 0.2 | 03-05-97/1000/JMD |
| Selenium/200.7* | ND | 0.002 | 02-26-97/1200/JMD |
| Thallium/200.7* | ND | 0.001 | 02-26-97/1200/KAW |
| Phenols/8270 | ND | 0.05 | 02-24-97/0900/DEC |

*Ultrasonic Nebulizer

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

jw

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: TEXTRON AUTOMOTIVE COMPANY

File Number: BT37026 Sample Date/Time: 02-17/18-97
Collected By: Client Date/Time Rec'd: 02-19-97 @ 1030

NPDES PERMIT APPLICATION

| Analyte/Method # | Outfall 001 | MDL | Date/Time/Analyst |
|---|---|---|---|
| Part B: | | | |
| Aluminum/200.7 | 0.07 | 0.05 | 03-04-97/1555/JMD |
| Barium/200.7 | 0.056 | 0.002 | 03-06-97/1200/JMD |
| Boron/200.7 | ND | 0.03 | 03-06-97/1430/JMD |
| Cobalt/200.7* | ND | 0.001 | 03-05-97/1645/JMD |
| Iron/236.1 | 0.51 | 0.05 | 03-05-97/0900/JMD |
| Magnesium/242.1 | 3.10 | 0.04 | 03-06-97/1435/JMD |
| Molybdenum/200.7 | ND | 0.003 | 03-06-97/1430/JMD |
| Manganese/243.1 | 0.06 | 0.02 | 03-05-97/0910/JMD |
| Tin/200.7 | ND | 0.05 | 03-06-97/1200/JMD |
| Titanium/200.7 | ND | 0.05 | 03-06-97/1420/JMD |
| Part C: | | | |
| Antimony/200.7 | ND | 0.02 | 03-06-97/1430/JMD |
| Arsenic/200.7* | ND | 0.002 | 02-25-97/1620/JMD |
| Beryllium/200.7 | ND | 0.001 | 03-06-97/1430/JMD |
| Mercury/245.2 | ND | 0.2 | 03-05-97/1000/JMD |
| Selenium/200.7* | ND | 0.002 | 02-26-97/1200/JMD |
| Thallium/200.7* | ND | 0.001 | 02-26-97/1200/KAW |
| Phenols/8270 | ND | 0.05 | 02-24-97/0900/DEC |

*Ultrasonic Nebulizer

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: _____
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILES - PRIORITY POLLUTANTS - GC/MS ANALYSIS DATA

Client: Textron Automotive
Location: Outfall
File #: BT37026

Collected: 0217-10/97 Client
Received: 021997 @ 1030 RWC
Analyzed: 022597 @ 1354 CRR

Sample Type: Water
Analysis Method: 8260

| I. Pollutant and CAS Number (if available) | MDL ug/L (ppb) | SAMPLE Detected Concen. ug/L (ppb) | SAMPLE Spike Amt. ng | SAMPLE Spike % Recov | BLANK Detected Concen. ug/L (ppb) | BLANK Spike Amt. ng | BLANK Spike % Recov | MATRIX (BT37143) Detected Concen. ng/ml | MATRIX Spike Amt. ng | MATRIX Spike % Recov | DUPLICATE MATRIX (BT37143) Detected Concen. ng/ml | DUPLICATE MATRIX Spike Amt. ng | DUPLICATE MATRIX Spike % Recov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1V. Acrolein 107-02-8 | 5 | ND | | | ND | | | ND | | | ND | | |
| 2V. Acrylonitrile 107-13-1 | 5 | ND | | | ND | | | ND | | | ND | | |
| 3V. Benzene 71-43-2 | 5 | ND | | | ND | | | 53.1 | 250 | 106.2 | 53.1 | 250 | 106.2 |
| 4V. Bis(Chloromethyl)Ether 542-88-1 | 5 | ND | | | ND | | | ND | | | ND | | |
| 5V. Bromoform 75-25-2 | 5 | ND | | | ND | | | ND | | | ND | | |
| 6V. Carbon Tetrachloride 56-23-5 | 5 | ND | | | ND | | | ND | | | ND | | |
| 7V. Chlorobenzene 108-90-7 | 5 | ND | | | ND | | | 51.9 | 250 | 103.8 | 50.9 | 250 | 101.8 |
| 8V. Chlorodibromomethane 124-48-1 | 5 | ND | | | ND | | | ND | | | ND | | |
| 9V. Chloroethane 75-00-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 10V. 2-Chloroethylvinyl Ether 110-75-8 | 5 | ND | | | ND | | | ND | | | ND | | |
| 11V. Chloroform 67-66-3 | 5 | ND | | | ND | | | ND | | | ND | | |
| 12V. Dichlorobromomethane 75-27-4 | 5 | ND | | | ND | | | ND | | | ND | | |
| 13V. Dichlorodifluoromethane 75-71-8 | 5 | ND | | | ND | | | ND | | | ND | | |
| 14V. 1,1-Dichloroethane 75-34-3 | 5 | ND | | | ND | | | ND | | | ND | | |
| 15V. 1,2-Dichloroethane 107-06-2 | 5 | ND | | | ND | | | ND | | | ND | | |
| 16V. 1,1-Dichloroethylene 75-35-4 | 5 | ND | | | ND | | | 47.9 | 250 | 95.8 | 49.9 | 250 | 99.8 |
| 17V. 1,2-Dichloropropane 78-87-5 | 5 | ND | | | ND | | | ND | | | ND | | |
| 18V. 1,3-Dichloropropylene 542-75-6 | 5 | ND | | | ND | | | ND | | | ND | | |
| 19V. Ethylbenzene 100-41-4 | 5 | ND | | | ND | | | ND | | | ND | | |
| 20V. Methyl Bromide 74-83-9 | 5 | ND | | | ND | | | ND | | | ND | | |
| 21V. Methyl Chloride 74-87-3 | 5 | ND | | | ND | | | ND | | | ND | | |
| 22V. Methylene Chloride 75-09-2 | 5 | ND | | | ND | | | ND | | | ND | | |
| 23V. 1,1,2,2-Tetrachloroethane 79-34-5 | 5 | ND | | | ND | | | ND | | | ND | | |
| 24V. Tetrachloroethylene 127-18-4 | 5 | ND | | | ND | | | ND | | | ND | | |
| 25V. Toluene 108-88-3 | 5 | 1.94 J | | | ND | | | 56.7 | 250 | 113.4 | 54.7 | 250 | 109.4 |
| 26V. 1,2-Trans-Dichloroethene 156-60-5 | 5 | ND | | | ND | | | ND | | | ND | | |
| 27V. 1,1,1-Trichloroethane 71-55-6 | 5 | ND | | | ND | | | ND | | | ND | | |
| 28V. 1,1,2-Trichloroethane 79-00-5 | 5 | ND | | | ND | | | ND | | | ND | | |
| 29V. Trichloroethylene 79-01-6 | 5 | 7.06 | | | ND | | | 53.0 | 250 | 106.0 | 50.7 | 250 | 101.4 |
| 30V. Trichlorofluoromethane 75-69-4 | 5 | ND | | | ND | | | ND | | | ND | | |
| 31V. Vinyl Chloride 75-01-4 | 10 | ND | | | ND | | | ND | | | ND | | |
| Surrogates: | | | | | | | | | | | | | |
| Dibromofluoromethane | | 49.9 | 250 | 99.8 | 50.9 | 250 | 101.8 | 54.8 | 250 | 109.6 | 54.3 | 250 | 108.6 |
| Toluene-d8 | | 52.0 | 250 | 104.0 | 52.3 | 250 | 102.6 | 51.3 | 250 | 102.6 | 53.9 | 250 | 107.8 |
| 4-Bromofluorobenzene | | 47.5 | 250 | 95.0 | 50.7 | 250 | 101.4 | 52.1 | 250 | 104.2 | 51.0 | 250 | 102.0 |

J - Estimated or Below Method Detection Limit.

Certified by: Michael S. Bonner

MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

[redacted] ANALYTICAL [redacted] CO[redacted]

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE/NEUTRALS/ACIDS - GC/MS ANALYSIS DATA

Client: Textron Automotive
Location: Outfall
File #: BT17026

Collection: 021897 @ 0915 Client
Extraction: 022497 @ 0900 DEC
Analysis: 030497 @ 2106 DEC
Date Time

Sample Type: Water
Extraction Method: 3510B
Analysis Method: 8270

| I. Pollutant and CAS Number (if available) | MDL ug/L (ppb) | SAMPLE Detected Concen. ug/L (ppb) | SAMPLE Spike Amt. ng | SAMPLE Spike % Recov | BLANK Detected Concen. ug/L (ppb) | BLANK Spike Amt. ng | BLANK Spike % Recov | MATRIX Detected Concen. ng/ul | MATRIX Spike Amt. ng | MATRIX Spike % Recov | DUPLICATE MATRIX Detected Concen. ng/ul | DUPLICATE MATRIX Spike Amt. ng | DUPLICATE MATRIX Spike % Recov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACID COMPOUNDS: | | | | | | | | | | | | | |
| 1A. 2-Chlorophenol 95-57-8 | 10 | ND | | | ND | | | 134.5 | 150 | 89.7 | 145.4 | 150 | 97.0 |
| 2A. 2,4-Dichlorophenol 120-83-2 | 10 | ND | | | ND | | | ND | | | ND | | |
| 3A. 2,4-Dimethylphenol 105-67-9 | 10 | ND | | | ND | | | ND | | | ND | | |
| 4A. 4,6-Dinitro-O-Cresol 534-52-1 | 50 | ND | | | ND | | | ND | | | ND | | |
| 5A. 2,4-Dinitrophenol 51-28-5 | 50 | ND | | | ND | | | ND | | | ND | | |
| 6A. 2-Nitrophenol 88-75-5 | 10 | ND | | | ND | | | ND | | | ND | | |
| 7A. 4-Nitrophenol 100-02-7 | 50 | ND | | | ND | | | 44.6 | 150 | 29.7 | 44.2 | 150 | 29.5 |
| 8A. P-Chloro-M-Cresol 59-50-7 | 10 | 1.5 J | | | ND | | | 91.8 | 150 | 61.2 | 91.1 | 150 | 60.7 |
| 9A. Pentachlorophenol 87-86-5 | 50 | ND | | | ND | | | 77.6 | 150 | 51.8 | 77.4 | 150 | 51.6 |
| 10A. Phenol 108-95-2 | 10 | ND | | | ND | | | 60.5 | 150 | 40.3 | 64.3 | 150 | 42.9 |
| 11A. 2,4,6-Trichlorophenol 88-06-2 | 10 | ND | | | ND | | | ND | | | ND | | |
| BASE/NEUTRAL COMPOUNDS: | | | | | | | | | | | | | |
| 1B. Acenaphthene 83-32-9 | 10 | ND | | | ND | | | 64.6 | 100 | 64.6 | 63.8 | 100 | 63.8 |
| 2B. Acenaphtylene 208-96-8 | 10 | ND | | | ND | | | ND | | | ND | | |
| 3B. Anthracene 120-12-7 | 10 | ND | | | ND | | | ND | | | ND | | |
| 4B. Benzidine 92-87-5 | 10 | ND | | | ND | | | ND | | | ND | | |
| 5B. Benzo(a)Anthracene 56-55-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 6B. Benzo(a)Pyrene 50-32-8 | 10 | ND | | | ND | | | ND | | | ND | | |
| 7B. 3,4-Benzofluoranthene 205-99-2 | 10 | ND | | | ND | | | ND | | | ND | | |
| 8B. Benzo(ghi)Perylene 191-24-2 | 10 | ND | | | ND | | | ND | | | ND | | |
| 9B. Benzo(k)Fluoranthene 207-08-9 | 10 | ND | | | ND | | | ND | | | ND | | |
| 10B. Bis(2-Chloroethoxy)Methane 111-91-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 11B. Bis(2-Chloroethyl)Ether 111-44-4 | 10 | ND | | | ND | | | ND | | | ND | | |
| 12B. Bis(2-Chloroisopropyl)Ether 102-60-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 13B. Bis(2-Ethylhexyl)Phthalate 117-81-7 | 10 | 54.0 | | | ND | | | ND | | | ND | | |
| 14B. 4-Bromophenyl Phenyl Ether 101-55-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 15B. Butyl Benzyl Phthalate 85-68-7 | 10 | ND | | | ND | | | ND | | | ND | | |
| 16B. 2-Chloronapthalene 91-58-7 | 10 | ND | | | ND | | | ND | | | ND | | |
| 17B. 4-Chlorophenyl Phenyl Ether 7005-72-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 18B. Chrysene 218-01-9 | 10 | ND | | | ND | | | ND | | | ND | | |
| 19B. Dibenzo(a,h)Anthracene 53-70-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 20B. 1,2-Dichlorobenzene 95-50-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 21B. 1,3-Dichlorobenzene 541-73-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 22B. 1,4-Dichlorobenzene 106-46-7 | 10 | ND | | | ND | | | 67.4 | 100 | 67.4 | 73.3 | 100 | 73.3 |
| 23B. 3,3'Dichlorobenzidine 91-94-1 | 20 | ND | | | ND | | | ND | | | ND | | |
| 24B. Diethyl Phthalate 84-66-2 | 10 | ND | | | ND | | | ND | | | ND | | |
| 25B. Dimethyl Phthalate 131-11-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 26B. Di-N-Butyl Phthalate 84-74-2 | 10 | ND | | | ND | | | 1.7 J | | | ND | | |
| 27B. 2,4-Dinitrotoluene 121-14-2 | 10 | ND | | | ND | | | 63.5 | 100 | 63.5 | 63.2 | 100 | 63.2 |
| 28B. 2,6-Dinitrotoluene 606-20-2 | 10 | ND | | | ND | | | ND | | | ND | | |
| 29B. Di-N-Octyl Phthalate 117-84-0 | 10 | ND | | | ND | | | ND | | | ND | | |
| 30B. 1,2-Diphenylhydrazine 122-66-7 | 10 | ND | | | ND | | | ND | | | ND | | |

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE/NEUTRALS/ACIDS - GC/MS ANALYSIS DATA

Client: Textron Automotive
Location: Outfall
File #: BT37026

Collection: 021897 @ 0915 Client
Extraction: 022497 @ 0900 DEC
Analysis: 030497 @ 2106 DEC
Date Time

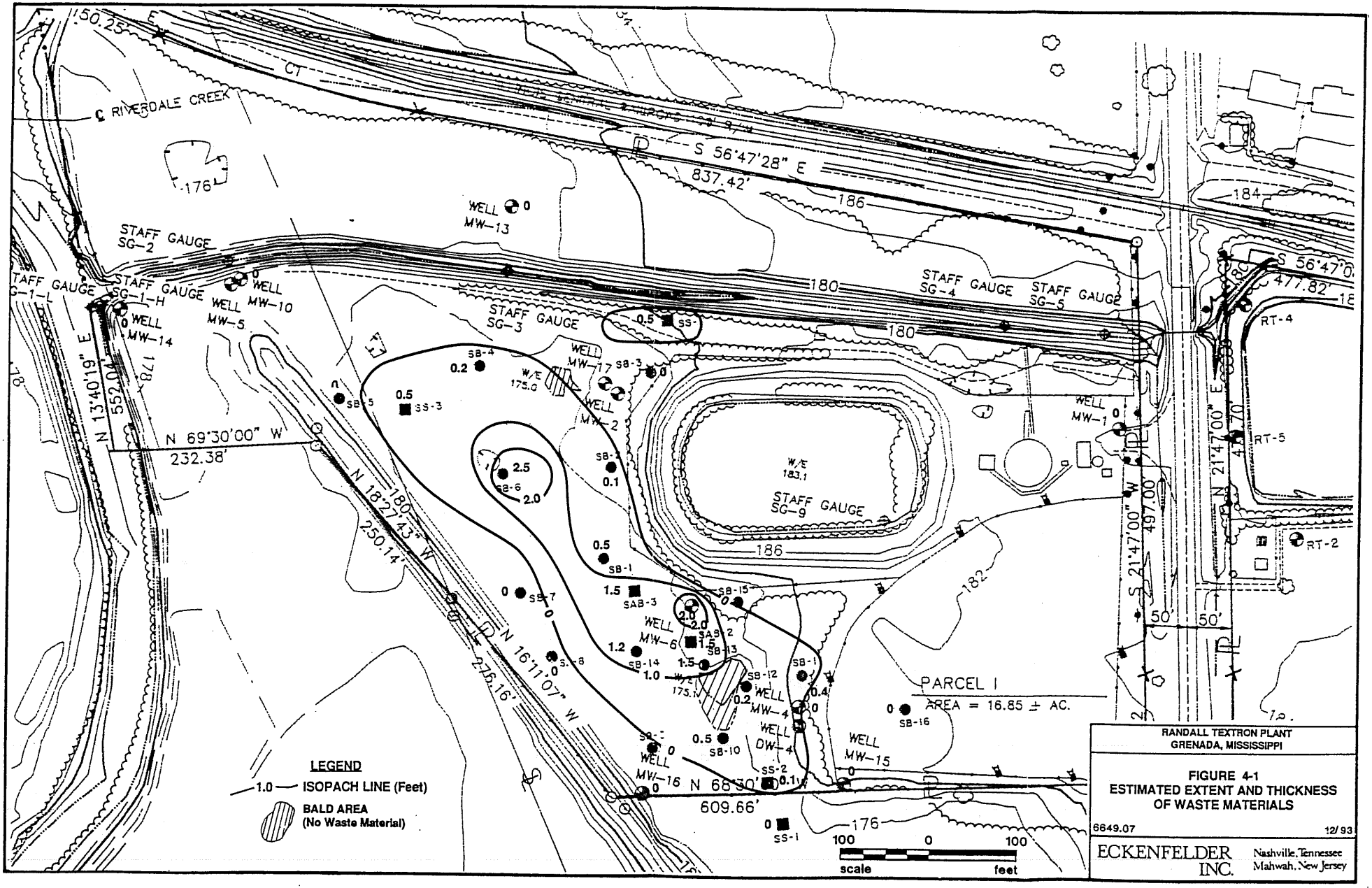
Sample Type: Water
Extraction Method: 3510B
Analysis Method: 8270

| I. Pollutant and CAS Number (if available) | MDL ug/L (ppb) | SAMPLE Detected Concen. ug/L (ppb) | SAMPLE Spike Amt. ng | SAMPLE Spike % Recov | BLANK Detected Concen. ug/L (ppb) | BLANK Spike Amt. ng | BLANK Spike % Recov | MATRIX Detected Concen. ng/ul | MATRIX Spike Amt. ng | MATRIX Spike % Recov | DUPLICATE MATRIX Detected Concen. ng/ul | DUPLICATE MATRIX Spike Amt. ng | DUPLICATE MATRIX Spike % Recov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASE/NEUTRALS COMPOUNDS (cont'd) | | | | | | | | | | | | | |
| 31B. Fluoranthene 206-44-0 | 10 | ND | | | ND | | | ND | | | ND | | |
| 32B. Fluorene 86-73-7 | 10 | ND | | | ND | | | ND | | | ND | | |
| 33B. Hexachlorobenzene 118-74-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 34B. Hexachlorobutadiene 87-68-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 35B. Hexachlorocyclopentadiene 77-47-4 | 10 | ND | | | ND | | | ND | | | ND | | |
| 36B. Hexachloroethane 67-72-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 37B. Indeno(1,2,3-cd)Pyrene 193-39-5 | 10 | ND | | | ND | | | ND | | | ND | | |
| 38B. Isophorone 78-59-1 | 10 | ND | | | ND | | | ND | | | ND | | |
| 39B. Naphthalene 91-20-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 40B. Nitrobenzene 98-95-3 | 10 | ND | | | ND | | | ND | | | ND | | |
| 41B. N Nitrosodimethylamine 62-75-9 | 10 | ND | | | ND | | | ND | | | ND | | |
| 42B. N-Nitrosodi-N-Propylamine 621-64-7 | 10 | ND | | | ND | | | 68.4 | 100 | 68.4 | 67.3 | 100 | 67.3 |
| 43B. N-Nitrosodiphenylamine 86-30-6 | 10 | 1.7 J | | | ND | | | ND | | | ND | | |
| 44B. Phenanthrene 85-01-8 | 10 | ND | | | ND | | | ND | | | ND | | |
| 45B. Pyrene 129-00-0 | 10 | ND | | | ND | | | 74.3 | 100 | 74.3 | 75.3 | 100 | 75.3 |
| 46B. 1,2,4-Trichlorobenzene 120-82-1 | 10 | ND | | | ND | | | 39.1 | 100 | 39.1 | 45.2 | 100 | 45.2 |
| SURROGATES: | | | | | | | | | | | | | |
| Fluorophenol | | 116.0 | 200 | 58.0 | 63.7 | 200 | 31.9 | 46.9 | 200 | 23.4 | 72.6 | 200 | 36.3 |
| Phenol-d6 | | 90.8 | 200 | 45.4 | 41.7 | 200 | 20.9 | 33.5 | 200 | 16.7 | 45.7 | 200 | 22.9 |
| Nitrobenzene-d5 | | 70.6 | 100 | 70.6 | 63.1 | 100 | 63.1 | 56.8 | 100 | 56.8 | 90.9 | 100 | 90.9 |
| Fluorobiphenyl | | 76.0 | 100 | 76.0 | 44.6 | 100 | 44.6 | 53.3 | 100 | 53.3 | 83.7 | 100 | 83.7 |
| 2,4,6-Tribromophenol | | 190.4 | 200 | 95.2 | 204.8 | 200 | 102.4 | 219.5 | 200 | 109.8 | 232.0 | 200 | 116.0 |
| Terphenyl-d-14 | | 102.3 | 100 | 102.3 | 105.0 | 100 | 105.0 | 103.2 | 100 | 103.2 | 102.5 | 100 | 102.5 |



Certified by: [signature]
MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

U:ZLAM FROM BONNER A NALYTICAL TESTIN TO 16012261166 P.05

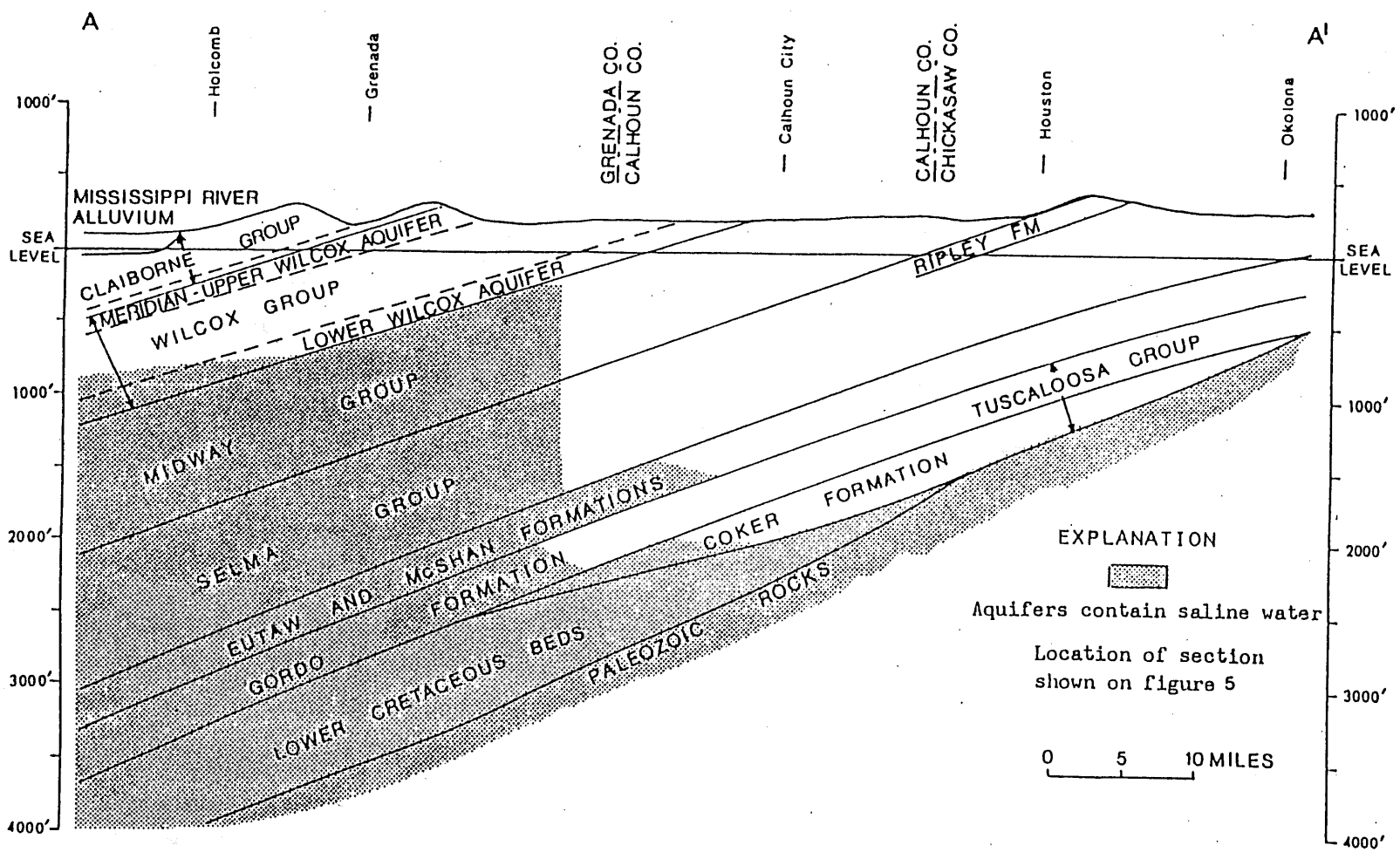



RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

**FIGURE 4-1**
**ESTIMATED EXTENT AND THICKNESS OF WASTE MATERIALS**

6649.07 12/93

ECKENFELDER INC. Nashville, Tennessee Mahwah, New Jersey



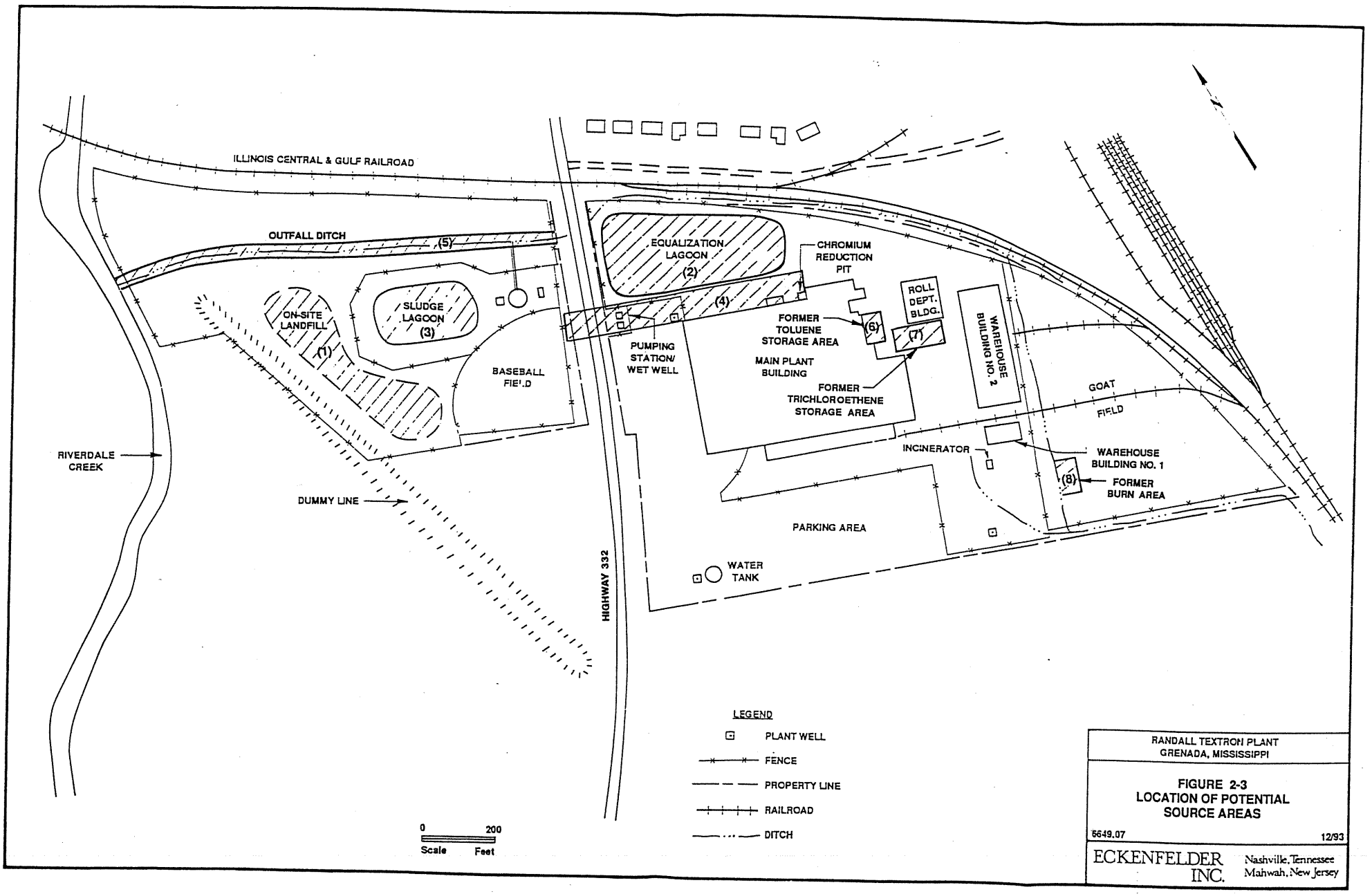

SOURCE: NEWCOME, 1973

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

**FIGURE 4-11**
**GEOHYDROLOGIC SECTION FROM WESTERN GRENADA COUNTY TO EASTERN CHICKASAW COUNTY**

6649.07 12/93

ECKENFELDER INC. Nashville, Tennessee Mahwah, New Jersey

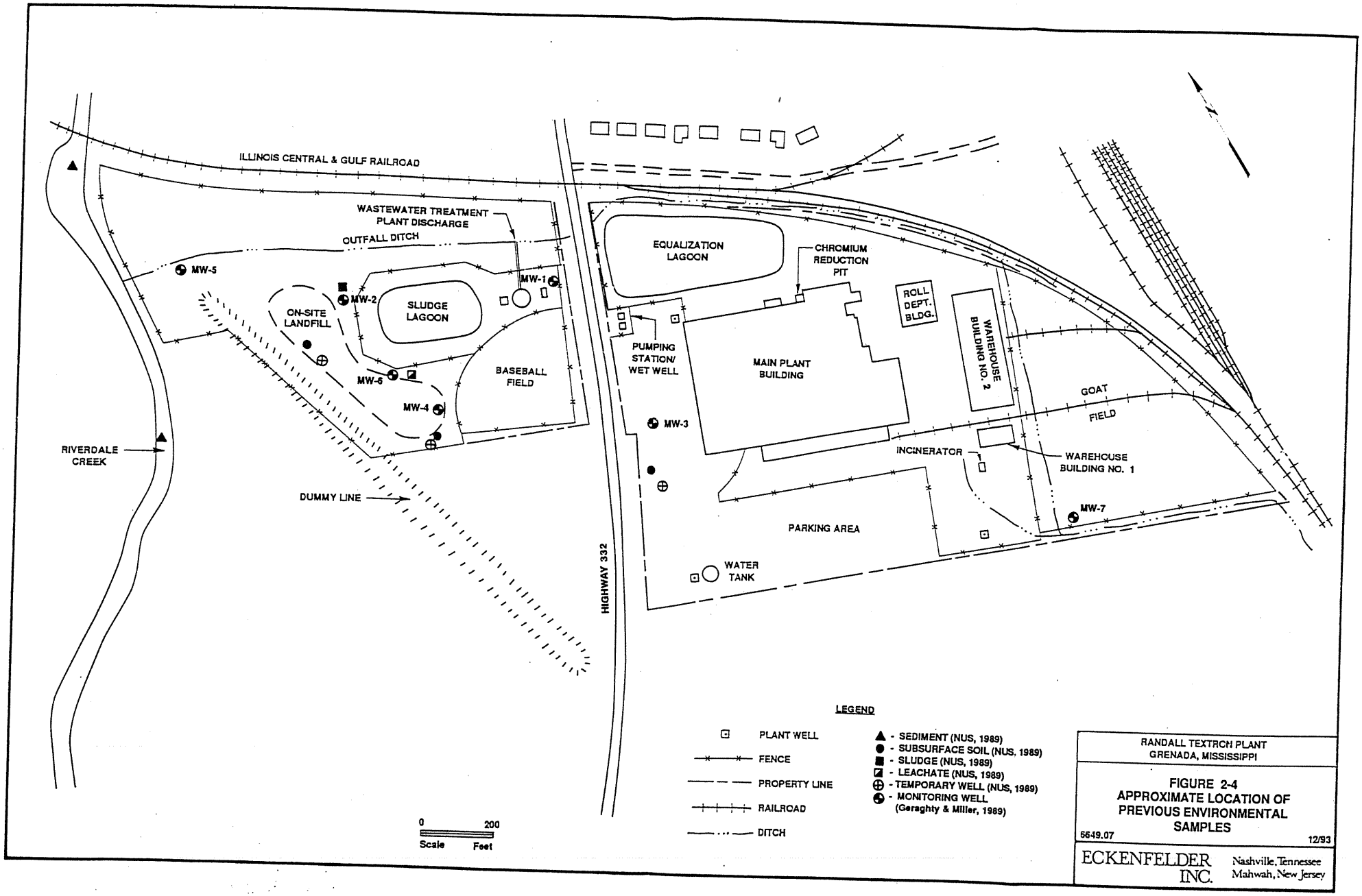


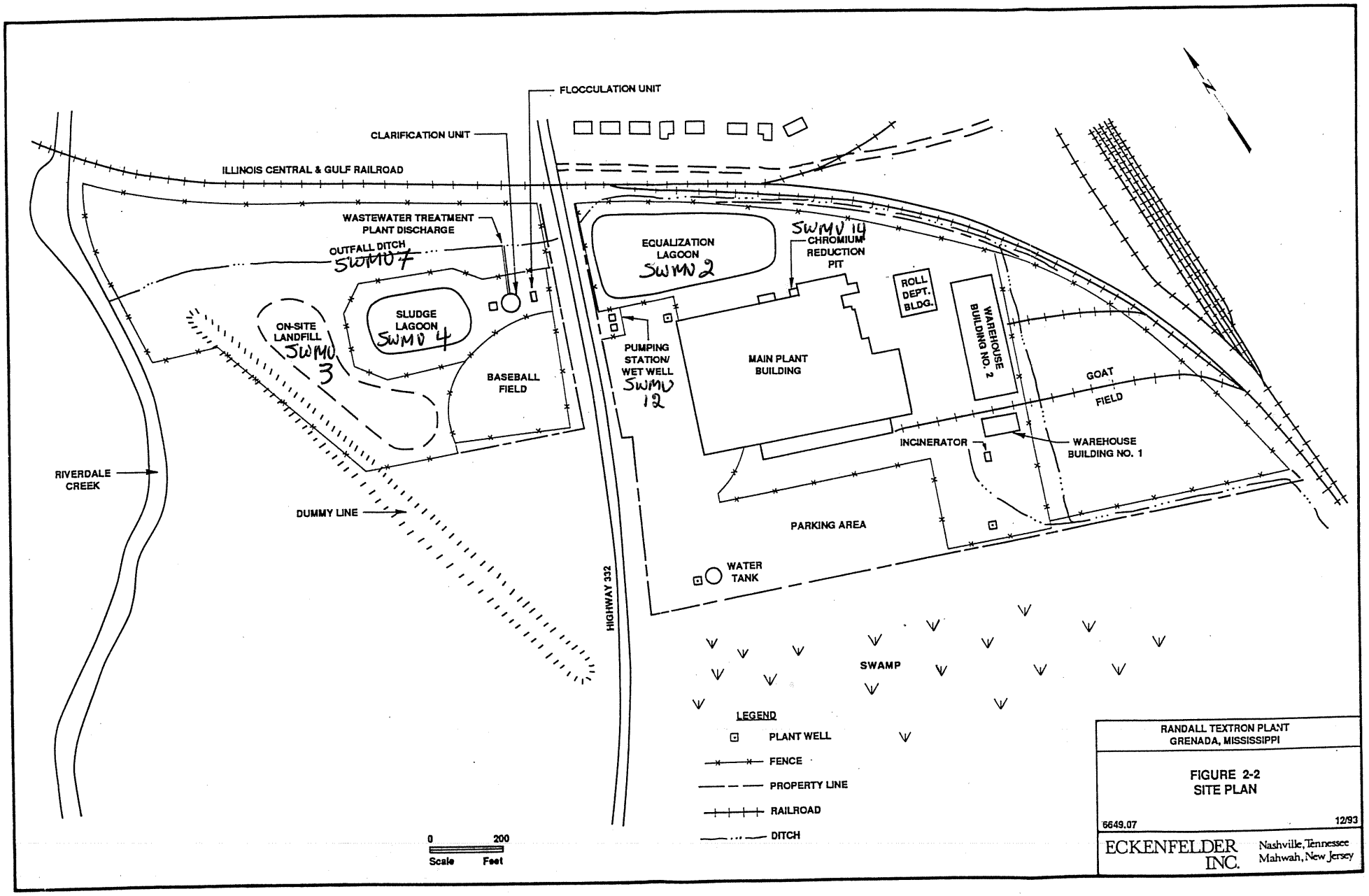

RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI

FIGURE 2-3
LOCATION OF POTENTIAL SOURCE AREAS

5649.07 12/93

ECKENFELDER INC. Nashville, Tennessee Mahwah, New Jersey


ILLINOIS CENTRAL & GULF RAILROAD
WASTEWATER TREATMENT PLANT DISCHARGE
OUTFALL DITCH
MW-5
MW-2
MW-1
ON-SITE LANDFILL
SLUDGE LAGOON
BASEBALL FIELD
MW-6
MW-4
RIVERDALE CREEK
DUMMY LINE
HIGHWAY 332
EQUALIZATION LAGOON
CHROMIUM REDUCTION PIT
ROLL DEPT. BLDG.
WAREHOUSE BUILDING NO. 2
PUMPING STATION/ WET WELL
MAIN PLANT BUILDING
GOAT FIELD
MW-3
INCINERATOR
WAREHOUSE BUILDING NO. 1
MW-7
PARKING AREA
WATER TANK
0
200
Scale
Feet
LEGEND
PLANT WELL
FENCE
PROPERTY LINE
RAILROAD
DITCH
- SEDIMENT (NUS, 1989)
- SUBSURFACE SOIL (NUS, 1989)
- SLUDGE (NUS, 1989)
- LEACHATE (NUS, 1989)
- TEMPORARY WELL (NUS, 1989)
- MONITORING WELL (Geraghty & Miller, 1989)
RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI
FIGURE 2-4
APPROXIMATE LOCATION OF PREVIOUS ENVIRONMENTAL SAMPLES
5649.07
12/93
ECKENFELDER INC.
Nashville, Tennessee
Mahwah, New Jersey


FLOCCULATION UNIT
CLARIFICATION UNIT
ILLINOIS CENTRAL & GULF RAILROAD
WASTEWATER TREATMENT PLANT DISCHARGE
OUTFALL DITCH
SWMU 7
ON-SITE LANDFILL
SWMU 3
SLUDGE LAGOON
SWMU 4
BASEBALL FIELD
EQUALIZATION LAGOON
SWMU 2
SWMU 14
CHROMIUM REDUCTION PIT
ROLL DEPT. BLDG.
WAREHOUSE BUILDING NO. 2
PUMPING STATION/ WET WELL
SWMU 12
MAIN PLANT BUILDING
GOAT FIELD
INCINERATOR
WAREHOUSE BUILDING NO. 1
RIVERDALE CREEK
DUMMY LINE
PARKING AREA
WATER TANK
HIGHWAY 332
SWAMP
LEGEND
PLANT WELL
FENCE
PROPERTY LINE
RAILROAD
DITCH
0
200
Scale
Feet
RANDALL TEXTRON PLANT
GRENADA, MISSISSIPPI
FIGURE 2-2
SITE PLAN
6649.07
12/93
ECKENFELDER INC.
Nashville, Tennessee
Mahwah, New Jersey