TNRCC

Protecting Texas
by Reducing and
Preventing Pollution

Screening Site Inspection Report
Volume I of II

for

McGinnes Industrial Maintenance Corporation
TXD 980 697 931
Hitchcock, Galveston County, Texas

Prepared in cooperation with the
U.S. Environmental Protection Agency

May 1998

912428

SCREENING SITE INSPECTION REPORT

MCGINNES INDUSTRIAL MAINTENACNE CORPORATION

HITCHCOCK, GALVESTON COUNTY, TEXAS

TXD980679031

SIGNATURE PAGE

Marshall A. Cedilote — 5/29/98

Marshall A. Cedilote — *Date*
Texas Natural Resource Conservation Commission
Site Investigation Manager

Catriona V. Smith — 5/29/98

Catriona V. Smith — *Date*
Texas Natural Resource Conservation Commission
PA/SI Program QA/QC Officer

Allan M. Sells — 5/29/98

Allan M. Sells — *Date*
Texas Natural Resource Conservation Commission
PA/SI Program Manager

Wesley G. Newberry — 6-1-98

Wesley G. Newberry — *Date*
Texas Natural Resource Conservation Commission
PA/SI Program Technical Director

_____ — _____

William Kirchner — *Date*
U.S. Environmental Protection Agency

Screening Site Inspection Report

McGinnes Industrial Maintenance Corporation
Hitchcock, Galveston County, Texas
TXD 980 697 031

Prepared in cooperation with the

U.S. Environmental Protection Agency

Prepared by

Marshall A. Cedilote
Texas Natural Resource Conservation Commission
Site Assessment Section
Site Discover and Assessment Program
Austin, Texas

MAY 1998

The preparation of this report was financed through grants from the U.S. Environmental Protection Agency.

CONTENTS

	Page
Reference Listing	1
Notes to Reader	3
Site Narrative Summary	4
General Description of the site	4
Background/Operating History	4
Source Characterization	6
Summary of Source Descriptions	6
Sources Not Evaluated	38
Ground Water Migration Pathway	40
Surface Water Overland Flow/Flood Migration Pathway	41
Drinking Water Threat	44
Observed Release	44
Attribution	61
Waste Characteristics-Food Chain	62
Waste Quantity	63
Human Food Chain-Targets	64
Ground Water to Surface Water Migration Component	72
Calculation of Surface Water Pathway Score	72
Soil Exposure Pathway	73
Air Migration Pathway	74

TABLES

1.	Source Characterization - Source No. 1	9
2.	Source Characterization - Source No. 2	17
3.	Source Characterization - Source No. 3	24
4.	Source Characterization - Source No. 4	32
5.	Organic and Inorganic Constituents Detected in Background Samples	45
6.	Contaminated Samples Collected in the vicinity of the MIMC Site	49
7.	Contaminated Sediment Samples	50
8.	Data Usability for Sediment Release Samples	59
9.	Data Usability for Sediment Source Samples	60
10.	Toxicity/Persistence/Bioaccumulation	62
11.	Hazardous Waste Quantity	63
12.	Surface Water Pathway - Contaminated Samples	64
13.	Surface Water Pathway - Fishery Identification	70
14.	Surface Water Pathway - Fishery Production	71

FIGURES

Figure 1 Site Location Map 5
Figure 2 Source Sample Locations 8
Figure 3 Impoundment Numbers and Layout 39
Figure 4 Location of West Bay 42
Figure 5 Background Sample Locations 48
Figure 6 Attribution and Target Samples 65
Figure 7 Target Samples West of MIMC Site 66
Figure 8 Target Samples East of MIMC Site 67
Figure 9 Level II Segment and Remainder of TDL 69

APPENDICES

Appendix A - Site Photographs
Appendix B - TNRCC File Information
Appendix C - CLP Analytical Data SDG MFHL82
Appendix D - CLP Analytical Data SDG MFHL40
Appendix E - CLP Analytical Data SDG FFR12
Appendix F - CLP Analytical Data SDG FFR48
Appendix G - CLP Analytical Data SDG FFR18
Appendix H - CLP Audit Report
Appendix I - Dioxin/Furan Analytical Data
Appendix J - State of Texas Water Quality Inventory, Vol. 4
Appendix K - Communication with Texas Department of Health
Appendix L - Trends in Commercial Fishery Landings, 1972-1996
Appendix M - Field Audit Report
Appendix N - Field Notes
Appendix O - CLP Analytical Data SDG MFGQ96
Appendix P - PREscore Report
Appendix Q - EPA RCRA Inspection Report
Appendix R - Background Values for All Samples

REFERENCE LISTING

Reference Number	Description of the Reference
1.	U.S. Environmental Protection Agency, 40 CFR Part 300, Hazardous Ranking System, Appendix A, 55 FR 51583 December 14, 1990.
2.	U.S. Environmental Protection Agency. Hazard Ranking System Guidance Manual, Office of Solid Waste and Emergency Response, Publication 9345.1-07, November, 1992. 431 pages.
3.	U.S. Environmental Protection Agency. Guidance for Performing Site Inspections Under CERCLA, Office of Emergency and Remedial Response, Hazardous Site Evaluation Division, Publication 9345.1-05, September, 1992. 125 pages.
4.	U.S. Environmental Protection Agency, Superfund Chemical Data Matrix (SCDM). June 1996.
5.	U.S. Environmental Protection Agency, Region 6, Houston Branch. Case Number 25919, Sample Designation Group MFHL82, CLP Data Review and Analysis Date Package. From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC, To: B. Kirchner, 6SF-RA. Package. 1998. 29 pages. Included as Appendix C.
6.	U.S. Environmental Protection Agency, Region 6, Houston Branch. Case Number 25919, Sample Designation Group MFHL40, CLP Data Review and Analysis Date Package. From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC, To: B. Kirchner, 6SF-RA. Package. 1998. 40 pages. Included as Appendix D.
7.	U.S. Environmental Protection Agency, Region 6, Houston Branch. Case Number 25919, Sample Designation Group FFR12, CLP Data Review and Analysis Date Package. From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC, To: B. Kirchner, 6SF-RA. Package. 1998. 93 pages. Included as Appendix E.
8.	U.S. Environmental Protection Agency, Region 6, Houston Branch. Case Number 25919, Sample Designation Group FFR48, CLP Data Review and Analysis Date Package. From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC, To: B. Kirchner, 6SF-RA. Package. 1998. 99 pages. Included as Appendix F.
9.	U.S. Environmental Protection Agency, Region 6, Houston Branch. Case Number 25919, Sample Designation Group FFR18, CLP Data Review and Analysis Date Package. From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC, To: B. Kirchner, 6SF-RA. Package. 1998. 123 pages. Included as Appendix G.
10.	Maxim Technologies, Inc. PCDD/PCDF Analyses. 1998. 16 pages. Included as Appendix I.
11.	Texas Natural Resource Conservation Commission (TNRCC). Screening Site Inspection Workplan for McGinnes Industrial Maintenance Corporation, TXD980697031, Hitchcock, Galveston County, Texas. November 1997.

12. Texas Natural Resource Conservation Commission. The State of Texas Water Quality Inventory, Volume 4. 1994. 614 pages. Included as Appendix J.

13. TNRCC file information. 228 pages. Included as Appendix B.

14. Facsimile communication with the Texas Department of Health Seafood Safety Division. March 25, 1998. 3 pages. Included as Appendix K.

15. Texas Parks and Wildlife Department, Fisheries and Wildlife Division. Trends in Texas Commercial Fishery Landings, 1972-1992. Management Data Series, No. 141, 1997. 171 pages. Included as Appendix L.

16. U.S Environmental Protection Agency, Region 6, Houston Branch. Case Number 25725, Sample Designation Group MFGQ96, CLP Data Review and Analysis Package. From: Melvin L. Ritter, ESAT RPO, 6MD-HC, To: B. Canellas, 6SF-LT. Package. 1998. Included as Appendix O.

17. U.S. Evironmental Protection Agency, Region 6, Texas Section, RCRA Enforcement Branch, Hazardous Waste Management Division. RCRA Inspection Report for McGinnes Pits near La Marque, Texas. From: Robert R. Broyles, Chief, Surveillance Branch, 6E-S, To: Randy Brown, Chief, RCRA Enforcement Branch, 6H-E. 1993. 82 pages. Included as Appendix Q.

NOTES TO THE READER

The following rules were used when citing references in this SSI Report:

1. If the reference cited had an original page number, that number is cited.

2. If the reference cited had no original page number, then a designated tracking number is cited.

3. If the reference cited is for analytical data found within a table, the sample ID is used to locate that reference.

4. The State predecessor agencies: Texas Water Quality Board (TWQB), Texas Department of Water Resources (TDWR), Texas Water Commission (TWC), and Texas Air Control Board (TACB), referred to throughout this report are now known as the Texas Natural Resource Conservation Commission (TNRCC). The new agency, TNRCC, became effective September 1, 1993, as mandated under State Senate Bill 2 of the 73rd Regular Legislative Session.

SSI Report Narrative Summary

Name of Site: McGinnes Industrial Maintenance Corporation

EPA Region 6 Date Prepared: 5/98

CERCLIS Site ID Number: TXD 980 697 031

Owner/Operator

Rolland McGinnes

Street Address of Site: NONE (see General Location below)

County and State: Galveston County, Texas

General Location in the State: The McGinnes Industrial Maintenance Corporation (MIMC) site is located on property owned by Halls Bayou Ranch (HBR), adjacent to the Gulf Intracoastal Waterway and occupies 359.71 acres. The site is approximately 5 miles SSE of the intersection of FM 646 and FM 2004. See Figure 1 for the location of the MIMC site.

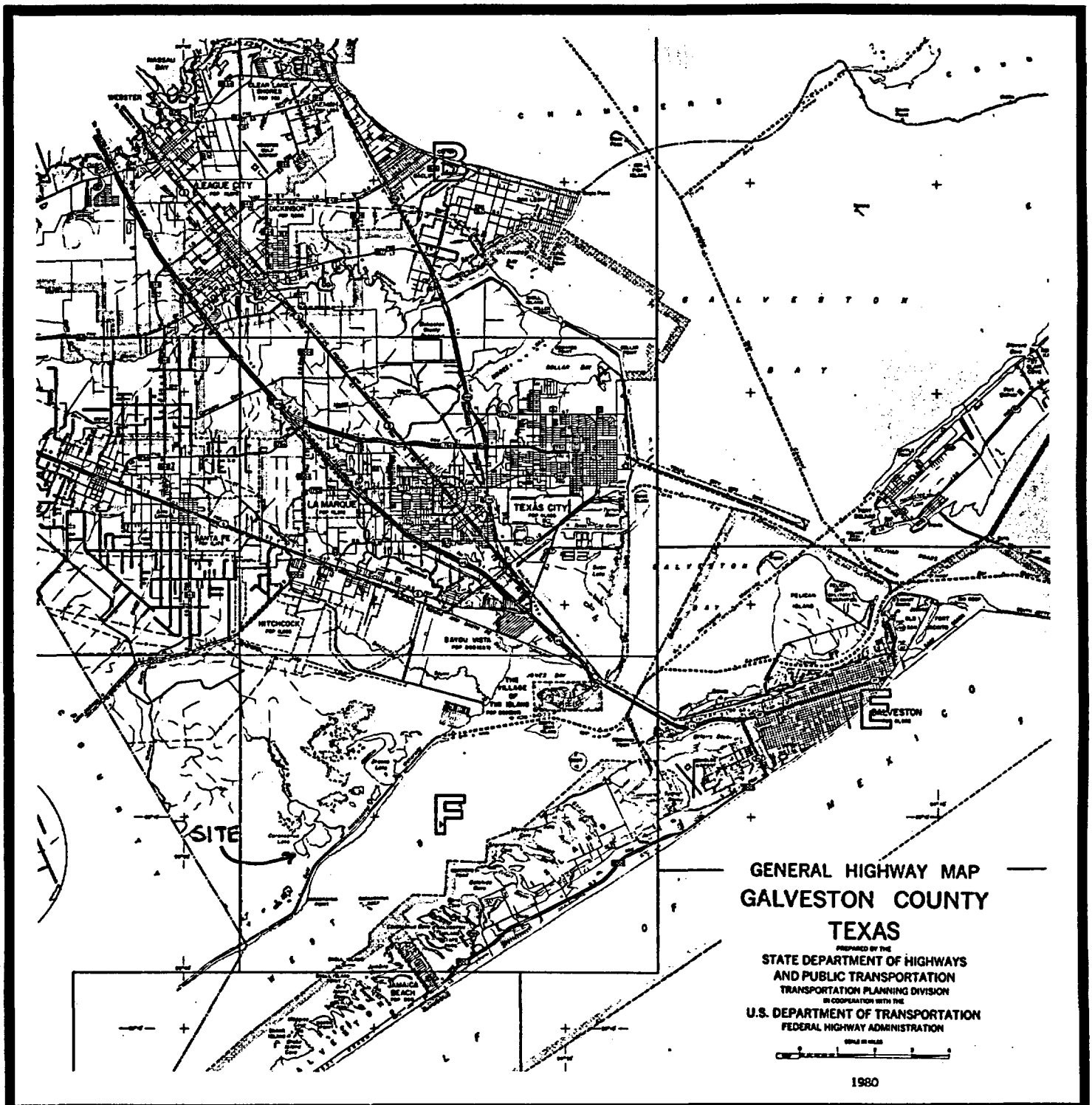
The MIMC site consists of 32 surface impoundments for the treatment/disposal of industrial waste sludge from the Gulf Coast Waste Disposal Authority (GCWDA) Washburn Tunnel facility (WBT) in Houston, Texas. A barge canal, dug by MIMC, connects the facility with the Gulf Intracoastal Waterway (ICW). The site is bordered by wetlands to the southwest, undeveloped ranch land to the west, Carancahua Lake (a.k.a. Karankawa Lake) to the north and northeast, wetlands to the east and by the ICW on the south.

MIMC began construction of the impoundments and receipt of sludge on property leased from HBR in 1966. The only waste accepted by MIMC was industrial waste sludge from GCWDA's WBT. GCWDA WBT accepted wastes for treatment from the following Houston area facilities: Simpson Pasadena Paper Company, Lyondell Petrochemical Company, Air Products' Manufacturing Corporation, AES Deepwater, Inc., Crown Central Petroleum Corporation, GATX Terminals Corporation - Galena Park Plant, GATX Terminals Corporation - Pasadena Plant, Mobay Synthetics Corporation, Goodyear Tire & Rubber Company, City of Pasadena and the GCWDA Vince Bayou facility (Reference 11).

MIMC discharges supernatant from dewatered, treated sludge to the ICW under NPDES Permit # TX0004910 and Texas Water Quality Permit # 01221. MIMC was required to cease all sludge receipt by 12:00 PM, September 18, 1994. A facility closure plan, dated January 7, 1994, was approved by the TNRCC and required that MIMC first perform an ecological risk assessment for the impoundments (Reference 11). The impoundment dikes are vegetated and structurally maintained to prevent failure due to erosion, storm surges, etc. The impoundments are now freshwater wetlands, supporting a variety of waterfowl and plants.

Topographic Map: Sea Isle Quadrangle, Texas

Site is centered at approximately:
Latitude: 29° 14' 1.5" N Longitude: 95° 01' 43.8" W



TNRCC

N
W E
S

FIGURE 1: Site Location Map

McGinnes Industrial Maintenance Corporation
TXD980697031

Hitchcock, Galveston County, Texas

2.2 SOURCE CHARACTERIZATION

2.2.1 Source Identification

- Number of the source: 1
- Name and description of the source: Impoundment #4A

  One (1) sediment sample, (SE-04)(MFHL49), was collected inside Impoundment #4A. Source sediment sample locations are depicted on Figure 2 (Appendix A, Photographs 20, 21, 22, 23, 24 of Roll # 1).

  Impoundment #4A is the final water polishing/oxidation pond for treated waste water prior to its discharge from the NPDES permitted outfall. The location of Impoundment #4A is shown on Figure 2.

- Location of the source, with reference to a map of the site:

  Impoundment #4A is located at the southern most corner of MIMC's facility (See Figure 2).

- Containment

  Gas release to air: The air migration pathway was not evaluated; therefore, gas containment was not evaluated.

  Particulate release to air: The air migration pathway was not evaluated; therefore, particulate containment was not evaluated.

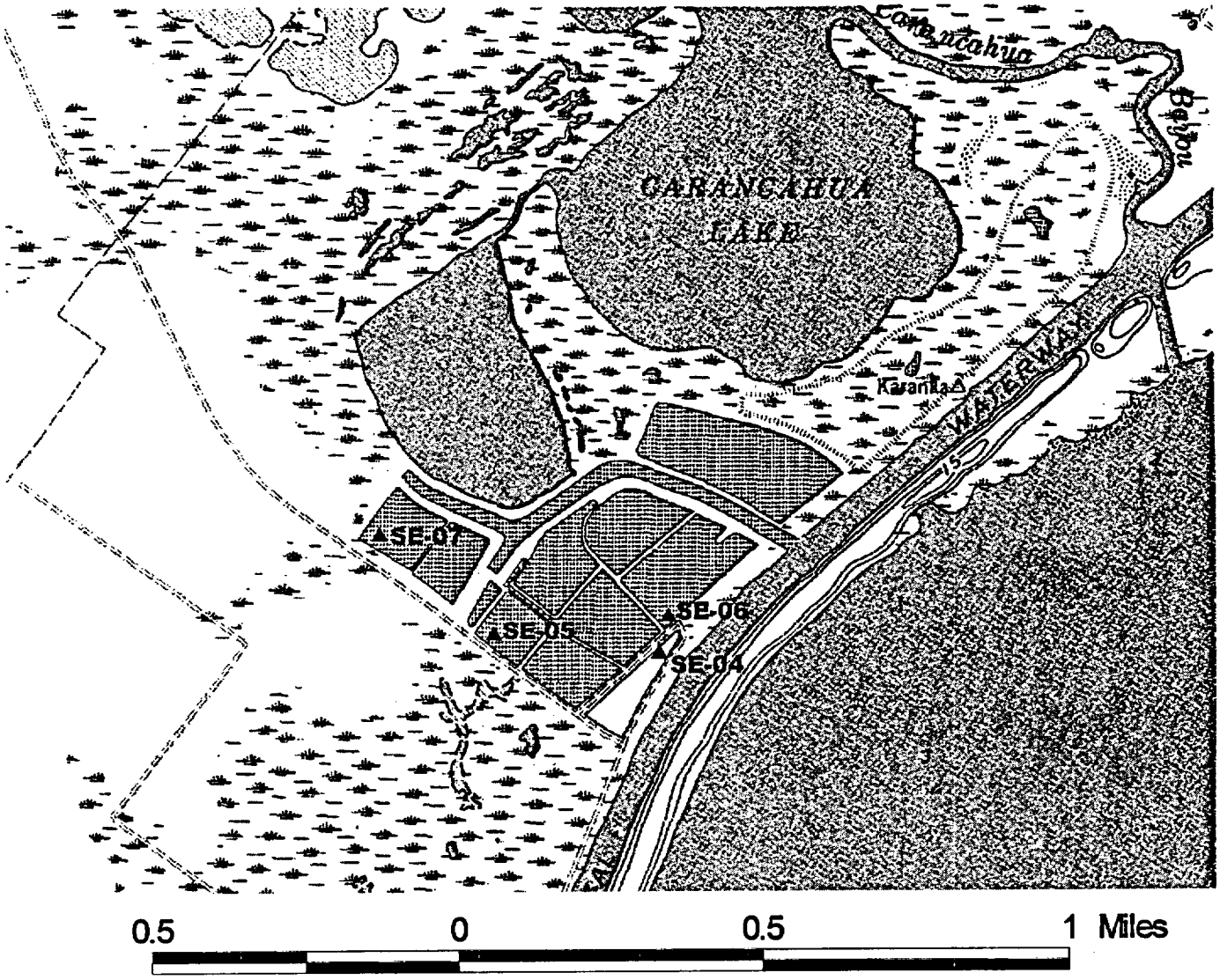
  Release to ground water: Releases to ground water were detected. However, since an observed release to surface water was documented, a release to ground water is not needed to score the pathway. Therefore, the ground water pathway will not be evaluated.

  Release via overland migration and/or flood: Source consists of contaminated surface impoundment contents (sediments). There is analytical evidence to document the release of hazardous substances from the source via overland migration.

2.2.2 Hazardous Substances Associated with a Source

Table 1 represents hazardous substances identified in the sediment sample (SE-04)(MFHL49) collected from inside Impoundment #4A during the TNRCC Site Screening Investigation (SSI), conducted during the week of December 8, 1997. No volatile organic constituents or BNA/Pesticide constituents were detected within this source (Reference 9, pp. 00001-00009, pp. 00011, 00015-00016, 00021, pp. 00046-00047, 00082-00084, 00114). The source sample locations are depicted on Figure 2.

Figure 2 - Source Sample Locations



Base Map - Sea Isle 7.5 Minute Quadrangle

▲ Source Sample

The base data used in this map is a Digital Raster Graphic (DRG), which is a digital version of a US Geological Survey 7.5 Minute Quadrangle. The DRG was produced by the TNRCC using USGS standards.

N
W E
S

The source samples were collected with a stainless steel sediment coring device with dedicated stainless steel, decontaminated screw-on tips to hold dedicated, polyethylene zero-contamination tubes within the device. The sample exhibited elevated concentrations of both organic and inorganic constituents, most notably dioxins and furans.

Table 1: Source Characterization for Source 1 - Impoundment #4A

Hazardous Substance	Evidence
	Sample # SE-04
PCDD/PCDF Concentration in ng/Kg [MDL]	
Total TCDF	150 [1.0]
Total PeCDD	ND [4.8]
Total PeCDF	ND [4.8]
Total TCDD	57 [1.0]
Total HxCDD	8.2 [4.8]
Total HpCDF	ND [4.8]
Total HpCDD	21 [4.8]
Total OCDF	ND [9.7]
Total OCDD	78 [9.7]
Reference	10, p. 00016

Table 1 (cont): Source Characterization for Source 1 - Impoundment #4A	
Inorganic Hazardous Substances	**Evidence**
	Sample # SE-04 MFHL49
Inorganics Concentration in mg/Kg (SQL)	
Antimony	ND (1.3)
Arsenic	2.1 (1.1)
Barium	83.3 (0.16)
Beryllium	0.55 (0.03)
Cadmium	0.22 (0.08)
Chromium	11.9 Jv (0.19)
Cobalt	4.7 (0.3)
Copper	7.8 (0.3)
Lead	9.3 Jv (0.49)
Manganese	202 Jv (0.11)
Mercury	ND (0.06)
Nickel	8.6 J^ (0.35)
Selenium	ND (0.7)
Silver	0.41 (0.2)
Sodium	1210 (25)
Thallium	ND (0.77)
Vanadium	18.4 (0.38)
Zinc	28.7 Jv (0.22)
Cyanide	ND (0.03)
Reference	6, pp. 00001-00008, 00012, 00034

Note: SQL = The sample quantitation limit.
J = The value is an estimated concentration because one or more of the quality control criteria have not been met. It is included to show that the substance has been qualitatively identified as present in this source.

All samples were collected according to the EPA approved state Quality Assurance Project Plan and sample locations were approved by the EPA prior to sample collection (Reference 11).

2.2.3 Hazardous Substances Available to a Pathway

Because containment for this source is greater than 0, the following substances associated with the source can migrate via the surface water migration pathway:

- TCDF
- TCDD
- HxCDD
- HpCDD
- OCDD
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Manganese
- Nickel
- Silver
- Sodium
- Vanadium
- Zinc

2.3 LIKELIHOOD OF RELEASE

Refer to Section 4.1.2.1 of this Documentation Record for specific information related to the Likelihood of Release to the Surface Water Pathway.

2.4 WASTE CHARACTERIZATION

2.4.1 Selection of Substance Potentially Posing Greatest Hazard

All of the hazardous substances listed above are associated with this source.

Specific toxicity factors, HRS Section 2.4.1.1 and selection of the hazardous substances with the highest factor values (toxicity, persistence, and bioaccumulation), HRS Section 2.4.1.2, are presented under the Surface Water Migration Pathway section of this documentation record.

2.4.2. Hazardous Waste Quantity

2.4.2.1.1. Hazardous Constituent Quantity (Tier A)

The information available is not sufficient to evaluate Tier A; therefore, it is not possible to adequately determine a hazardous constituent quantity for Source 1, the contaminated soils associated with Impoundment #4A. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier B, hazardous waste stream quantity (Reference 1, Section 2.4.2.1.2, p. 51591).

2.4.2.1.2. Hazardous Waste stream Quantity (Tier B)

The information available is not sufficient to evaluate Tier B, therefore, it is not possible to adequately determine a hazardous waste stream quantity for Source 1, the contaminated soils associated with Impoundment #4A. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier C, volume (Reference 1, Section 2.4.2.1.3, p. 51591).

2.4.2.1.3 Volume (Tier C)

The information available is not sufficient to evaluate Tier C, therefore, it is not possible to adequately determine a volume for Source 1, the contaminated soils associated with Impoundment #4A. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier D, area (Reference 1, Section 2.4.2.1.4, p. 51591).

2.4.2.1.4. Area (Tier D)

Due to the fact that one sample was collected from Impoundment #4A, the full extent of the area of contamination is unknown, but the surface area of Impoundment #4A is known to be 333,250.0 square feet (Reference 13, p. 227).

Area of source (ft^2): 333,250.0
Reference: 13, p. 227
Area Assigned Value: 25,634.6

2.4.2.1.5. Source Hazardous Waste Quantity Value

As described in the HRS Final Rule, the highest value assigned to a source from among the four tiers of hazardous constituent quantity (Tier A), hazardous waste stream quantity (Tier B), volume (Tier C) or area (Tier D) shall be selected as the source hazardous waste quantity value. (Reference 1, Sections 2.4.2.1.1 - 2.4.2.1.4, pp. 51590 - 51591).

Tier Evaluated	Source 1 Values
A	NE
B	NE
C	NE
D	25,634.6

NE = not evaluated

2.2 SOURCE CHARACTERIZATION

2.2.1 Source Identification

- Number of the source: 2

- Name and description of the source: Impoundment #4

  One (1) sediment sample, (SE-06)(MFHL51), was collected inside Impoundment #4. Source sediment sample locations are depicted on Figure 2 (Appendix A, Photographs 20, 21, 22, 23, 24 of Roll # 1).

  Impoundment #4 received waste water for treatment prior to its discharge from the NPDES permitted outfall. The location of Impoundment #4 is shown on Figure 2.

- Location of the source, with reference to a map of the site:

  See Figure 2 for the location of Impoundment #4.

- Containment

  Gas release to air: The air migration pathway was not evaluated; therefore, gas containment was not evaluated.

  Particulate release to air: The air migration pathway was not evaluated; therefore, particulate containment was not evaluated.

  Release to ground water: Releases to ground water were detected. However, since an observed release to surface water was documented, a release to ground water is not needed to score the pathway. Therefore, the ground water pathway will not be evaluated.

  Release via overland migration and/or flood: Source consists of contaminated surface impoundment contents (sediments). A RCRA inspection conducted by the EPA in January, 1993 documented the presence of chlorobenzene (2.3 μg/L) and barium (0.472 mg/L) in Impoundment #4 (Reference 17, pp. 75-76). There is evidence to document the release of hazardous substances from the source via overland migration or flooding.

2.2.2 Hazardous Substances Associated with a Source

Those substances identified in Table 2 were present in the sediment sample (SE-06)(MFHL51) collected from inside Impoundment #4 during the TNRCC Site Screening Investigation (SSI), conducted during the week of December 8, 1997. No volatile organic constituents or BNA/Pesticide constituents were detected within this source (Reference 9, pp. 00001-00009, pp. 00012, 00017-00018, 00022, pp. 00050-00051, 00088-00090, 00116). The source sample locations are depicted on Figure 2.

The source samples were collected at with a stainless steel sediment coring device with dedicated, decontaminated screw-on tips to hold dedicated, polyethylene zero-contamination tubes within the device. The sample exhibited elevated concentrations of inorganic constituents.

Table 2: Source Characterization for Source 2 - Impoundment #4	
Inorganic Hazardous Substances	**Evidence**
	Sample # SE-06 MFHL51
Inorganics Concentration in mg/Kg (SQL)	
Antimony	ND (1.2)
Arsenic	3.2 (1.0)
Barium	181 (0.15)
Beryllium	0.75 (0.02)
Cadmium	0.41 (0.08)
Chromium	14 Jv (0.18)
Cobalt	5.3 (0.28)
Copper	7.7 (0.28)
Lead	10.5 Jv (0.46)
Manganese	201 Jv (0.1)
Mercury	ND (0.06)
Nickel	9.5 J^ (0.33)
Selenium	ND (0.56)
Silver	0.54 (0.2)
Sodium	1160 (24)
Thallium	ND (0.71)
Vanadium	30.1 (0.36)
Zinc	25.1 Jv (0.2)
Cyanide	ND (0.02)
Reference	6, pp. 00001-00008, 00013, 00036

Note: SQL = The sample quantitation limit.
J = The value is an estimated concentration because one or more of the quality control criteria have not been met. It is included to show that the substance has been qualitatively identified as present in this source.

All samples were collected according to the EPA approved state Quality Assurance Project Plan and sample locations were approved by the EPA prior to sample collection (Reference 11).

2.2.3 Hazardous Substances Available to a Pathway

Because containment for this source is greater than 0, the following substances associated with the source can migrate via the surface water migration pathway:

- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Manganese
- Nickel
- Silver
- Sodium
- Vanadium
- Zinc

2.3 LIKELIHOOD OF RELEASE

Refer to Section 4.1.2.1 of this Documentation Record for specific information related to the Likelihood of Release to the Surface Water Pathway.

2.4 WASTE CHARACTERIZATION

2.4.1 Selection of Substance Potentially Posing Greatest Hazard

All of the hazardous substances listed above are associated with this source.

Specific toxicity factors, HRS Section 2.4.1.1 and selection of the hazardous substances with the highest factor values (toxicity, persistence, and bioaccumulation), HRS Section 2.4.1.2, are presented under the Surface Water Migration Pathway section of this documentation record.

2.4.2. Hazardous Waste Quantity

2.4.2.1.1. Hazardous Constituent Quantity (Tier A)

The information available is not sufficient to evaluate Tier A; therefore, it is not possible to adequately determine a hazardous constituent quantity for Source 2, the contaminated soils associated with Impoundment #4. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier B, hazardous waste stream quantity (Reference 1, Section 2.4.2.1.2, p. 51591).

2.4.2.1.2. Hazardous Waste stream Quantity (Tier B)

The information available is not sufficient to evaluate Tier B, therefore, it is not possible to adequately determine a hazardous waste stream quantity for Source 2, the contaminated soils associated with Impoundment #4. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier C, volume (Reference 1, Section 2.4.2.1.3, p. 51591).

2.4.2.1.3 Volume (Tier C)

The information available is not sufficient to evaluate Tier C, therefore, it is not possible to adequately determine a volume for Source 2, the contaminated soils associated with Impoundment #4. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier D, area (Reference 1, Section 2.4.2.1.4, p. 51591).

2.4.2.1.4. Area (Tier D)

Due to the fact that one sample was collected from Impoundment #4, the full extent of the area of contamination is unknown, but the surface area of Impoundment #4A is known to be 666,000.0 square feet (Reference 3, p. 227).

Area of source (ft^2): 666,000.0
Reference: 13, p. 227
Area Assigned Value: 51,230.7

2.4.2.1.5. Source Hazardous Waste Quantity Value

As described in the HRS Final Rule, the highest value assigned to a source from among the four tiers of hazardous constituent quantity (Tier A), hazardous waste stream quantity (Tier B), volume (Tier C) or area (Tier D) shall be selected as the source hazardous waste quantity value. (Reference 1, Sections 2.4.2.1.1 - 2.4.2.1.4, pp. 51590 - 51591).

Tier Evaluated	Source 2 Values
A	NE
B	NE
C	NE
D	51,230.7

NE = not evaluated

2.2 SOURCE CHARACTERIZATION

2.2.1 Source Identification

- Number of the source: 3

- Name and description of the source: Impoundment #8

  One (1) sediment sample, (SE-05)(MFHL50), was collected inside Impoundment #8. Source sediment sample locations are depicted on Figure 2 (Appendix A, Photographs 20, 21, 22, 23, 24 of Roll # 1).

  Impoundment #8 received waste water for treatment prior to its discharge from the NPDES permitted outfall. The location of Impoundment #8 is shown on Figure 2.

- Location of the source, with reference to a map of the site:

  See Figure 2 for the location of Impoundment #8.

- Containment

  Gas release to air: The air migration pathway was not evaluated; therefore, gas containment was not evaluated.

  Particulate release to air: The air migration pathway was not evaluated; therefore, particulate containment was not evaluated.

  Release to ground water: Releases to ground water were detected. However, since an observed release to surface water was documented, a release to ground water is not needed to score the pathway. Therefore, the ground water pathway will not be evaluated.

  Release via overland migration and/or flood: Source consists of contaminated surface impoundment contents (sediments). There is evidence to document the release of hazardous substances from the source via overland migration or flooding.

2.2.2 Hazardous Substances Associated with a Source

Those substances identified in Table 3 were present in the sediment sample (SE-05)(MFHL50) collected from inside Impoundment #8 during the TNRCC Site Screening Investigation (SSI), conducted during the week of December 8, 1997. No volatile organic constituents or BNA/Pesticide constituents were detected within this source (Reference 9, pp. 00001-00009, pp. 00012, 00017-00018, 00022, pp. 00048-00049, 00085-00087, 00115). The source sample locations are depicted on Figure 2.

The source samples were collected at with a stainless steel sediment coring device with dedicated, decontaminated screw-on tips to hold dedicated, polyethylene zero-contamination tubes within the device. The sample exhibited elevated concentrations of inorganic constituents.

Table 3: Source Characterization for Source 3 - Impoundment #8

Inorganic Hazardous Substances	Evidence
	Sample # SE-05 MFHL50
Inorganics Concentration in mg/Kg (SQL)	
Antimony	ND (1.6)
Arsenic	2.5 (1.4)
Barium	197 (0.2)
Beryllium	0.39 (0.03)
Cadmium	0.98 (0.1)
Chromium	69.4 Jv (0.25)
Cobalt	3.9 (0.4)
Copper	41.1 (0.4)
Lead	51.5 Jv (0.64)
Manganese	541 Jv (0.14)
Mercury	ND (0.08)
Nickel	14 J^ (0.46)
Selenium	ND (0.78)
Silver	0.3 (0.28)
Sodium	1590 (33)
Thallium	ND (0.99)
Vanadium	11.6 (0.05)
Zinc	150 Jv (0.28)

Table 3 (cont.): Source Characterization for Source 3 - Impoundment #8	
Inorganic Hazardous Substances	Evidence
	Sample # SE-05 MFHL50
Inorganics Concentration in mg/Kg (SQL)	
Cyanide	ND (0.28)
Reference	6, pp. 00001-00008, 00012, 00035

Note: SQL = Sample Quantitation Limit.
J = The value is an estimated concentration because one or more of the quality control criteria have not been met. It is included to show that the substance has been qualitatively identified as present in this source.

All samples were collected according to the EPA approved state Quality Assurance Project Plan and sample locations were approved by the EPA prior to sample collection (Reference 11).

2.2.3 Hazardous Substances Available to a Pathway

Because containment for this source is greater than 0, the following substances associated with the source can migrate via the surface water migration pathway:

- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Manganese
- Nickel
- Silver
- Sodium
- Vanadium
- Zinc

2.4 WASTE CHARACTERIZATION

2.4.1 Selection of Substance Potentially Posing Greatest Hazard

All of the hazardous substances listed above are associated with this source.

Specific toxicity factors, HRS Section 2.4.1.1 and selection of the hazardous substances with the highest factor values (toxicity, persistence, and bioaccumulation), HRS Section 2.4.1.2, are presented under the Surface Water Migration Pathway section of this documentation record.

2.4.2. Hazardous Waste Quantity

2.4.2.1.1. Hazardous Constituent Quantity (Tier A)

The information available is not sufficient to evaluate Tier A; therefore, it is not possible to adequately determine a hazardous constituent quantity for Source 3, the contaminated soils associated with Impoundment #8. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier B, hazardous waste stream quantity (Reference 1, Section 2.4.2.1.2, p. 51591).

2.4.2.1.2. Hazardous Waste stream Quantity (Tier B)

The information available is not sufficient to evaluate Tier B, therefore, it is not possible to adequately determine a hazardous waste stream quantity for Source 3, the contaminated soils associated with Impoundment #8. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier C, volume (Reference 1, Section 2.4.2.1.3, p. 51591).

2.4.2.1.3 Volume (Tier C)

The information available is not sufficient to evaluate Tier C, therefore, it is not possible to adequately determine a volume for Source 3, the contaminated soils associated with Impoundment #8. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier D, area (Reference 1, Section 2.4.2.1.4, p. 51591).

2.4.2.1.4. Area (Tier D)

Due to the fact that one sample was collected from Impoundment #8, the full extent of the area of contamination is unknown, but the surface area of Impoundment #8 is known to be 250,000.0 square feet (Reference 13, p. 227).

Area of source (ft^2): 250,000.0
Reference: 13, p. 227
Area Assigned Value: 19,230.7

2.4.2.1.5. Source Hazardous Waste Quantity Value

As described in the HRS Final Rule, the highest value assigned to a source from among the four tiers of hazardous constituent quantity (Tier A), hazardous waste stream quantity (Tier B), volume (Tier C) or area (Tier D) shall be selected as the source hazardous waste quantity value. (Reference 1, Sections 2.4.2.1.1 - 2.4.2.1.4, pp. 51590 - 51591).

Tier Evaluated	Source 3 Values
A	NE
B	NE
C	NE
D	19,230.7

NE = not evaluated

2.2 SOURCE CHARACTERIZATION

2.2.1 Source Identification

- Number of the source: 4

- Name and description of the source: Impoundment #10

  One (1) sediment sample, (SE-07)(MFHL46), was collected inside Impoundment #10. Source sediment sample locations are depicted on Figure 2 (Attachment A, Photographs 20, 21, 22, 23, 24 of Roll # 1).

  Impoundment #10 received waste water for treatment prior to its discharge from the NPDES permitted outfall. The location of Impoundment #10 is shown on Figure 2.

- Location of the source, with reference to a map of the site:

  See Figure 2 for the location of Impoundment #10.

- Containment

  Gas release to air: The air migration pathway was not evaluated; therefore, gas containment was not evaluated.

  Particulate release to air: The air migration pathway was not evaluated; therefore, particulate containment was not evaluated.

  Release to ground water: Releases to ground water were detected. However, since an observed release to surface water was documented, a release to ground water is not needed to score the pathway. Therefore, the ground water pathway will not be evaluated.

  Release via overland migration and/or flood: Source consists of contaminated surface impoundment contents (sediments). There is evidence to document the release of hazardous substances from the source via overland migration or flooding.

2.2.2 Hazardous Substances Associated with a Source

Those substances identified in Table 4 were present in the sediment sample (SE-07)(MFHL46) collected from inside Impoundment #10 during the TNRCC Site Screening Investigation (SSI), conducted during the week of December 8, 1997. No volatile organic constituents or BNA/Pesticide constituents were detected within this source (Reference 9, pp. 00001-00009, pp. 00011, 00015-00016, 00021, pp. 00042-00043, 00076-00078, 00112). The source sample locations are depicted on Figure 2.

The source samples were collected at with a stainless steel sediment coring device with dedicated, decontaminated screw-on tips to hold dedicated, polyethylene zero-contamination tubes within the device. The sample exhibited elevated concentrations of inorganic constituents.

Table 4: Source Characterization for Source 4 - Impoundment #10

Inorganic Hazardous Substances	Evidence
	Sample # SE-07 MFHL46
Inorganics Concentration in mg/Kg (SQL)	
Antimony	ND (2)
Arsenic	2.9 (1.7)
Barium	166 (0.25)
Beryllium	0.35 (0.04)
Cadmium	0.91 (0.13)
Chromium	109 Jv (0.29)
Cobalt	4.2 (0.46)
Copper	44.1 (0.46)
Lead	42.6 Jv (0.76)
Manganese	426 Jv (0.17)
Mercury	ND (0.1)
Nickel	24.3 J^ (0.55)
Selenium	ND (1.1)
Silver	0.33 (0.34)
Sodium	2620 (39)
Thallium	ND (1.2)
Vanadium	15 (0.6)
Zinc	146 Jv (0.34)

Table 4 (cont.): Source Characterization for Source 4 - Impoundment #10	
Inorganic Hazardous Substances	Evidence
	Sample # SE-07 MFHL46
Inorganics Concentration in mg/Kg (SQL)	
Cyanide	NOT ANALYZED DUE TO INSUFFICEINT SAMPLE VOLUME
Reference	6, pp. 00001-00008, 00012, 00031

Note: SQL = The sample quantitation limit.
J = The value is an estimated concentration because one or more of the quality control criteria have not been met. It is included to show that the substance has been qualitatively identified as present in this source.

All samples were collected according to the EPA approved state Quality Assurance Project Plan and sample locations were approved by the EPA prior to sample collection (Reference 11).

2.2.3 Hazardous Substances Available to a Pathway

Because containment for this source is greater than 0, the following substances associated with the source can migrate via the surface water migration pathway:

- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Manganese
- Nickel
- Silver
- Sodium
- Vanadium
- Zinc

2.4 WASTE CHARACTERIZATION

2.4.1 Selection of Substance Potentially Posing Greatest Hazard

All of the hazardous substances listed above are associated with this source.

Specific toxicity factors, HRS Section 2.4.1.1 and selection of the hazardous substances with the highest factor values (toxicity, persistence, and bioaccumulation), HRS Section 2.4.1.2, are presented under the Surface Water Migration Pathway section of this documentation record.

2.4.2. Hazardous Waste Quantity

2.4.2.1.1. Hazardous Constituent Quantity (Tier A)

The information available is not sufficient to evaluate Tier A; therefore, it is not possible to adequately determine a hazardous constituent quantity for Source 4, the contaminated soils associated with Impoundment #10. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier B, hazardous waste stream quantity (Reference 1, Section 2.4.2.1.2, p. 51591).

2.4.2.1.2. Hazardous Waste stream Quantity (Tier B)

The information available is not sufficient to evaluate Tier B, therefore, it is not possible to adequately determine a hazardous waste stream quantity for Source 4, the contaminated soils associated with Impoundment #10. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier C, volume (Reference 1, Section 2.4.2.1.3, p. 51591).

2.4.2.1.3 Volume (Tier C)

The information available is not sufficient to evaluate Tier C, therefore, it is not possible to adequately determine a volume for Source 4, the contaminated soils associated with Impoundment #10. As a result, the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier D, area (Reference 1, Section 2.4.2.1.4, p. 51591).

2.4.2.1.4. Area (Tier D)

Due to the fact that one sample was collected from Impoundment #10, the full extent of the area of contamination is unknown, but the surface area of Impoundment #8 is known to be 443,566.0 square feet (Reference 13, p. 227).

Area of source (ft^2): 443,566.0
Reference: 13, p. 227
Area Assigned Value: 34,120.4

2.4.2.1.5. Source Hazardous Waste Quantity Value

As described in the HRS Final Rule, the highest value assigned to a source from among the four tiers of hazardous constituent quantity (Tier A), hazardous waste stream quantity (Tier B), volume (Tier C) or area (Tier D) shall be selected as the source hazardous waste quantity value. (Reference 1, Sections 2.4.2.1.1 - 2.4.2.1.4, pp. 51590 - 51591).

Tier Evaluated	Source 4 Values
A	NE
B	NE
C	NE
D	34,120.4

NE = not evaluated

SOURCES NOT EVALUATED

The MIMC site consists of 32 surface impoundments for the treatment/disposal of industrial waste sludge from the Gulf Coast Waste Disposal Authority (GCWDA) Washburn Tunnel facility (WBT) in Houston, Texas. MIMC began construction of the impoundments and receipt of sludge on property leased from HBR in 1966. The only waste accepted by MIMC was industrial waste sludge from GCWDA's WBT. GCWDA WBT accepted wastes for treatment from the following Houston area facilities: Simpson Pasadena Paper Company, Lyondell Petrochemical Company, Air Products Manufacturing Corporation, AES Deepwater, Inc., Crown Central Petroleum Corporation, GATX Terminals Corporation - Galena Park Plant, GATX Terminals Corporation - Pasadena Plant, Mobay Synthetics Corporation, Goodyear Tire & Rubber Company, City of Pasadena and the GCWDA Vince Bayou facility (Reference 11).

The following impoundments were not sampled during the SSI, conducted during the week of December 8, 1997, and therefore not evaluated as sources: 1, 2, 3, 5, 6, 7, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 and 31. The locations and numbers of all impoundments on the MIMC site is shown on Figure 3.

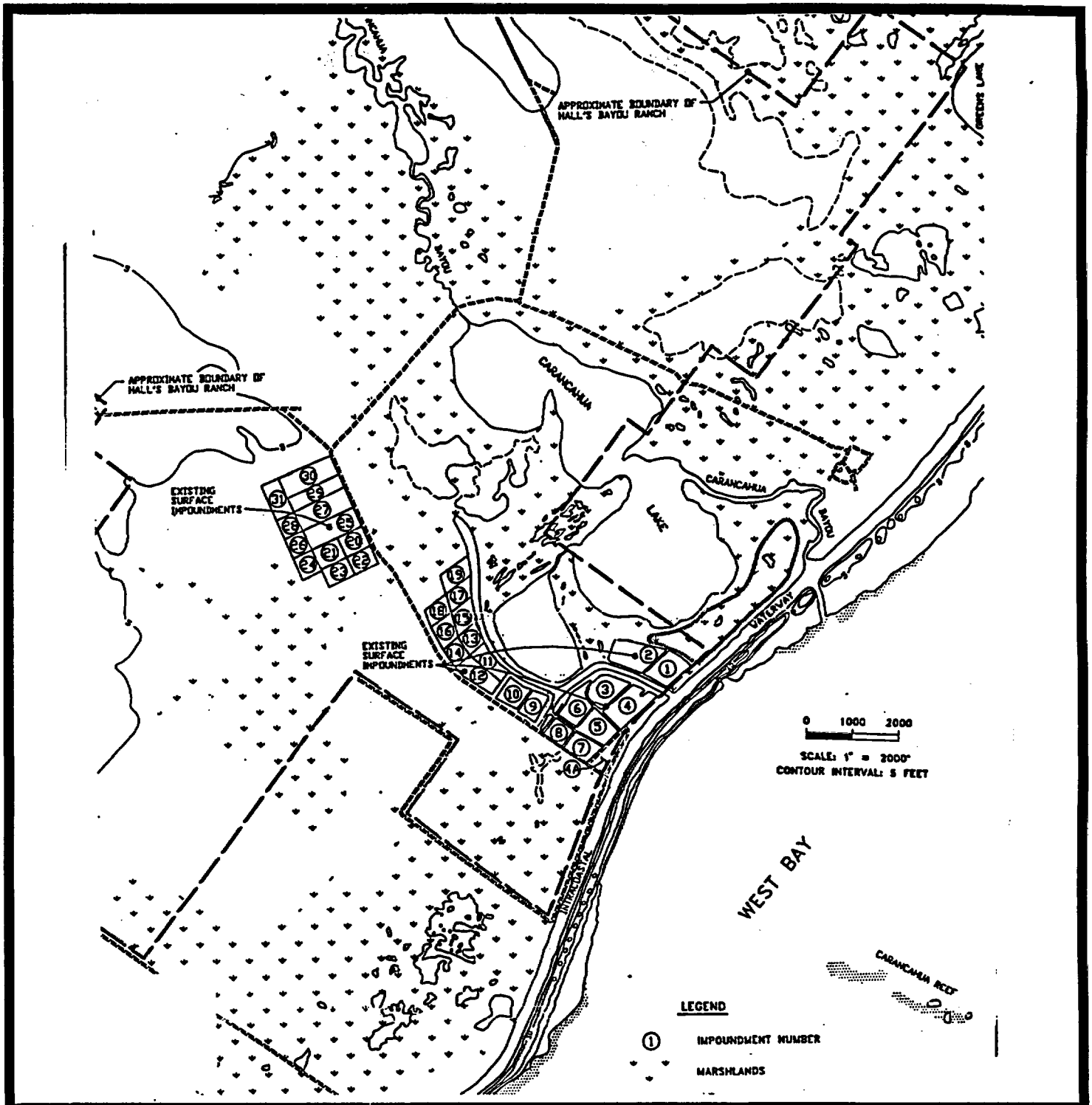


FIGURE 3: Impoundment Layout and Numbers

McGinnes Industrial Maintenance Corporation
TXD980697031

Hitchcock, Galveston County, Texas

4.0 SURFACE WATER MIGRATION PATHWAY

4.1 OVERLAND FLOOD MIGRATION COMPONENT

4.1.1.1 DEFINITION OF HAZARDOUS SUBSTANCE MIGRATION PATH FOR OVERLAND/FLOOD COMPONENT

General Considerations

The MIMC site is located within Segment 2424 (West Bay) of the Bays and Estuaries (Reference 12, page 361) and is bordered on the southeast by the Gulf Intracoastal Waterway (ICW) and on all other sides by Hall's Bayou Ranch (HBR). See Figure 1 for the location of the site.

State of Texas Water Quality Segments

All runoff, as well as MIMC's NPDES permitted outfall, discharges into surface water of one (1) Texas Water Quality Segment. The Texas Surface Water Quality Standards (Title 30, Chapter 307 of the Texas Administrative Code) establish explicit water quality goals throughout the State. Regional hydrologic and geologic diversity is given consideration by dividing major river basins, bays and estuaries into defined segments (referred to as classified and designated segments). Segment-specific standards identify appropriate uses for specific water bodies (aquatic life, contact or noncontact recreation, drinking water, etc.) and list upper and lower limits for common indicators (criteria) of water quality - such as dissolved oxygen, temperature, pH, dissolved minerals, and fecal coliform bacteria. Other standards - such as toxic criteria to protect aquatic life and human health - are applied statewide. The Texas Water Quality Segment in the surface water migration pathway of the MIMC site is described below.

West Bay Segment 2424

West Bay makes up approximately one third of the Galveston Bay estuary system (see Figure 4 for location of West Bay). West Bay occupies 69.3 square miles, is effluent limited and has designated water uses of contact recreation, high aquatic life and oyster waters. There are twenty one (21) TNRCC monitoring stations within Segment No. 2424. Water quality is generally good with occasional depressed dissolved oxygen levels in dead-end canals (Reference 12, page 402). Oyster waters may be selectively closed by the Texas Department of Health for high fecal coliform counts (Reference 12, page 402).

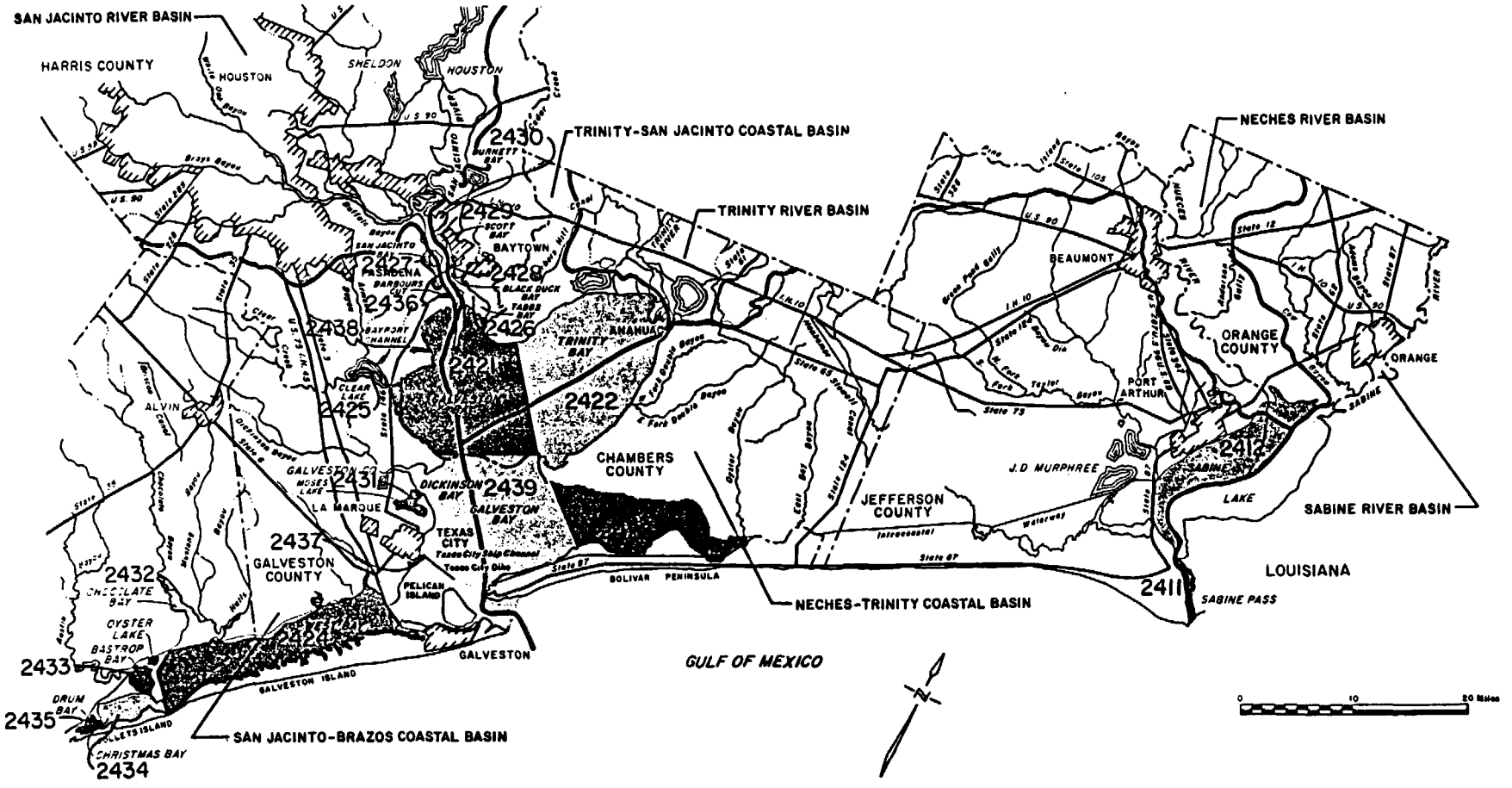


FIGURE 4: Location of West Bay

McGinnes Industrial Maintenance Corporation
TXD980697031

Hitchcock, Galveston County, Texas

Definition of Overland Segment and Probable Point of Entry (PPE)

The MIMC site has multiple waste sources (i.e. Source 1, Source 2, Source 3 and Source 4) and one Probable Point of Entry (PPE) which is their NPDES permitted outfall. This outfall drains directly to the ICW; there is no permanent overland segment due to tidal fluctuation in this area. Two (2) samples were collected at the PPE: SE-11 (FFR22, MFHL44) and SE-12 (FFR23, MFHL45). Sample SE-12 is a field duplicate of SE-11.

Definition of In-Water Segments

The Target Distance Limit (TDL) for the MIMC site is comprised of two (2) Hazard Ranking System (HRS) In-Water Segments, which are included within four (4) State of Texas Water Quality Segments. The components of these HRS In-Water segments are discussed below.

HRS In-Water Segment 1: Level II TDL extends from the PPE to a arc approximately 8 miles in circumference. This arc includes a portion of West Bay (Segment 2424). Sediment samples collected within this HRS In-Water Segment are SE-08 (FFR25, MFHL47), SE-09 (FFR26, MFHL48), SE-10 (FFR21, MFHL43), SE-13 (FFR18, MFHL40), SE-14 (FFR19, MFHL41), SE-15 (FFR20, MFHL42), SE-16 (FFR15, MFHL37), SE-17 (FFR16, MFHL38), SE-18 (FFR17, MFHL39) and SE-19.

HRS In-Water Segment 2: Potential contamination TDL extends approximately 7 miles from the edge of the Level II arc. This arc includes the remainder of West Bay (Segment 2424), Galveston Bay (Segment 2439), Chocolate Bay (Segment 2439) and Bastrop Bay (Segment 2433). Sediment samples collected within this HRS In-Water Segment are SE-22 (FFR63, MFHL91) and SE-23 (FFR64, MFHL92).

See Figures 6, 7 and 8 for the locations of all sediment samples collected. See Figure 9 for Level II and Potential Contamination TDLs.

4.1.2 DRINKING WATER THREAT

The drinking water threat was not evaluated due to lack of targets for this component. The documentation for an observed release to surface water follows, then scoring will proceed to the human food chain threat.

4.1.2.1 LIKELIHOOD OF RELEASE

4.1.2.1.1 Observed Release

An observed release to a qualifying surface water body can be documented in the HRS system by two methods: a) direct observation and b) chemical analysis. We will document the observed release by chemical analysis in this SSI Report.

Chemical Analysis

An observed release has been documented to the surface water pathway for the MIMC site by chemical analysis. Establishing an observed release by chemical analysis requires attributing the hazardous substance(s) to the site, and also requires determining background, demonstrating that the concentration of the hazardous substance(s) in a release sample is significantly increased above background, and attributing some portion of the significant increase to the site. In order to document a significant increase above background, it is necessary to establish the presence of hazardous substance(s) at concentrations three times above a designated background level when the hazardous substance(s) have been detected in the background sample or at concentrations above the release samples' and the background samples' SQLs when a hazardous substance(s) has been reported as not detected in background samples (Reference 1, p. 51589).

Background Concentration

The following table provides a summary of the designated background levels for the organic and inorganic hazardous substances of concern for this site.

Two (2) background sediment samples, SE-01(FFR30, MFHL52) and SE-03 (FFR32, MFHL54) were collected from marshes southeast of Bayou Vista, Texas (see Figure 5). A summary of the highest constituent concentrations detected in the background sediment samples is presented in Table 5.

TABLE 5
SUMMARY OF HIGHEST ORGANIC AND INORGANIC CONSTITUENTS
DETECTED IN BACKGROUND SEDIMENT SAMPLES
COLLECTED FROM THE MARSHES SOUTHEAST OF BAYOU VISTA, TEXAS

Organic Constituent	Station/ CLP No.	Highest Concentration [MDL] ng/Kg	3 x Highest Background Concentration ng/Kg	Reference
Total TCDF	SE-03/FFR32	ND [1.0]	N/A	10, p. 00010
Total TCDD	SE-03/FFR32	5.7 [1.0]	17.1	10, p. 00010
Total HxCDD	SE-03/FFR32	14 [4.9]	42	10, p. 00010
Total HpCDD	SE-03/FFR32	38 [4.9]	114	10, p. 00010
OCDD	SE-03/FFR32	180 [9.8]	540	10, p. 00010

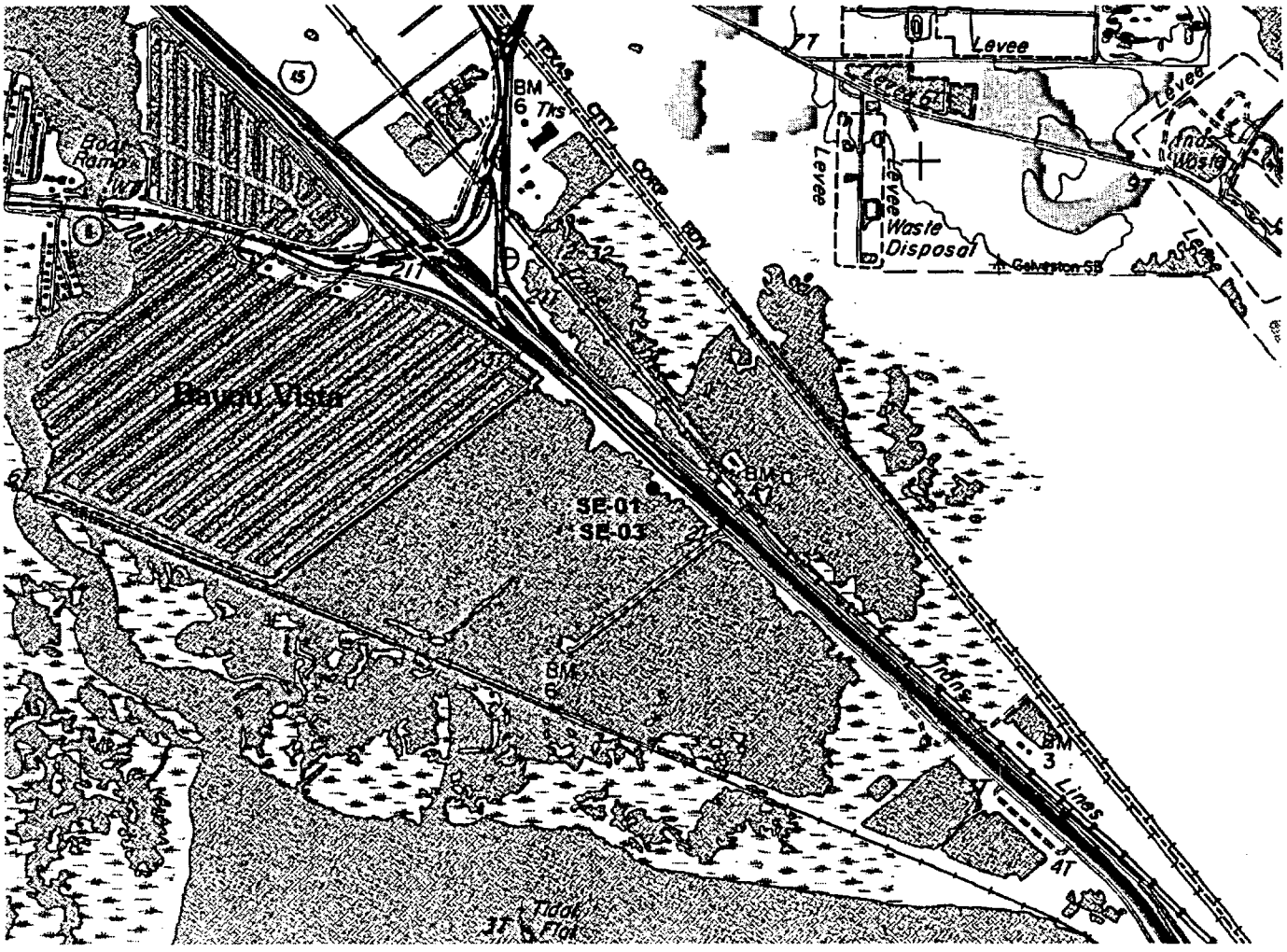
TABLE 5 (cont)
SUMMARY OF HIGHEST ORGANIC AND INORGANIC CONSTITUENTS DETECTED IN BACKGROUND SEDIMENT SAMPLES COLLECTED FROM THE MARSHES SOUTHEAST OF BAYOU VISTA, TEXAS

Inorganic Constituent	Station/ CLP No.	Highest Concentration (SQL) mg/Kg	3 x Highest Background Concentration mg/Kg	Reference
Antimony	SE-03/MFHL54	ND (1.2)	N/A	6, pp. 00001-00008, 00013, 00038
Arsenic	SE-03/MFHL54	3.9 (1.1)	11.7	6, pp. 00001-00008, 00013, 00038
Barium	SE-01/MFHL52	29.7 (0.17)	89.1	6, pp. 00001-00008, 00013, 00037
Beryllium	SE-01/MFHL52	1.0 (0.03)	3	6, pp. 00001-00008, 00013, 00037
Cadmium	SE-03/MFHL54	0.46 (0.08)	1.38	6, pp. 00001-00008, 00013, 00038
Chromium	SE-03/MFHL54	16.4 * (0.18)	49.2	6, pp. 00001-00008, 00013, 00038
Cobalt	SE-03/MFHL52	7.4 (0.3)	22.2	6, pp. 00001-00008, 00013, 00037
Copper	SE-01/MFHL52	9.2 (0.3)	27.6	6, pp. 00001-00008, 00013, 00037
Lead	SE-01/MFHL52	13.9 * (0.5)	41.7	6, pp. 00001-00008, 00013, 00037
Manganese	SE-01/MFHL52	150 * (0.1)	450	6, pp. 00001-00008, 00013, 00037
Mercury	SE-03/MFHL54	ND (0.06)	N/A	6, pp. 00001-00008, 00013, 00038
Nickel	SE-03/MFHL54	12.9 * (0.3)	38.7	6, pp. 00001-00008, 00013, 00038
Selenium	SE-03/MFHL54	ND (0.58)	N/A	6, pp. 00001-00008, 00013, 00038
Silver	SE-03/MFHL54	0.63 (0.2)	1.89	6, pp. 00001-00008, 00013, 00038
Sodium	SE-01/MFHL52	5480 (24.7)	16440	6, pp. 00001-00008, 00013, 00037
Thallium	SE-03/MFHL54	ND (0.73)	N/A	6, pp. 00001-00008, 00013, 00038
Vanadium	SE-03/MFHL54	28.6 (0.4)	85.8	6, pp. 00001-00008, 00013, 00038
Zinc	SE-03/MFHL54	42.7 * (0.2)	128.1	6, pp. 00001-00008, 00013, 00038
Cyanide	SE-03/MFHL54	ND (0.03)	N/A	6, pp. 00001-00008, 00013, 00038

ND = Not detected. Concentrations for these constituents were not detected at the reported quantitation limit in sediment samples considered for the development of sediment background levels.
( ) = SQL values for each constituent.
N/A = Not Applicable
* = See Data Usability Table (Table 8)

A complete listing of all background values is included as Appendix R.

Figure 5 - Background Sample Locations



Base Map - Virginia Point, TX 7.5 Minute Quadrangle

● Background Sample

N
W E
S

The base data used in this map is a Digital Raster Graphic (DRG), which is a digital version of a US Geological Survey 7.5 Minute Quadrangle. This DRG was produced by the TNRCC using USGS standards.

All samples were collected according to the EPA approved state Quality Assurance Project Plan and sample locations were approved by the EPA prior to sample collection (Reference 11).

Contaminated Samples

The following samples meet the observed release criteria and are presented below indicating organic and inorganic hazardous substances with their concentrations and SQLs.

The following samples were qualified as "releases" based on the criteria in Table 2-3 (Reference 1, p. 51589). The constituents found in the following samples are attributable to the sources that exist on site and were found in sediment samples collected during the December 8, 1997 SSI conducted by the TNRCC.

TABLE 6
CONTAMINATED SEDIMENT SAMPLES

CLP Sample ID	Sample Location	Sample Depth	Date Collected	Location Reference
FFR25 MFHL47	SE-08 End terminus of MIMC onsite barge canal	grab sample / 0" - 36"	12/11/97	Figure 6 See Appendix A, Roll 2, photo 1
MFHL48	SE-09 MIMC onsite barge canal between impoundments 6 and 9	grab sample / 0" - 36"	12/10/97	Figure 6 See Appendix A, Roll 1, photo 11
MFHL43	SE-10 Duplicate of sample SE-09	grab sample / 0" - 36"	12/10/97	Figure 6 See Appendix A, Roll 1, photo 11
FFR22 MFHL44	SE-11 MIMC NPDES outfall	grab sample / 0" - 36"	12/11/97	Figure 6 See Appendix A, Roll 1, photo 24
FFR23 MFHL45	SE-12 Duplicate of sample SE-11	grab sample / 0" - 36"	12/11/97	Figure 6 See Appendix A, Roll 1, photo 24
FFR18	SE-13 Carancahua Lake	grab sample / 0" - 36"	12/11/97	Figure 6 See Appendix A, Roll 2, photo 2
FFR19	SE-14 Carancahua Lake	grab sample / 0" - 36"	12/11/97	Figure 6 See Appendix A, Roll 2, photo 3
MFHL37	SE-16 ICW off southwest edge of MIMC site	grab sample / 0" - 36"	12/10/97	Figure 6 See Appendix A, Roll 1, photo 10
MFHL39	SE-18 Jones Bay	grab sample / 0" - 36"	12/10/97	Figure 6 See Appendix A, Roll 1, photo 4

Table 7 CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-08/ (No CLP ID)	Total TCDF	8.2 ng/Kg	[1]	10, p. 00015
	Total TCDD	4.4 ng/Kg	[1]	10, p. 00015
	Total HxCDD	25 ng/Kg	[4.7]	10, p. 00015
	Total HpCDD	ND	[4.7]	10, p. 00015
	Total OCDD	180 ng/Kg	[9.5]	10, p. 00015
SE-08/ MFHL47	Arsenic	3.7 mg/Kg	(1.2)	6, pp. 00001-00008, 00012, 00032
	Barium	124 mg/Kg	(0.18)	6, pp. 00001-00008, 00012, 00032
	Beryllium	0.75 mg/Kg	(0.02)	6, pp. 00001-00008, 00012, 00032
	Cadmium	0.62 mg/Kg	(0.08)	6, pp. 00001-00008, 00012, 00032
	Chromium	20.7 mg/Kg Jv	(0.2)	6, pp. 00001-00008, 00012, 00032
	Cobalt	7.8 mg/Kg	(0.32)	6, pp. 00001-00008, 00012, 00032
	Copper	13.6 mg/Kg	(0.32)	6, pp. 00001-00008, 00012, 00032
	Lead	13.0 mg/Kg	(0.53)	6, pp. 00001-00008, 00012, 00032
	Manganese	445 mg/Kg Jv	(0.11)	6, pp. 00001-00008, 00012, 00032
	Nickel	13.9 mg/Kg J^	(0.38)	6, pp. 00001-00008, 00012, 00032
	Silver	0.96 mg/Kg	(0.23)	6, pp. 00001-00008, 00012, 00032
	Sodium	4820 mg/Kg	(27.6)	6, pp. 00001-00008, 00012, 00032
	Vanadium	29 mg/Kg	(0.41)	6, pp. 00001-00008, 00012, 00032
	Zinc	72.6 mg/Kg Jv	(0.23)	6, pp. 00001-00008, 00012, 00032

Table 7 (cont)
CONTAMINATED SEDIMENT SAMPLES

Sample Location/CLP ID	Hazardous Substance	Concentration	(SQL) or [MDL]	Reference
SE-09/ MFHL48	Arsenic	2.1 mg/Kg	(1.25)	6, pp. 00001-00008, 00012, 00033
	Barium	89.4 mg/Kg	(0.18)	6, pp. 00001-00008, 00012, 00033
	Beryllium	0.7 mg/Kg	(0.03)	6, pp. 00001-00008, 00012, 00033
	Cadmium	0.4 mg/Kg	(0.09)	6, pp. 00001-00008, 00012, 00033
	Chromium	12.1 mg/Kg Jv	(0.21)	6, pp. 00001-00008, 00012, 00033
	Cobalt	5.6 mg/Kg	(0.33)	6, pp. 00001-00008, 00012, 00033
	Copper	12.6 mg/Kg	(0.33)	6, pp. 00001-00008, 00012, 00033
	Lead	11.0 mg/Kg	(0.54)	6, pp. 00001-00008, 00012, 00033
	Manganese	241 mg/Kg Jv	(0.12)	6, pp. 00001-00008, 00012, 00033
	Nickel	10.3 mg/Kg J^	(0.39)	6, pp. 00001-00008, 00012, 00033
	Silver	0.61 mg/Kg	(0.24)	6, pp. 00001-00008, 00012, 00033
	Sodium	5050 mg/Kg	(28.3)	6, pp. 00001-00008, 00012, 00033
	Vanadium	21.8 mg/Kg	(0.42)	6, pp. 00001-00008, 00012, 00033
	Zinc	34.1 mg/Kg Jv	(0.24)	6, pp. 00001-00008, 00012, 00033

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-10/ MFHL43	Arsenic	4.6 mg/Kg J	(1.25)	6, pp. 00001-00008, 00011, 00028
	Barium	105 mg/Kg	(0.18)	6, pp. 00001-00008, 00011, 00028
	Beryllium	0.79 mg/Kg	(0.03)	6, pp. 00001-00008, 00011, 00028
	Cadmium	0.5 mg/Kg	(0.09)	6, pp. 00001-00008, 00011, 00028
	Chromium	14.6 mg/Kg Jv	(0.21)	6, pp. 00001-00008, 00011, 00028
	Cobalt	5.7 mg/Kg	(0.33)	6, pp. 00001-00008, 00011, 00028
	Copper	11.4 mg/Kg	(0.33)	6, pp. 00001-00008, 00011, 00028
	Lead	11.4 mg/Kg	(0.55)	6, pp. 00001-00008, 00011, 00028
	Manganese	242 mg/Kg Jv	(0.12)	6, pp. 00001-00008, 00011, 00028
	Nickel	10.4 mg/Kg J^	(0.39)	6, pp. 00001-00008, 00011, 00028
	Silver	0.71 mg/Kg	(0.24)	6, pp. 00001-00008, 00011, 00028
	Sodium	4950 mg/Kg	(28.5)	6, pp. 00001-00008, 00011, 00028
	Vanadium	24.9 mg/Kg	(0.42)	6, pp. 00001-00008, 00011, 00028
	Zinc	34.3 mg/Kg Jv	(0.24)	6, pp. 00001-00008, 00011, 00028

Table 7 (cont)
CONTAMINATED SEDIMENT SAMPLES

Sample Location/CLP ID	Hazardous Substance	Concentration	(SQL) or [MDL]	Reference
SE-11/ (No CLP ID)	Total TCDF	75 ng/Kg	[1]	10, p. 00013
	Total TCDD	82 ng/Kg	[1]	10, p. 00013
	Total HxCDD	5.8 ng/Kg	[4.8]	10, p. 00013
	Total HpCDD	18 ng/Kg	[4.8]	10, p. 00013
	Total OCDD	80 ng/Kg	[9.6]	10, p. 00013
SE-11/ MFHL44	Arsenic	3.9 mg/Kg	(1.1)	6, pp. 00001-00008, 00011, 00029
	Barium	119 mg/Kg	(0.19)	6, pp. 00001-00008, 00011, 00029
	Beryllium	0.79 mg/Kg	(0.02)	6, pp. 00001-00008, 00011, 00029
	Cadmium	0.39 mg/Kg	(0.08)	6, pp. 00001-00008, 00011, 00029
	Chromium	14.4 mg/Kg Jv	(0.19)	6, pp. 00001-00008, 00011, 00029
	Cobalt	6.9 mg/Kg	(0.31)	6, pp. 00001-00008, 00011, 00029
	Copper	8.6 mg/Kg	(0.31)	6, pp. 00001-00008, 00011, 00029
	Lead	13.5 mg/Kg	(0.51)	6, pp. 00001-00008, 00011, 00029
	Manganese	430 mg/Kg Jv	(0.11)	6, pp. 00001-00008, 00011, 00029
	Nickel	10.2 mg/Kg J^	(0.36)	6, pp. 00001-00008, 00011, 00029
	Silver	0.63 mg/Kg	(0.22)	6, pp. 00001-00008, 00011, 00029
	Sodium	1970 mg/Kg	(26.4)	6, pp. 00001-00008, 00011, 00029
	Vanadium	24.8 mg/Kg	(0.39)	6, pp. 00001-00008, 00011, 00029
	Zinc	33 mg/Kg Jv	(0.22)	6, pp. 00001-00008, 00011, 00029

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-12/ (No CLP ID)	Total TCDF	53 ng/Kg	[1]	10, p. 00014
	Total TCDD	22 ng/Kg	[1]	10, p. 00014
	Total HxCDD	6.5 ng/Kg	[4.9]	10, p. 00014
	Total HpCDD	21 ng/Kg	[4.9]	10, p. 00014
	Total OCDD	84 ng/Kg	[9.7]	10, p. 00014
SE-12 MFHL45	Arsenic	3.7 mg/Kg J	(1.15)	6, pp. 00001-00008, 00011, 00030
	Barium	143 mg/Kg	(0.17)	6, pp. 00001-00008, 00011, 00030
	Beryllium	0.69 mg/Kg	(0.02)	6, pp. 00001-00008, 00011, 00030
	Cadmium	0.38 mg/Kg	(0.08)	6, pp. 00001-00008, 00011, 00030
	Chromium	10.2 mg/Kg Jv	(0.19)	6, pp. 00001-00008, 00011, 00030
	Cobalt	7.2 mg/Kg	(0.3)	6, pp. 00001-00008, 00011, 00030
	Copper	9.1 mg/Kg	(0.3)	6, pp. 00001-00008, 00011, 00030
	Lead	16.7 mg/Kg	(0.5)	6, pp. 00001-00008, 00011, 00030
	Manganese	557 mg/Kg *	(0.1)	6, pp. 00001-00008, 00011, 00030
	Nickel	8.9 mg/Kg J^	(0.36)	6, pp. 00001-00008, 00011, 00030
	Silver	0.5 mg/Kg	(0.22)	6, pp. 00001-00008, 00011, 00030
	Sodium	1720 mg/Kg	(26.1)	6, pp. 00001-00008, 00011, 00030
	Vanadium	22.5 mg/Kg	(0.39)	6, pp. 00001-00008, 00011, 00030
	Zinc	30.1 mg/Kg Jv	(0.22)	6, pp. 00001-00008, 00011, 00030

Table 7 (cont.) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-13/ (No CLP ID)	Total TCDF	1.1 ng/Kg	[1]	10, p. 00012
	Total TCDD	10 ng/Kg	[1]	10, p. 00012
	Total PeCDD	80 ng/Kg	[1]	10, p. 00012
	Total HpCDD	84 ng/Kg	[5]	10, p. 00012
	Total OCDD	200 ng/Kg	[9.9]	10, p. 00012
SE-13/ MFHL40	Arsenic	9.3 mg/Kg	(1.6)	6, pp. 00001-00008, 00010, 00025
	Barium	36.1 mg/Kg	(0.23)	6, pp. 00001-00008, 00010, 00025
	Beryllium	1.6 mg/Kg	(0.03)	6, pp. 00001-00008, 00010, 00025
	Cadmium	0.78 mg/Kg	(0.11)	6, pp. 00001-00008, 00010, 00025
	Chromium	25.9 mg/Kg Jv	(0.27)	6, pp. 00001-00008, 00010, 00025
	Cobalt	17.5 mg/Kg	(0.43)	6, pp. 00001-00008, 00010, 00025
	Copper	13.3 mg/Kg	(0.43)	6, pp. 00001-00008, 00010, 00025
	Lead	23.4 mg/Kg	(0.71)	6, pp. 00001-00008, 00010, 00025
	Manganese	150 mg/Kg Jv	(0.15)	6, pp. 00001-00008, 00010, 00025
	Nickel	26.3 mg/Kg J^	(0.51)	6, pp. 00001-00008, 00010, 00025
	Silver	1.2 mg/Kg	(0.31)	6, pp. 00001-00008, 00010, 00025
	Sodium	9990 mg/Kg	(37)	6, pp. 00001-00008, 00010, 00025
	Vanadium	43.4 mg/Kg	(0.55)	6, pp. 00001-00008, 00010, 00025
	Zinc	79 mg/Kg Jv	(0.31)	6, pp. 00001-00008, 00010, 00025

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-14/ (No CLP ID)	Total TCDF	17 ng/Kg	[1]	10, p. 00011
	Total TCDD	12 ng/Kg	[1]	10, p. 00011
	Total HxCDD	130 ng/Kg	[1]	10, p. 00011
	Total HpCDD	160 ng/Kg	[1]	10, p. 00011
	Total OCDD	430 ng/Kg	[9.9]	10, p. 00011
SE-14/ MFHL41	Arsenic	6.5 mg/Kg	(1.7)	6, pp. 00001-00008, 00010, 00026
	Barium	48.5 mg/Kg	(0.24)	6, pp. 00001-00008, 00010, 00026
	Cadmium	0.58 mg/Kg	(0.12)	6, pp. 00001-00008, 00010, 00026
	Chromium	25.4 mg/Kg Jv	(0.29)	6, pp. 00001-00008, 00010, 00026
	Cobalt	7.4 mg/Kg	(0.45)	6, pp. 00001-00008, 00010, 00026
	Copper	16.2 mg/Kg	(0.45)	6, pp. 00001-00008, 00010, 00026
	Lead	23.1 mg/Kg	(0.74)	6, pp. 00001-00008, 00010, 00026
	Managanese	101 mg/Kg Jv	(0.16)	6, pp. 00001-00008, 00010, 00026
	Nickel	15.5 mg/Kg J^	(0.53)	6, pp. 00001-00008, 00010, 00026
	Silver	0.91 mg/Kg	(0.33)	6, pp. 00001-00008, 00010, 00026
	Sodium	11100 mg/Kg	(38.6)	6, pp. 00001-00008, 00010, 00026
	Vanadium	43.8 mg/Kg	(0.58)	6, pp. 00001-00008, 00010, 00026
	Zinc	69.7 mg/Kg Jv	(0.33)	6, pp. 00001-00008, 00010, 00026

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-16/ NO CLP ID	NO DIOXIN SAMPLE COLLECTED AT THIS LOCATION			
SE-16/ MFHL37	Arsenic	5.7 mg/Kg	(1)	6, pp. 00001-00008, 00010, 00022
	Barium	203 mg/Kg	(0.16)	6, pp. 00001-00008, 00010, 00022
	Beryllium	0.63 mg/Kg	(0.02)	6, pp. 00001-00008, 00010, 00022
	Cadmium	0.37 mg/Kg	(0.07)	6, pp. 00001-00008, 00010, 00022
	Chromium	10.4 mg/Kg Jv	(0.18)	6, pp. 00001-00008, 00010, 00022
	Cobalt	4.6 mg/Kg	(0.28)	6, pp. 00001-00008, 00010, 00022
	Copper	7 mg/Kg	(0.28)	6, pp. 00001-00008, 00010, 00022
	Lead	10 mg/Kg	(0.47)	6, pp. 00001-00008, 00010, 00022
	Manganese	132 mg/Kg Jv	(0.1)	6, pp. 00001-00008, 00010, 00022
	Nickel	8.4 mg/Kg J^	(0.34)	6, pp. 00001-00008, 00010, 00022
	Silver	0.6 mg/Kg	(0.21)	6, pp. 00001-00008, 00010, 00022
	Sodium	3510 mg/Kg	(24.5)	6, pp. 00001-00008, 00010, 00022
	Vanadium	30.3 mg/Kg	(0.36)	6, pp. 00001-00008, 00010, 00022
	Zinc	22.5 mg/Kg Jv	(0.21)	6, pp. 00001-00008, 00010, 00022

Table 7 (cont)
CONTAMINATED SEDIMENT SAMPLES

Sample Location/CLP ID	Hazardous Substance	Concentration	(SQL) or [MDL]	Reference
SE-18/ NO CLP ID	NO DIOXIN SAMPLE COLLECTED AT THIS LOCATION			
SE-18 MFHL39	Arsenic	8.4 mg/Kg	(1.3)	6, pp. 00001-00008, 00010, 00024
	Barium	85.1 mg/Kg	(0.19)	6, pp. 00001-00008, 00010, 00024
	Beryllium	0.59 mg/Kg	(0.19)	6, pp. 00001-00008, 00010, 00024
	Cadmium	0.60 mg/Kg	(0.09)	6, pp. 00001-00008, 00010, 00024
	Chromium	46.7 mg/Kg Jv	(0.22)	6, pp. 00001-00008, 00010, 00024
	Cobalt	6.7 mg/Kg	(0.3)	6, pp. 00001-00008, 00010, 00024
	Copper	29.7 mg/Kg	(0.3)	6, pp. 00001-00008, 00010, 00024
	Lead	42.5 mg/Kg	(0.58)	6, pp. 00001-00008, 00010, 00024
	Manganese	227 mg/Kg Jv	(0.13)	6, pp. 00001-00008, 00010, 00024
	Nickel	8.9 mg/Kg J^	(0.42)	6, pp. 00001-00008, 00010, 00024
	Silver	1.0 mg/Kg	(0.26)	6, pp. 00001-00008, 00010, 00024
	Sodium	5320 mg/Kg	(30.2)	6, pp. 00001-00008, 00010, 00024
	Vanadium	18.3 mg/Kg	(0.45)	6, pp. 00001-00008, 00010, 00024
	Zinc	78.8 mg/Kg Jv	(0.26)	6, pp. 00001-00008, 00010, 00024

Table 8 Data Usability for Sediment Release Samples							
Sample Location / CLP ID	Hazardous Substance	Concentration [SQL] mg/Kg	Bias	Bias Correction Calculation	Release Concentration Corrected for Bias	3 x Background	Usable as a Release Value?
SE-01 MFHL52 (bkgd)	Manganese	150 [0.1]	Jv	150 x 1.24	186 J^	558	N/A
SE-12 MFHL45	Manganese	657 [0.1]	Jv	None	657	N/A	Yes

Table 9
Data Usability for Sediment Source Samples

Sample Location / CLP ID	Hazardous Substance	Concentration [SQL] mg/Kg	Bias	Bias Correction Calculation	Release Concentration Corrected for Bias	Usable as a Release Value?
SE-04 MFHL49	Chromium	11.9	Jv	None	N/A	N/A
	Lead	9.3	Jv	None	N/A	N/A
	Manganese	202	Jv	None	N/A	N/A
	Nickel	8.6	J^	8.6/1.35	6.4	Yes, but <CRDL (CRDL=8)
	Zinc	28.7	Jv	None	N/A	N/A
SE-05 MFHL50	Chromium	69.4	Jv	None	N/A	N/A
	Lead	51.5	Jv	None	N/A	N/A
	Manganese	541	Jv	None	N/A	N/A
	Nickel	14	J^	14/1.35	10.4	Yes
	Zinc	150	Jv	None	N/A	N/A
SE-06 MFHL51	Chromium	14	Jv	None	N/A	N/A
	Lead	10.5	Jv	None	N/A	N/A
	Manganese	201	Jv	None	N/A	N/A
	Nickel	9.5	J^	9.5/1.35	7.0	Yes, but < CRDL (CRDL=8)
	Zinc	25.1	Jv	None	N/A	N/A
SE-07 MFHL46	Chromium	109	Jv	None	N/A	N/A
	Lead	42.6	Jv	None	N/A	N/A
	Manganese	426	Jv	None	N/A	N/A
	Nickel	24.3	J^	24.3/1.35	18	Yes
	Zinc	146	Jv	None	N/A	N/A

Note: J = The value is an estimated concentration because one or more of the quality control criteria have not been met. It is included to show that the substance has been qualitatively identified as present in this sample.

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-09/ MFHL48	Arsenic	2.1 mg/Kg	(1.25)	6, pp. 00001-00008, 00012, 00033
	Barium	99.4 mg/Kg	(0.18)	6, pp. 00001-00008, 00012, 00033
	Beryllium	0.7 mg/Kg	(0.03)	6, pp. 00001-00008, 00012, 00033
	Cadmium	0.4 mg/Kg	(0.09)	6, pp. 00001-00008, 00012, 00033
	Chromium	12.1 mg/Kg Jv	(0.21)	6, pp. 00001-00008, 00012, 00033
	Cobalt	5.6 mg/Kg	(0.33)	6, pp. 00001-00008, 00012, 00033
	Copper	12.6 mg/Kg	(0.33)	6, pp. 00001-00008, 00012, 00033
	Lead	11.0 mg/Kg	(0.54)	6, pp. 00001-00008, 00012, 00033
	Manganese	241 mg/Kg Jv	(0.12)	6, pp. 00001-00008, 00012, 00033
	Nickel	10.3 mg/Kg J^	(0.39)	6, pp. 00001-00008, 00012, 00033
	Silver	0.61 mg/Kg	(0.24)	6, pp. 00001-00008, 00012, 00033
	Sodium	5050 mg/Kg	(28.3)	6, pp. 00001-00008, 00012, 00033
	Vanadium	21.8 mg/Kg	(0.42)	6, pp. 00001-00008, 00012, 00033
	Zinc	34.1 mg/Kg Jv	(0.24)	6, pp. 00001-00008, 00012, 00033

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-10/ MFHL43	Arsenic	4.6 mg/Kg J	(1.25)	6, pp. 00001-00008, 00011, 00028
	Barium	105 mg/Kg	(0.18)	6, pp. 00001-00008, 00011, 00028
	Beryllium	0.79 mg/Kg	(0.03)	6, pp. 00001-00008, 00011, 00028
	Cadmium	0.5 mg/Kg	(0.09)	6, pp. 00001-00008, 00011, 00028
	Chromium	14.6 mg/Kg Jv	(0.21)	6, pp. 00001-00008, 00011, 00028
	Cobalt	5.7 mg/Kg	(0.33)	6, pp. 00001-00008, 00011, 00028
	Copper	11.4 mg/Kg	(0.33)	6, pp. 00001-00008, 00011, 00028
	Lead	11.4 mg/Kg	(0.55)	6, pp. 00001-00008, 00011, 00028
	Manganese	242 mg/Kg Jv	(0.12)	6, pp. 00001-00008, 00011, 00028
	Nickel	10.4 mg/Kg J^	(0.39)	6, pp. 00001-00008, 00011, 00028
	Silver	0.71 mg/Kg	(0.24)	6, pp. 00001-00008, 00011, 00028
	Sodium	4950 mg/Kg	(28.5)	6, pp. 00001-00008, 00011, 00028
	Vanadium	24.9 mg/Kg	(0.42)	6, pp. 00001-00008, 00011, 00028
	Zinc	34.3 mg/Kg Jv	(0.24)	6, pp. 00001-00008, 00011, 00028

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-11/ (No CLP ID)	Total TCDF	75 ng/Kg	[1]	10, p. 00013
	Total TCDD	22 ng/Kg	[1]	10, p. 00013
	Total HxCDD	5.8 ng/Kg	[4.8]	10, p. 00013
	Total HpCDD	18 ng/Kg	[4.8]	10, p. 00013
	Total OCDD	80 ng/Kg	[9.6]	10, p. 00013
SE-11/ MFHL44	Arsenic	3.9 mg/Kg	(1.1)	6, pp. 00001-00008, 00011, 00029
	Barium	119 mg/Kg	(0.18)	6, pp. 00001-00008, 00011, 00029
	Beryllium	0.79 mg/Kg	(0.02)	6, pp. 00001-00008, 00011, 00029
	Cadmium	0.39 mg/Kg	(0.08)	6, pp. 00001-00008, 00011, 00029
	Chromium	14.4 mg/Kg Jv	(0.19)	6, pp. 00001-00008, 00011, 00029
	Cobalt	6.9 mg/Kg	(0.31)	6, pp. 00001-00008, 00011, 00029
	Copper	8.6 mg/Kg	(0.31)	6, pp. 00001-00008, 00011, 00029
	Lead	13.5 mg/Kg	(0.51)	6, pp. 00001-00008, 00011, 00029
	Manganese	430 mg/Kg Jv	(0.11)	6, pp. 00001-00008, 00011, 00029
	Nickel	10.2 mg/Kg J^	(0.36)	6, pp. 00001-00008, 00011, 00029
	Silver	0.63 mg/Kg	(0.22)	6, pp. 00001-00008, 00011, 00029
	Sodium	1970 mg/Kg	(26.4)	6, pp. 00001-00008, 00011, 00029
	Vanadium	24.8 mg/Kg	(0.39)	6, pp. 00001-00008, 00011, 00029
	Zinc	33 mg/Kg Jv	(0.22)	6, pp. 00001-00008, 00011, 00029

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-12/ (No CLP ID)	Total TCDF	53 ng/Kg	[1]	10, p. 00014
	Total TCDD	22 ng/Kg	[1]	10, p. 00014
	Total HxCDD	6.5 ng/Kg	[4.9]	10, p. 00014
	Total HpCDD	21 ng/Kg	[4.9]	10, p. 00014
	Total OCDD	84 ng/Kg	[9.7]	10, p. 00014
SE-12 MFHL45	Arsenic	3.7 mg/Kg J	(1.15)	6, pp. 00001-00008, 00011, 00030
	Barium	143 mg/Kg	(0.17)	6, pp. 00001-00008, 00011, 00030
	Beryllium	0.69 mg/Kg	(0.02)	6, pp. 00001-00008, 00011, 00030
	Cadmium	0.38 mg/Kg	(0.08)	6, pp. 00001-00008, 00011, 00030
	Chromium	10.2 mg/Kg Jv	(0.19)	6, pp. 00001-00008, 00011, 00030
	Cobalt	7.2 mg/Kg	(0.3)	6, pp. 00001-00008, 00011, 00030
	Copper	9.1 mg/Kg	(0.3)	6, pp. 00001-00008, 00011, 00030
	Lead	16.7 mg/Kg	(0.5)	6, pp. 00001-00008, 00011, 00030
	Manganese	557 mg/Kg *	(0.1)	6, pp. 00001-00008, 00011, 00030
	Nickel	8.9 mg/Kg J^	(0.36)	6, pp. 00001-00008, 00011, 00030
	Silver	0.5 mg/Kg	(0.22)	6, pp. 00001-00008, 00011, 00030
	Sodium	1720 mg/Kg	(26.1)	6, pp. 00001-00008, 00011, 00030
	Vanadium	22.5 mg/Kg	(0.39)	6, pp. 00001-00008, 00011, 00030
	Zinc	30.1 mg/Kg Jv	(0.22)	6, pp. 00001-00008, 00011, 00030

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-13/ (No CLP ID)	Total TCDF	1.1 ng/Kg	[1]	10, p. 00012
	Total TCDD	10 ng/Kg	[1]	10, p. 00012
	Total HxCDD	80 ng/Kg	[1]	10, p. 00012
	Total HpCDD	84 ng/Kg	[5]	10, p. 00012
	Total OCDD	200 ng/Kg	[9.9]	10, p. 00012
SE-13/ MFHL40	Arsenic	9.3 mg/Kg	(1.6)	6, pp. 00001-00008, 00010, 00025
	Barium	36.1 mg/Kg	(0.23)	6, pp. 00001-00008, 00010, 00025
	Beryllium	1.6 mg/Kg	(0.03)	6, pp. 00001-00008, 00010, 00025
	Cadmium	0.78 mg/Kg	(0.11)	6, pp. 00001-00008, 00010, 00025
	Chromium	25.9 mg/Kg Jv	(0.27)	6, pp. 00001-00008, 00010, 00025
	Cobalt	17.5 mg/Kg	(0.43)	6, pp. 00001-00008, 00010, 00025
	Copper	13.3 mg/Kg	(0.43)	6, pp. 00001-00008, 00010, 00025
	Lead	23.4 mg/Kg	(0.71)	6, pp. 00001-00008, 00010, 00025
	Manganese	150 mg/Kg Jv	(0.15)	6, pp. 00001-00008, 00010, 00025
	Nickel	26.3 mg/Kg J^	(0.51)	6, pp. 00001-00008, 00010, 00025
	Silver	1.2 mg/Kg	(0.31)	6, pp. 00001-00008, 00010, 00025
	Sodium	9990 mg/Kg	(37)	6, pp. 00001-00008, 00010, 00025
	Vanadium	43.4 mg/Kg	(0.55)	6, pp. 00001-00008, 00010, 00025
	Zinc	79 mg/Kg Jv	(0.31)	6, pp. 00001-00008, 00010, 00025

Table 7 (cont)
CONTAMINATED SEDIMENT SAMPLES

Sample Location/CLP ID	Hazardous Substance	Concentration	(SQL) or [MDL]	Reference
SE-14/ (No CLP ID)	Total TCDF	17 ng/Kg	[1]	10, p. 00011
	Total TCDD	12 ng/Kg	[1]	10, p. 00011
	Total PeCDD	130 ng/Kg	[1]	10, p. 00011
	Total HpCDD	160 ng/Kg	[1]	10, p. 00011
	Total OCDD	430 ng/Kg	[9.9]	10, p. 00011
SE-14/ MFHL41	Arsenic	6.5 mg/Kg	(1.7)	6, pp. 00001-00008, 00010, 00026
	Barium	48.5 mg/Kg	(0.24)	6, pp. 00001-00008, 00010, 00026
	Cadmium	0.58 mg/Kg	(0.12)	6, pp. 00001-00008, 00010, 00026
	Chromium	25.4 mg/Kg Jv	(0.29)	6, pp. 00001-00008, 00010, 00026
	Cobalt	7.4 mg/Kg	(0.45)	6, pp. 00001-00008, 00010, 00026
	Copper	16.2 mg/Kg	(0.45)	6, pp. 00001-00008, 00010, 00026
	Lead	23.1 mg/Kg	(0.74)	6, pp. 00001-00008, 00010, 00026
	Managanese	101 mg/Kg Jv	(0.16)	6, pp. 00001-00008, 00010, 00026
	Nickel	15.5 mg/Kg J^	(0.53)	6, pp. 00001-00008, 00010, 00026
	Silver	0.91 mg/Kg	(0.33)	6, pp. 00001-00008, 00010, 00026
	Sodium	11100 mg/Kg	(38.6)	6, pp. 00001-00008, 00010, 00026
	Vanadium	43.8 mg/Kg	(0.58)	6, pp. 00001-00008, 00010, 00026
	Zinc	69.7 mg/Kg Jv	(0.33)	6, pp. 00001-00008, 00010, 00026

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-16/ NO CLP ID	NO DIOXIN SAMPLE COLLECTED AT THIS LOCATION			
SE-16/ MFHL37	Arsenic	5.7 mg/Kg	(1)	6, pp. 00001-00008, 00010, 00022
	Barium	203 mg/Kg	(0.16)	6, pp. 00001-00008, 00010, 00022
	Beryllium	0.63 mg/Kg	(0.02)	6, pp. 00001-00008, 00010, 00022
	Cadmium	0.37 mg/Kg	(0.07)	6, pp. 00001-00008, 00010, 00022
	Chromium	10.4 mg/Kg Jv	(0.18)	6, pp. 00001-00008, 00010, 00022
	Cobalt	4.6 mg/Kg	(0.28)	6, pp. 00001-00008, 00010, 00022
	Copper	7 mg/Kg	(0.28)	6, pp. 00001-00008, 00010, 00022
	Lead	10 mg/Kg	(0.47)	6, pp. 00001-00008, 00010, 00022
	Manganese	132 mg/Kg Jv	(0.1)	6, pp. 00001-00008, 00010, 00022
	Nickel	8.4 mg/Kg J^	(0.34)	6, pp. 00001-00008, 00010, 00022
	Silver	0.6 mg/Kg	(0.21)	6, pp. 00001-00008, 00010, 00022
	Sodium	3510 mg/Kg	(24.5)	6, pp. 00001-00008, 00010, 00022
	Vanadium	30.3 mg/Kg	(0.36)	6, pp. 00001-00008, 00010, 00022
	Zinc	22.5 mg/Kg Jv	(0.21)	6, pp. 00001-00008, 00010, 00022

Table 7 (cont) CONTAMINATED SEDIMENT SAMPLES				
Sample Location/CLP ID	**Hazardous Substance**	**Concentration**	**(SQL) or [MDL]**	**Reference**
SE-18/ NO CLP ID	NO DIOXIN SAMPLE COLLECTED AT THIS LOCATION			
SE-18 MFHL39	Arsenic	8.4 mg/Kg	(1.3)	6, pp. 00001-00008, 00010, 00024
	Barium	85.1 mg/Kg	(0.19)	6, pp. 00001-00008, 00010, 00024
	Beryllium	0.59 mg/Kg	(0.19)	6, pp. 00001-00008, 00010, 00024
	Cadmium	0.60 mg/Kg	(0.09)	6, pp. 00001-00008, 00010, 00024
	Chromium	46.7 mg/Kg Jv	(0.22)	6, pp. 00001-00008, 00010, 00024
	Cobalt	6.7 mg/Kg	(0.3)	6, pp. 00001-00008, 00010, 00024
	Copper	29.7 mg/Kg	(0.3)	6, pp. 00001-00008, 00010, 00024
	Lead	42.5 mg/Kg	(0.58)	6, pp. 00001-00008, 00010, 00024
	Manganese	227 mg/Kg Jv	(0.13)	6, pp. 00001-00008, 00010, 00024
	Nickel	8.9 mg/Kg J^	(0.42)	6, pp. 00001-00008, 00010, 00024
	Silver	1.0 mg/Kg	(0.26)	6, pp. 00001-00008, 00010, 00024
	Sodium	5320 mg/Kg	(30.2)	6, pp. 00001-00008, 00010, 00024
	Vanadium	18.3 mg/Kg	(0.45)	6, pp. 00001-00008, 00010, 00024
	Zinc	78.8 mg/Kg Jv	(0.26)	6, pp. 00001-00008, 00010, 00024

Table 8 Data Usability for Sediment Release Samples							
Sample Location / CLP ID	Hazardous Substance	Concentration (SQL) mg/Kg	Bias	Bias Correction Calculation	Release Concentration Corrected for Bias	3 x Background	Usable as a Release Value?
SE-01 MFHL52 (bkgd)	Manganese	150 [0.1]	Jv	150 x 1.24	186 J^	558	N/A
SE-12 MFHL45	Manganese	657 [0.1]	Jv	None	657	N/A	Yes

Table 9
Data Usability for Sediment Source Samples

Sample Location / CLP ID	Hazardous Substance	Concentration [SQL] mg/Kg	Bias	Bias Correction Calculation	Release Concentration Corrected for Bias	Usable as a Release Value?
SE-04 MFHL49	Chromium	11.9	Jv	None	N/A	N/A
	Lead	9.3	Jv	None	N/A	N/A
	Manganese	202	Jv	None	N/A	N/A
	Nickel	8.6	J^	8.6/1.35	6.4	Yes, but <CRDL (CRDL=8)
	Zinc	28.7	Jv	None	N/A	N/A
SE-05 MFHL50	Chromium	69.4	Jv	None	N/A	N/A
	Lead	51.5	Jv	None	N/A	N/A
	Manganese	541	Jv	None	N/A	N/A
	Nickel	14	J^	14/1.35	10.4	Yes
	Zinc	150	Jv	None	N/A	N/A
SE-06 MFHL51	Chromium	14	Jv	None	N/A	N/A
	Lead	10.5	Jv	None	N/A	N/A
	Manganese	201	Jv	None.	N/A	N/A
	Nickel	9.5	J^	9.5/1.35	7.0	Yes, but < CRDL (CRDL=8)
	Zinc	25.1	Jv	None	N/A	N/A
SE-07 MFHL46	Chromium	109	Jv	None	N/A	N/A
	Lead	42.6	Jv	None	N/A	N/A
	Manganese	426	Jv	None	N/A	N/A
	Nickel	24.3	J^	24.3/1.35	18	Yes
	Zinc	146	Jv	None	N/A	N/A

Note: J = The value is an estimated concentration because one or more of the quality control criteria have not been met. It is included to show that the substance has been qualitatively identified as present in this sample.

Attribution:

The constituents found in the sediment samples that qualify as observed releases are also found in sediment samples collected from sources which are present on-site. The PPE from Source 1 (Impoundment #4A) was sampled and indicated constituents associated with each source at significant levels above background (Tables 2 and 3 and Reference 3, pp. 44-48).

Hazardous Substances Released:

Total TCDF
Total TCDD
Total HxCDD
Total HpCDD
Barium
Copper
Manganese

4.1.3.2 HUMAN FOOD CHAIN THREAT-WASTE CHARACTERISTICS

4.1.3.2.1 Toxicity/Persistence/Bioaccumulation

TABLE 10

Hazardous Substance Toxicity, Persistence and Bioaccumulation

Hazardous Substance	Source Number	Toxicity Factor Value[1]	Persistence Factor Value[1]	Bioaccum. Factor Value	Tox/Per/Bio Factor Value (Table 4-16)	Reference
Total TCDF	1	10,000	1.0	50,000	5×10^8	1, 4
Total TCDD	1	10,000	1.0	5,000	5×10^7	1, 4
Total HxCDD	1	10,000	0.4	500	2×10^6	1, 4
Total HpCDD	1	10,000	1.0	5,000	5×10^7	1, 4
Barium	1, 2, 3, 4	10,000	1.0	0.5	5,000	1, 4
Copper	1, 2, 3, 4	N/A	1.0	50,000	N/A	1, 4
Manganese	1, 2, 3, 4	10,000	1.0	0.5	5,000	1, 4

Note: [1]"Lake" was the predominate surface water body type used for factor value determination. Factor values for each hazardous substance were obtained from the Superfund Chemical Data Matrix (SCDM) 1996.

Bioaccumulation factor (BCF) data are available in the Superfund Chemical Data Matrix (SCDM) 1996 for both fresh water and salt water for the hazardous substances evaluated at a site. Salt water BCF data were used in evaluating this site.

4.1.3.2.2 Hazardous Waste Quantity

Below are the Hazardous Waste Quantity Values for Sources 1, 2, 3 and 4 as described in previous text.

TABLE 11
Surface Water Pathway - Hazardous Waste Quantity

Source Number	Source Hazardous Waste Quantity Value (Sec. 2.4.2.1.5)	Is Source Hazardous Constituent Quantity data complete? (yes/no)
1	25,646.6	no
2	51,230.7	no
3	19,230.7	no
4	34,120.4	no
Sum of Values:	130,228	

The sum of the source hazardous waste quantity values is assigned as the Hazardous Waste Quantity Factor Value (Reference 1, Section 2.4.2.2). The sum of the source hazardous waste quantity values for the MIMC site, rounded to the nearest integer, is 130,228.

4.1.3.3 HUMAN FOOD CHAIN THREAT-TARGETS

Actual Human Food Chain Contamination

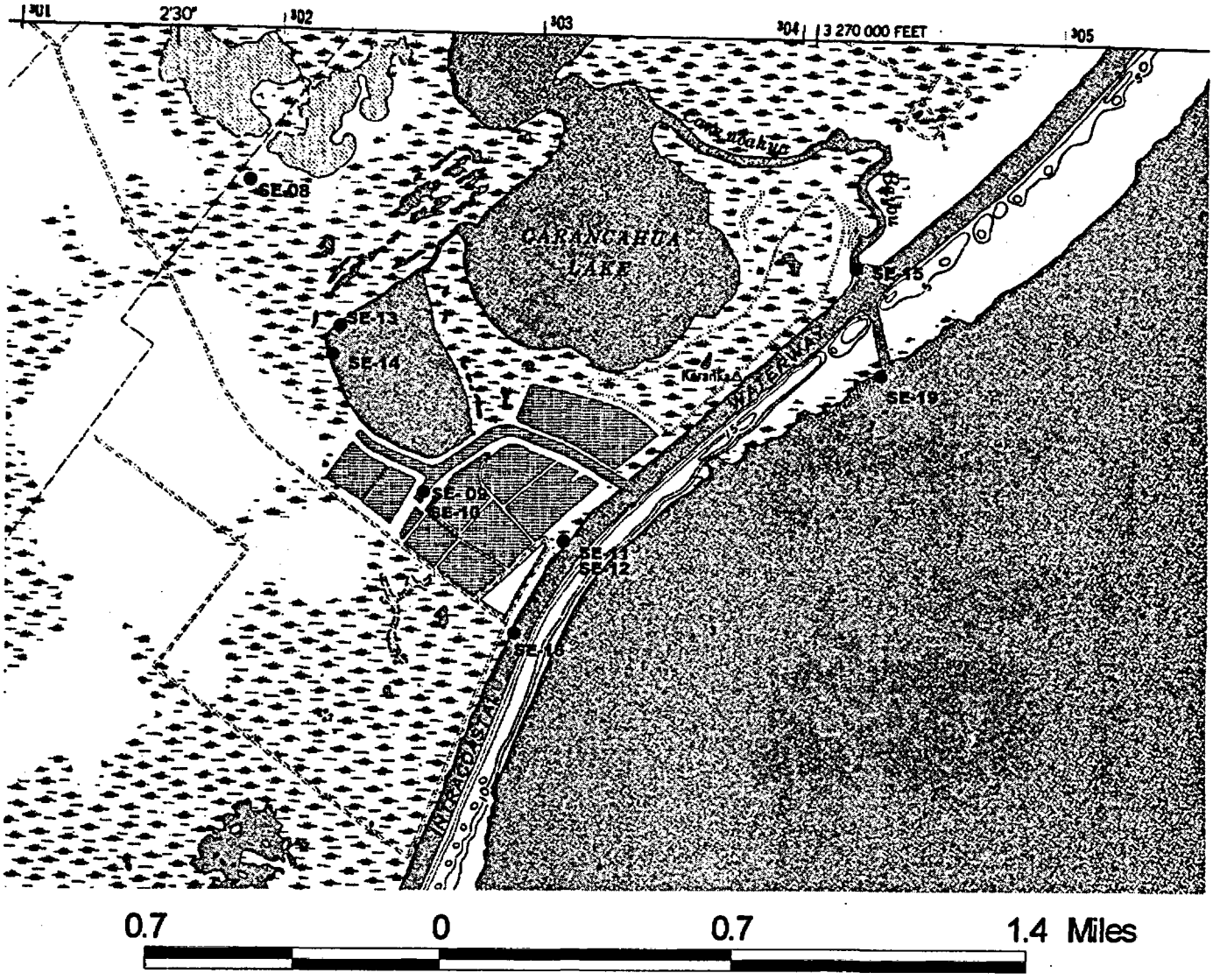
According to the HRS, the sediment samples listed below meet the criteria of an observed release for the watershed and the hazardous substances detected in these samples have a bioaccumulation potential factor value of 500 or greater (Reference 1, p. 51620).

Table 12
Surface Water Pathway - Contaminated Samples

CLP Sample ID	Sample Location	Distance from Probable Point of Entry	Hazardous Substance	Reference
No CLP ID MFHL47	SE-08	8000 Feet (PPE to ICW to end of MIMC barge canal)	Total TCDD Barium	10, p. 00015 6, pp. 00001-00008, 00012, 00032
MFHL48	SE-09	6000 Feet	Barium	6, pp. 00001-00008, 00012, 00033
MFHL43	SE-10	6000 Feet	Barium	6, pp. 00001-00008, 00011, 00028
No CLP ID MFHL44	SE-11	0 Feet (PPE)	Total TCDF, Total TCDD Barium	10, p. 00013 6, pp. 00001-00008, 00011, 00029
No CLP ID MFHL45	SE-12	0 Feet (PPE)	Total TCDF, Total TCDD Barium, Manganese	10, p. 00014 6, pp. 00001-00008, 00011, 00040
No CLP ID	SE-13	14000 Feet (PPE to ICW to Caracahua Bayou to Carancahua Lake)	Total TCDD	10, p. 00012
No CLP ID	SE-14	14400 Feet PPE to ICW to Caracahua Bayou to Carancahua Lake)	Total TCDD	10, p. 00011
MFHL37	SE-16	1200 Feet	Barium	6, pp. 00001-00008, 00010, 00022
MFHL39	SE-18	47400 Feet	Copper	6, pp. 0001-0008, 00010, 00024

See Figures 6, 7 and 8 for the locations of all attribution and target sediment samples collected.

Figure 6 - Attribution and Target Samples



Base Map - Sea Isle 7.5 Minute Quadrangle

● Attribution or Target Sample

The base data used in this map is a Digital Raster Graphic (DRG), which is a digital version of a US Geological Survey 7.5 Minute Quadrangle. The DRG was produced by the TNRCC using USGS standards.

N
W E
S

Figure 7 - Target Samples West of MIMC Site

Base Map - Hoskins Mound 7.5 Minute Quadrangle

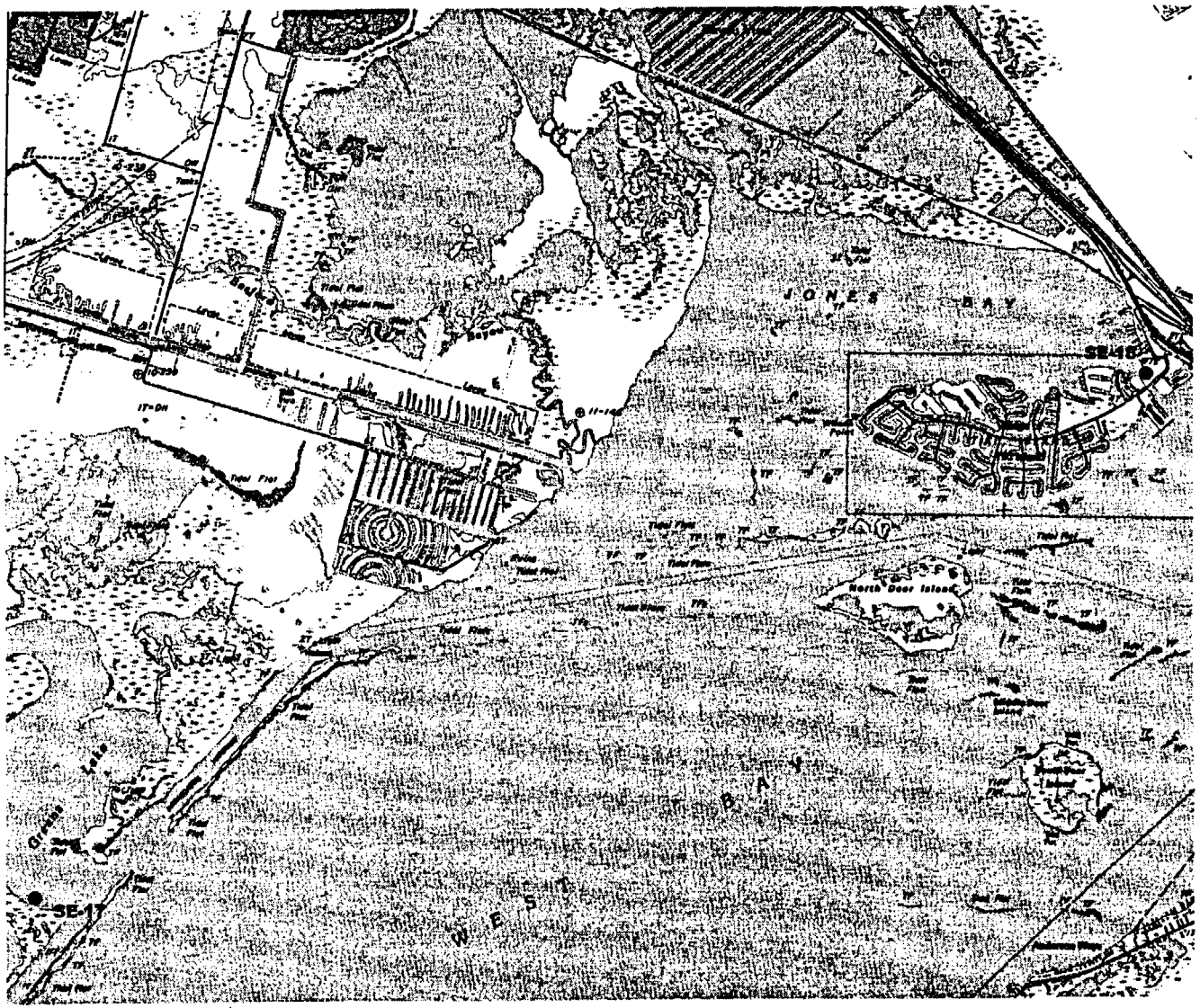
● Sediment Sample

The base data used in this map is a Gigital Raster Graphic (DRG), which is a digital version of US Geological Survey 7.5 Minute Quadrangle. The DRG was produced by the TNRCC using USGS standards.

N
W E
S

Figure 8 - Target Samples East of MIMC Site

Base Map - Virginia Point, TX 7.5 Minute Quadrangle



● Sediment Sample

The base data used in this map is a Digital Raster Graphic (DRG), which is a digital version of a US Geological Survey 7.5 Minute Quadrangle. The DRG was produced by the TNRCC using USGS standards.

N
W E
S

2 0 2 4 Miles

Closed Fisheries

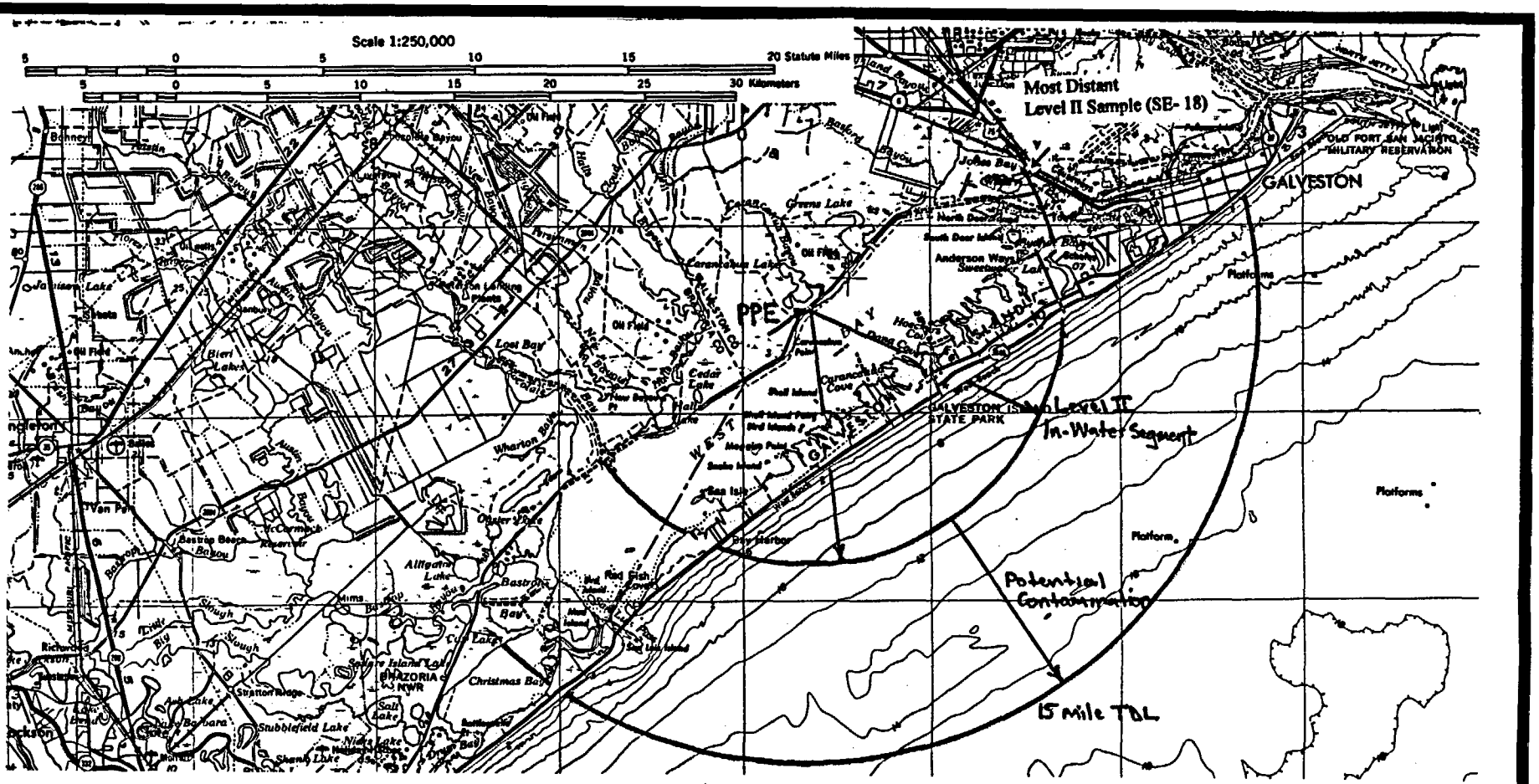
There is no data available that indicates that any portion of the West Galveston Bay fishery is closed. A portion of the West Galveston Bay oyster waters are restricted due to high levels of fecal coliform bacteria (Reference 14, p. 2). Fecal coliform bacteria are not attributable to the MIMC site.

Most Distant Level II Sample

Listed below is the most distant sample subject to actual human food chain contamination that does not meet or exceed a health-based benchmark.

Sample ID: SE-18/MFHL39 (sample collected in Jones Bay)
Distance from the probable point of entry: 47,400 feet
Reference: 6, pp. 00001-00008, 00010, 00024

See Figure 9 for the Level II Segment and the remainder of the TDL.



TNRCC

FIGURE 9: Level II Segment and Remainder of TDL

McGinnes Industrial Maintenance Corporation
TXD980697031

Hitchcock, Galveston County, Texas

Level II Fisheries

Galveston Bay is the identified fishery which is located within the portion of the in-water segment subject to Level II concentrations.

TABLE 13
Surface Water Pathway - Fishery Identification

Identity of Fishery	Extent of the Level II Fishery (Relative to the PPE)
Galveston Bay System Fishery	Beginning at PPE and extending in a 15 mile arc

4.1.3.3.1 Food Chain Individual

Fishing in Galveston Bay is documented in Reference 15.

4.1.3.3.2 Population

4.1.3.3.2.1 Level I Concentrations

No Level I concentrations were documented in the fishery during the December, 1997 SSI.

4.1.3.3.2.2 Level II Concentrations

The following table documents the estimated annual production of human food chain organisms of those fisheries that are subject to Level II concentrations.

TABLE 14
Surface Water Pathway - Fishery Production

Identity of Fishery	Annual Production (lbs)	Reference	Human Food Chain Population Value
Galveston Bay Fishery	1,870,485	15, p. 131	3,100

4.1.3.3.2.3 Potential Human Food Chain Contamination

Since the inclusion of this component would not significantly affect the overall site score, the potential human food chain contamination factor value was not calculated.

4.2 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT

Samples to characterize the ground water pathway were collected during the December , 1997 SSI. Observed releases of inorganic constituents (GW-07/MFHL82 - manganese and GW-06/MFHL87 - silver) to the ground water were documented (Reference 5, pp. 00001-00007, 00010, 00020 and pp. 00001-00007, 00011, 00025, respectively)

The ground water to surface water migration component was not evaluated since the ground water to surface water component score would not be greater than the surface water overland/flood component.

4.3 CALCULATION OF SURFACE WATER MIGRATION PATHWAY SCORE

The Surface Water Migration Pathway Score was not calculated for inclusion into this SSI Report.

5.0 SOIL EXPOSURE PATHWAY

5.1.1 OBSERVED RELEASE

The Soil Exposure Pathway was not evaluated due to the lack of targets.

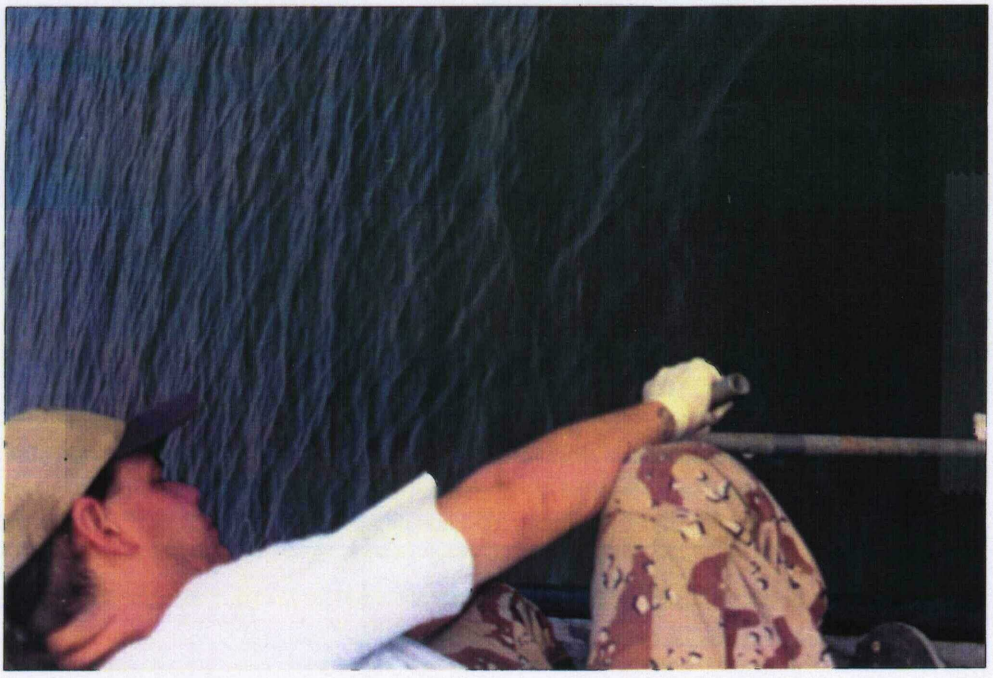
APPENDIX A

Photographs

Roll 1, Photo 1 (Facing North) Date: 12/9/97 Photographer: Marshall Cedilote
Decontamination of sediment sampler tips prior to offsite sediment sampling.

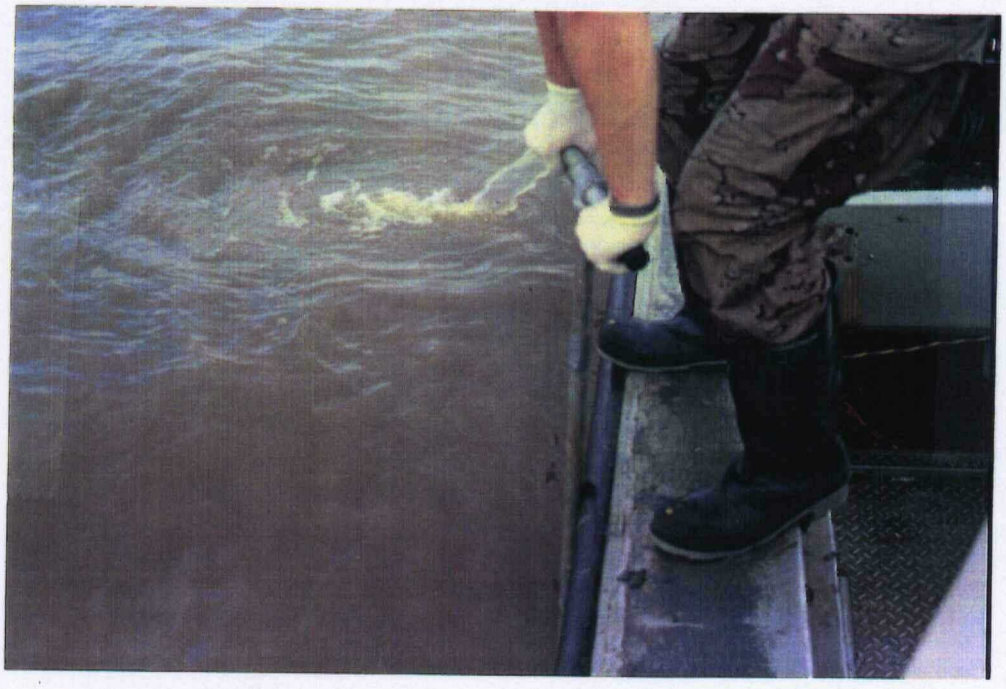
Roll 1, Photo 3 (Facing West-Northwest) Date: 12/9/97 Photographer: Catriona Smith
Collection of rinsate sample ER-01 (total metals).

Roll 1, Photo 4 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-18 in Jones Bay.



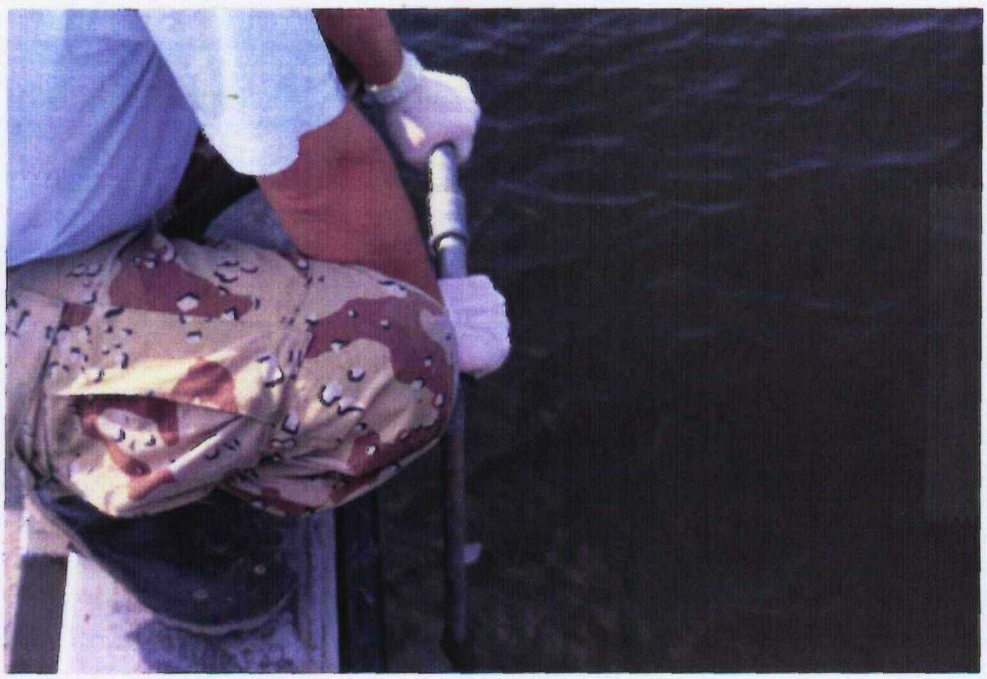
Roll 1, Photo 5 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-17 in Green's Lake.

Roll 1, Photo 8 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-23 in Chocolate Bayou.

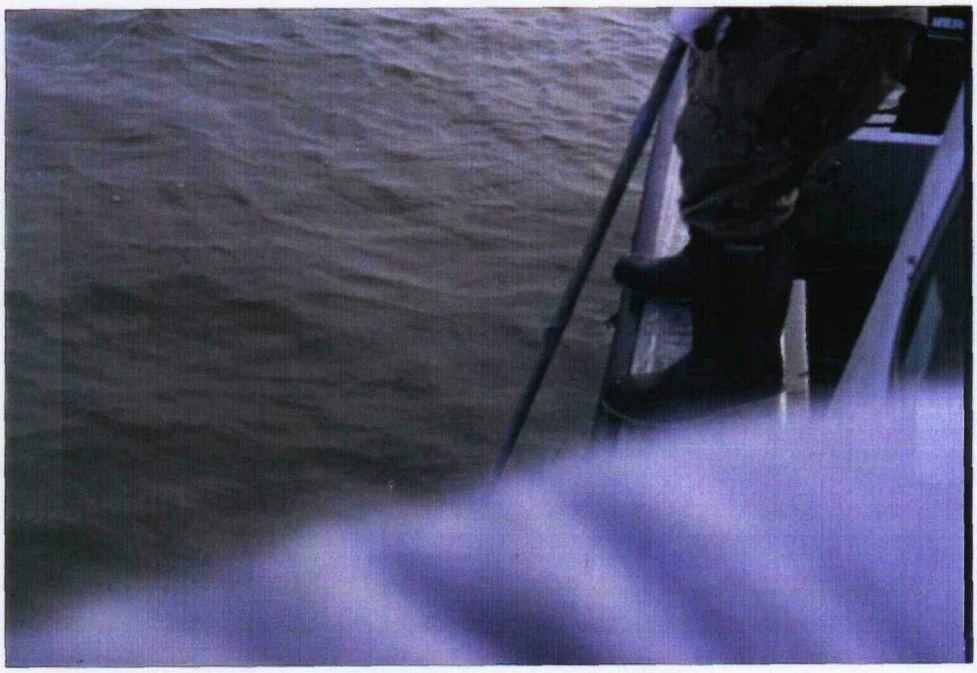


Roll 1, Photo 9 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-22 in Chocolate Bay.

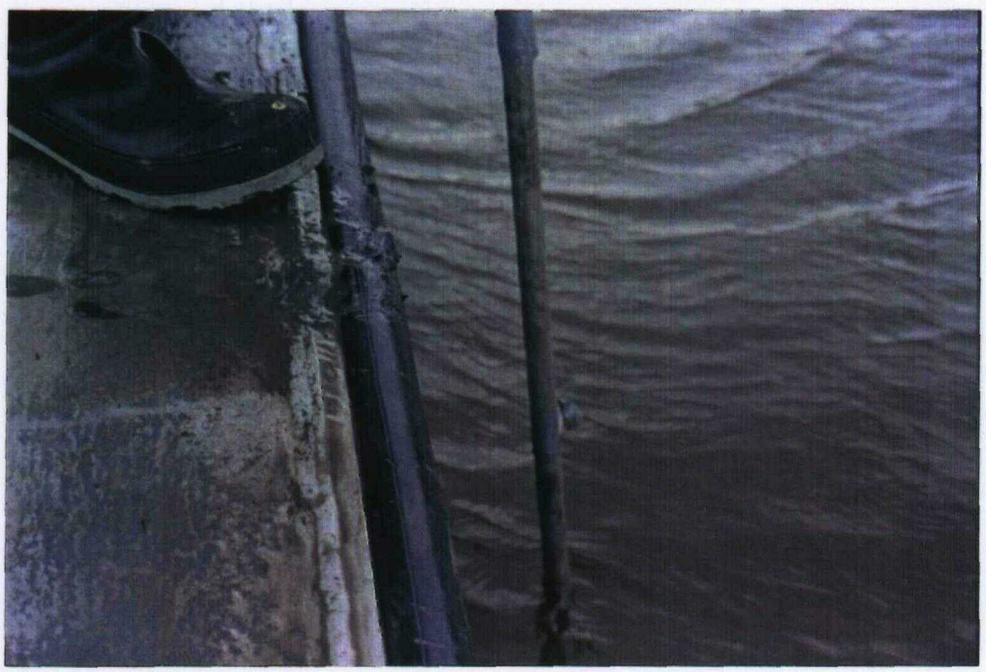
Roll 1, Photo 6 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-15 in Carancahua Bayou.



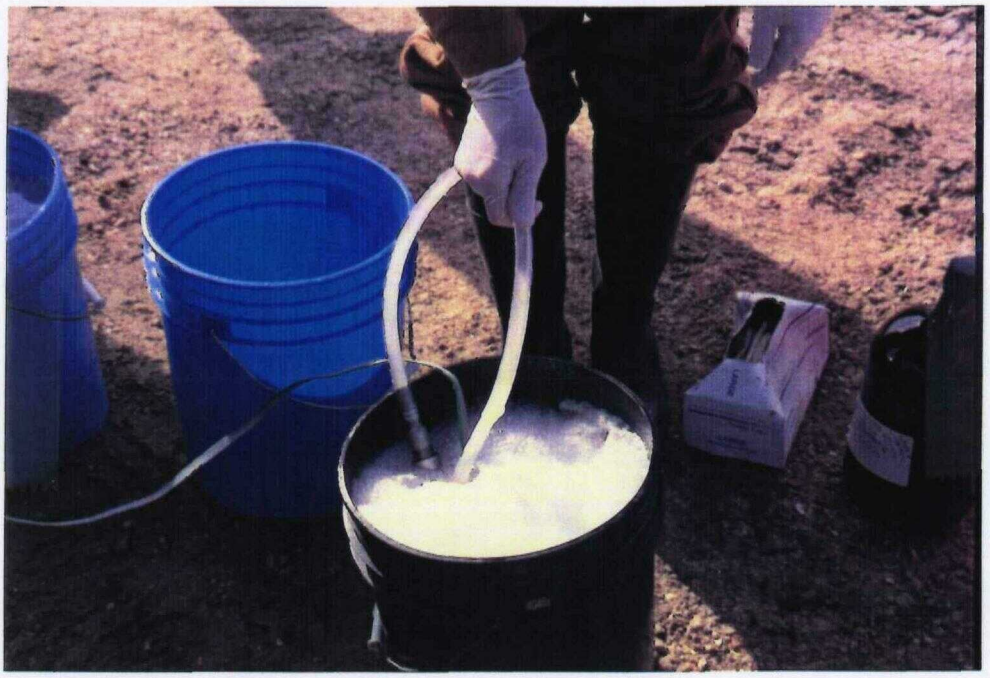
Roll 1, Photo 7 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-19 in West Galveston Bay.



Roll 1, Photo 10 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-16 in the Gulf Intracoastal Waterway.

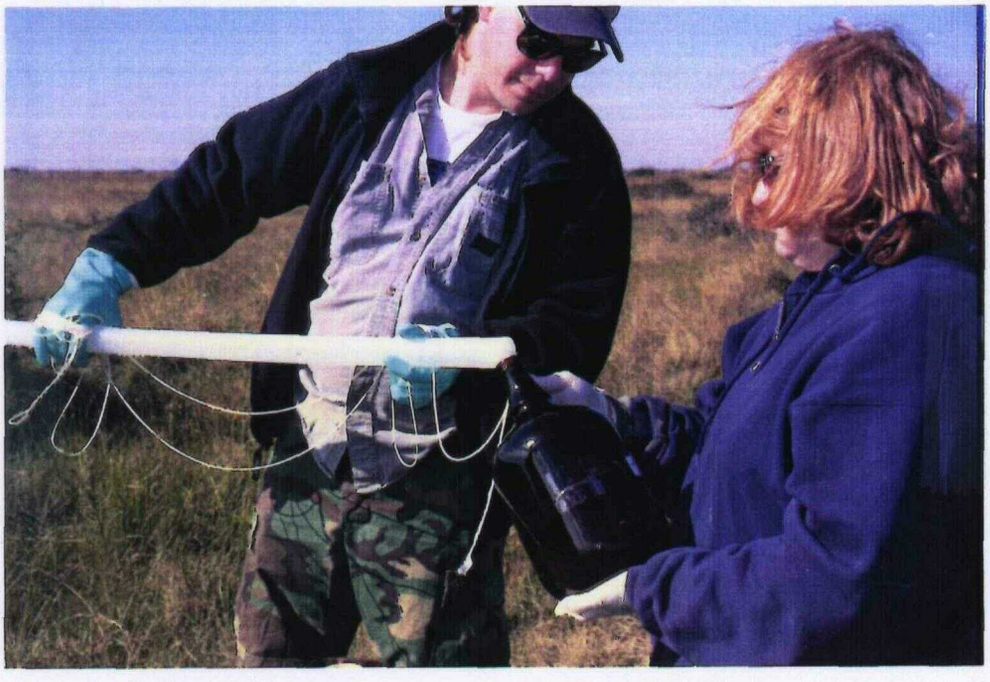


Roll 1, Photo 11 (Facing Southwest) Date: 12/9/97 Photographer: Stephanie Pogue
Collection of sample SE-09 in MIMC barge canal.

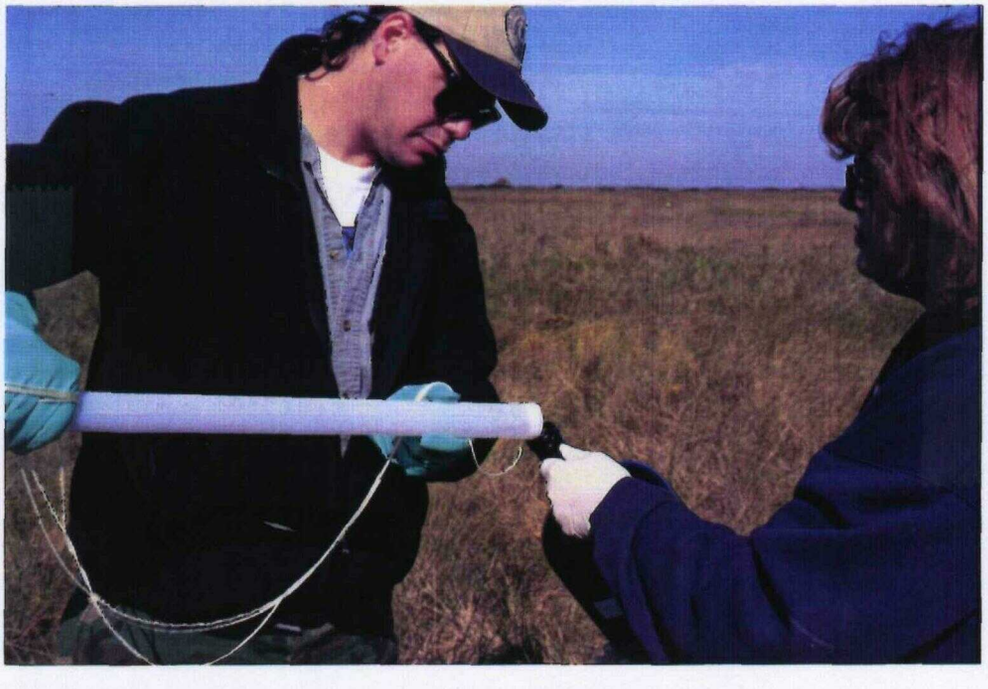


Roll 1, Photo 12 (Facing South) Date: 12/10/97 Photographer: Marshall Cedilote
Decontamination of pump used to purge ground water wells.

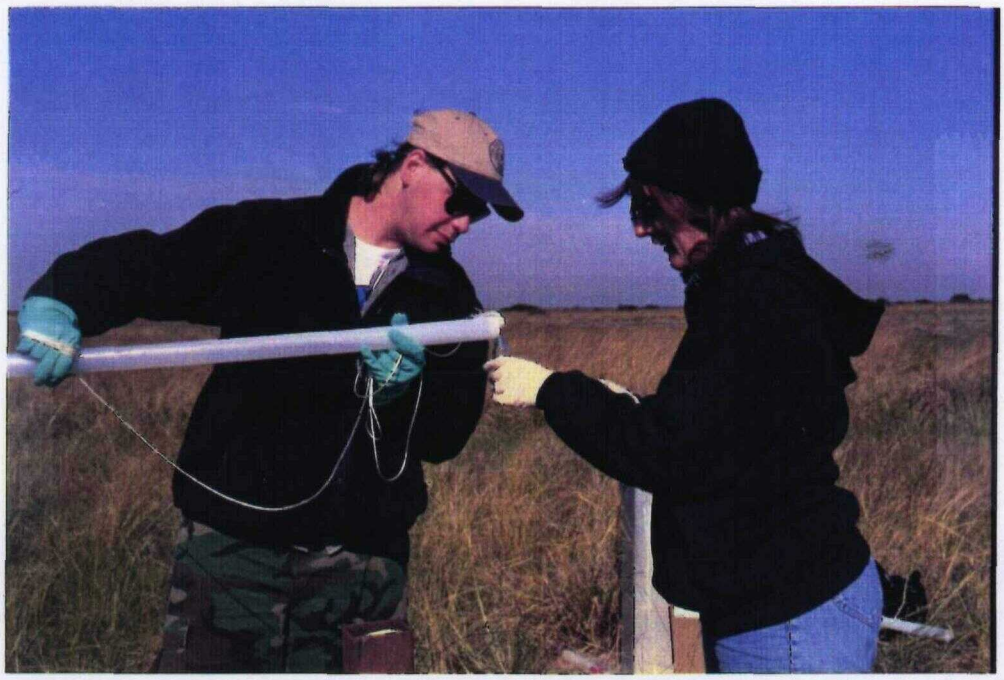
Roll 1, Photo 13 (Facing South) Date: 12/10/97 Photographer: Catriona Smith
Collection of rinsate sample ER-03 (VOAs).



Roll 1, Photo 14 (Facing North) Date: 12/10/97 Photographer: Catriona Smith
Collection of sample GW-01.



Roll 1, Photo 15 (Facing North) Date: 12/10/97 Photographer: Catriona Smith
Collection of sample GW-02.



Roll 1, Photo 16 (Facing North) Date: 12/10/97 Photographer: Stephanie Pogue
Collection of sample GW-03.

Roll 1, Photo 17 (Facing East) Date: 12/10/97 Photographer: Don Flory (MIMC)
Collection of sample GW-06.

Roll 1, Photo 18 (Facing Southeast) Date: 12/10/97 Photographer: Don Flory (MIMC)
Collection of sample GW-07.

Roll 1, Photo 19 (Facing Southwest) Date: 12/10/97 Photographer: Johnny Kennedy
Collection of sample GW-04 and GW-05 (field duplicates).

Roll 1, Photo 20 (Facing South) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-04 inside Impoundment #4A.

Roll 1, Photo 21 (Facing North) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-06 inside Impoundment #4.

Roll 1, Photo 22 (Facing South) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-05 inside Impoundment #8.

Roll 1, Photo 23 (Facing East) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-07 inside Impoundment #10.

Roll 1, Photo 24 (Facing South) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-11 and SE-12 (field duplicates) at NPDES outfall.

Roll 2, Photo 1 (Facing South) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-08 at end terminus of MIMC barge canal.

Roll 2, Photo 2 (Facing West) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-13 in Carancahua Lake.

Roll 2, Photo 3 (Facing West) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-14 in Carancahua Lake.

Roll 2, Photo 4 (Facing South) Date: 12/11/97 Photographer: Marshall Cedilote
Collection of sample SE-01 (background).

APPENDIX B

TNRCC File Information

NOTICE: This per. includes minor revisions made in accordance with the Regional Administrator's determination. Please retain this permit as your official copy.

Permit No. TX0004910
Application No. TX076-0YV-2-000242

RECEIVED
AUG 23 1990

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et. seq; the "Act"),

McGinnes Industrial Maintenance Corporation.
5619 Griggs Road
Houston, Texas 77021

is authorized to discharge from a facility located at

Galveston County, Texas

to receiving waters named

Intracoastal Waterway

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on April 30, 1976

This permit and the authorization to discharge shall expire at midnight, April 29, 1981

Signed this 30th day of March 1976

George Putnicki
For Regional Administrator

00001

A-1 **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

During the period beginning effective date and lasting through expiration date
the permittee is authorized to discharge from outfall(s) serial number(s) 001

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day)		Discharge Limitations Other Units (Specify)		Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
	Daily Avg	Daily Max	Daily Avg	Daily Max		
Flow—m^3/Day (MGD)	N/A	N/A	N/A	N/A	Continuous*	Record
Total Suspended Solids	N/A	N/A	60 mg/l	90 mg/l	1/day*	Grab
Biochemical Oxygen Demand (5-day)	N/A	N/A	25 mg/l	40 mg/l	1/day*	Grab
Chemical Oxygen Demand	N/A	N/A	200 mg/l	300 mg/l	1/day*	Grab
Free or Floating Oil	N/A	N/A	None	None	1/day*	Grab

*When discharging

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day, grab*

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
At outfall 001.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Report of Progress on Study for Hurricane Protection for the existing and future dikes at McGuiness	3-1-76
Report on Completion of Study	6-1-76
Report on Construction	12-1-76
Report on Completion of Construction	6-1-77

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

C. MONITORING AND REPORTING

1. *Representative Sampling*

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. *Reporting*

Monitoring results obtained during the previous 3 months shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on July 28, 1976 . Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and the State at the following addresses:

Regional Administrator
Environmental Protection Agency
Region VI
1600 Patterson, Suite 1100
Dallas, Texas 75201

Mr. Hugh C. Yantis, Jr.
Executive Director
Texas Water Quality Board
P. O. Box 13246
Austin, Texas 78711

3. *Definitions*

a. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

b. The "daily maximum" discharge means the total discharge by weight during any calendar day.

4. *Test Procedures*

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(g) of the Act, under which such procedures may be required.

5. *Recording of Results*

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person(s) who performed the analyses;

d. The analytical techniques or methods used; and

e. The results of all required analyses.

6. *Additional Monitoring by Permittee*

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (EPA No. 3320-1). Such increased frequency shall also be indicated.

7. *Records Retention*

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the State water pollution control agency.

A. MANAGEMENT REQUIREMENTS

1. *Change in Discharge*

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. *Noncompliance Notification*

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Regional Administrator and the State with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. *Facilities Operation*

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. *Adverse Impact*

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. *Bypassing*

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Regional Administrator and the State in writing of each such diversion or bypass.

6. *Removed Substances*

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

7. *Power Failures*

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such alternative power source is not in existence, and no date for its implementation appears in Part I,

b. Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

B. RESPONSIBILITIES

1. *Right of Entry*

The permittee shall allow the head of the State water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. *Transfer of Ownership or Control*

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator and the State water pollution control agency.

3. *Availability of Reports*

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public

inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

4. *Permit Modification*

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

5. *Toxic Pollutants*

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. *Civil and Criminal Liability*

Except as provided in permit conditions on "Bypassing" (Part II, A-5) and "Power Failures" (Part II, A-7), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. *Oil and Hazardous Substance Liability*

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

8. *State Laws*

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. *Property Rights*

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. *Severability*

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART III

OTHER REQUIREMENTS

1. For the purpose of Part I of this permit, the following definitions shall apply in lieu of those under "Part I, Section C, 'Monitoring and Reporting'", where limitations are expressed in concentration:

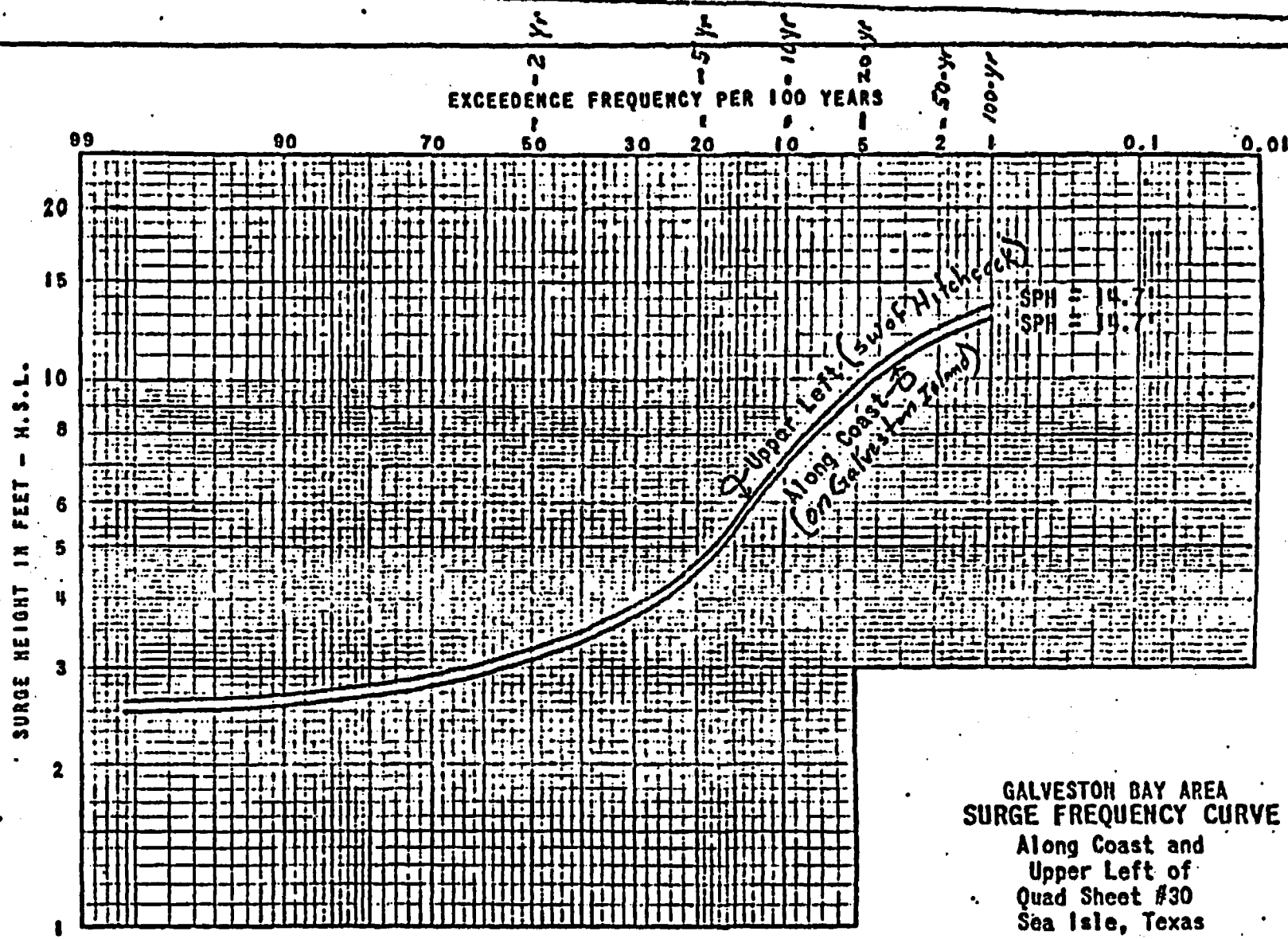
a. The "daily average" concentration means the arithmetic average (weighted by flow value) of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that calendar day.

b. The "daily maximum" concentration means the daily determination of concentration for any calendar day.

2. Existing dikes shall conform to the 50-year Hurricane Surge Frequency Criteria, as developed from Technical Memorandum No. 26, U. S. Army Corps of Engineers, Coastal Engineering Research Center (see attached graph) and Guidelines for Identifying Coastal High Hazard Zones, Galveston District Corps of Engineers, Galveston, Texas. That is, dikes shall be a minimum of 12.5 feet above mean sea level and preventative measures shall be taken to protect against over-topping from the accompanying 50-year Hurricane waves, by 7-1-77.

Permittee shall provide protection against the 100-year Hurricane Surge Frequency, for all future dike construction. The Criteria as developed from Technical Memorandum No. 26, U. S. Army Corps of Engineers, Coastal Engineering Research Center (see attached graph) and Guidelines for Identifying Coastal High Hazard Zones, Galveston District Corps of Engineers, Galveston, Texas, for the 100-year Hurricane Surge Frequency, is as follows: Dikes shall be 14 feet above mean sea level and preventative measures shall be taken to protect against over-topping from the accompanying storm waves.

Nothing in this permit shall be construed to authorize the construction of any levees, dikes, or other structures in waters of the United States as defined by 33 CFR 209.120.



GALVESTON BAY AREA
SURGE FREQUENCY CURVE
Along Coast and
Upper Left of
Quad Sheet #30
Sea Isle, Texas

Page 11 of 11
Permit No. TX0004910

00011

McGinnes Industrial Maintenance Corporation

5837 Northdale, Houston, Texas 77087

U. S. Corps of Engineers
P. O. Box 1229
Galveston, Texas 77550

Attention: Mr. Earl Mills

Re: McGinnes Sludge Pits
Hall's Bayou Ranch

Dear Sir:

This is our request for your permission to begin construction on one 5 acre storage pond adjacent to our facilities on Hall's Bayou Ranch.

Enclosed is a map showing location of the pond we urgently need to build and future barge canal to be constructed when our permit Numbered 12100 is granted.

Very truly yours,

McGINNES INDUSTRIAL MAINTENANCE

V. C. McGinnes
President

VCM:bm

Encl.

ARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1229
GALVESTON, TEXAS 77553

REPLY TO
ATTENTION OF:

SWGCO-RP

23 SEP 1977

Mr. V.C. McGinnes
McGinnes Industrial Maintenance Corporation
5837 Northdale
Houston, Texas 77087

Dear Mr. McGinnes:

This is in reference to your letter requesting a decision as to whether a Department of the Army permit would be required for the construction of a 5-acre storage pond near Carancahua Lake at Hall's Bayou Ranch.

A Department of the Army permit will not be required for the construction of any of the four proposed storage ponds shown on the drawing attached to your letter since the work is not located in navigable waters or adjacent wetlands.

Should you desire additional information or assistance relative to this matter, please contact Mr. Jim Jones at 713-763-1211, ext. 384.

Sincerely yours,

J.D. BISSELL
Acting Chief, Permit Branch

✓	VCM		OBB
	LPM		WNC
	GHL		KR
	LWZ		TO
	WHH		McK&L
	DS		CORP.
	MEM		
	RM		
	DCP		

read to VCM over phone & he requested a copy for his records.

00013

/3

LEASE

BY AND BETWEEN

HALL'S BAYOU RANCH, INC.,

AND

GULF COAST WASTE DISPOSAL AUTHORITY

This lease is made and entered into as of the 1st day of July, 1986, by and between Hall's Bayou Ranch, Inc. ("Lessor"), a Texas Corporation, and Gulf Coast Waste Disposal Authority ("Lessee"), a conservation and reclamation district, body politic and corporate, and political subdivision of the State of Texas created by and operating under the provisions of Chapter 409, Acts of the 61st Legislature of the State of Texas, Regular Session, 1969, as amended (originally compiled as Article 7621d-2 of Vernon's Texas Civil Statutes).

ARTICLE 1.

DEMISE OF LEASED PREMISES

§1.01. The Leased Premises. In consideration of the mutual covenants and agreements set forth in this lease, and other good and valuable consideration, Lessor does hereby demise and lease to Lessee, and Lessee does hereby lease from Lessor, all that certain tract or parcel of land out of the Baker Survey, A-28, the D. Buckley Survey, A-44, and the L. T. Yowell Survey, A-215, in Galveston County, Texas, containing 400 acres, more or less, more particularly described in and shown on Exhibit A attached to this lease, and being a part of that real property generally known and described as the Hall's

a part of the lea term. It is specific / understood and agreed that if Lessee exercises its right to extend this lease for such additional five-year period, Lessee shall not have the right to extend the term of this lease for any period of time beyond such lease term as thus extended. In no event shall the lease term, including such permissible five-year extension, exceed eight years, two months, and eighteen days.

§2.03. Termination. This lease shall terminate and become null and void without further notice upon the expiration of the lease term specified in §2.01 hereof or upon the expiration of the lease term as extended pursuant to the provisions of §2.02 hereof, should Lessee exercise its right to thus extend such lease term. Any holding over by Lessee after the expiration of the lease term shall not constitute a renewal of this lease or give Lessee any rights under the lease or to the leased premises. Further, should Lessee hold over after the expiration of the lease term (initial or as extended, whichever is applicable), Lessee shall become a tenant at will or at sufferage during any such hold over period and during such time shall pay to Lessor rent equal to two hundred percent of the rent in effect immediately before the expiration of the lease term.

ARTICLE 3.

RENT

AUG 1 1 89

§3.01. Minimum Rent. For the use and occupancy of the leased premises, Lessee agrees to pay to Lessor the following minimum calendar quarter rent for each calendar quarter of the lease term:

Bayou Ranch. Such tract or parcel of land is referred to in this lease as "the premises" or "the leased premises."

§1.02. Lessee To Have and To Hold. Unless otherwise specifically set forth herein, Lessee is to have and to hold the leased premises, together with all rights, privileges, easements, appurtenances, and immunities belonging to or in any way appertaining to the leased premises, including, but not limited to, any and all easements, rights, title, and privileges of Lessor existing now or in existence at any time during the lease term.

§1.03. No Warranty of Suitability. Lessor does not warrant suitability of the leased premises for any purpose, including the use of such premises proposed by Lessee.

ARTICLE 2.

AUG 1

LEASE TERM

§2.01. Fixed Commencement and Termination Date. This lease shall be for a term of three years, two months, and eighteen days, referred to as the "lease term," commencing on July 1, 1986, and ending on September 18, 1989, subject, however, to earlier termination as provided in this lease.

§2.02. Right to Extend. Lessee may extend this lease for a further period of five years by giving Lessor written notice of Lessee's intention to do so within the last year prior to the expiration date of the lease term, but no later than six months prior to the expiration of the lease term, under all the terms and conditions of this lease. If such option is exercised by Lessee, said five-year period shall be considered

A. Base lendar Quarter Rent. calendar quarter rent of $25.00 per acre, based on the total acreage comprising the leased premises less the acreage within such leased premises actually devoted to drill sites and easements authorized by §8.01 hereof. Such rent payments shall be due and payable quarterly in advance throughout the lease term, commencing with the calendar quarter beginning on July 1, 1986, and continuing for each calendar quarter thereafter. This amount will be known as the "base calendar quarter rent."

B. Additional Calendar Quarter Rent. A calendar quarter rent of $40,150.00 or $4.00 for each dry ton of sludge deposited in or on the leased premises by Lessee during such calendar quarter, whichever is greater. This amount will be known as the "additional calendar quarter rent." Such "dry ton of sludge" rental payments shall be made monthly on or before the twentieth day of the month following the month in which such sludge is deposited in or on the leased premises. In the event the total of such monthly payments for sludge thus deposited within any given calendar quarter is less than the minimum quarterly rental requirements set forth above, Lessee shall pay that additional sum necessary to meet the minimum additional calendar quarter rent of $40,150.00. Such additional sum, if any, shall be due and payable on or before the thirtieth day following the end of the calendar quarter to which it applies.

C. Proration of Rent. For that portion of the last calendar quarter of the lease term or of the last calendar

AUG 1

00017

quarter in which this lease is in effect, Lessee shall pay a pro-rata portion of the base calendar quarter rent and the additional calendar quarter rent prorated on a per diem basis.

§3.02. Rent Adjustments. On the anniversary date of this lease, and on the same date during each succeeding year during the lease term, the base calendar quarter rent and the additional calendar quarter rent shall be increased or decreased for each of the following four calendar quarters by a percentage equal to the percentage increase or decrease in the Consumer Price Index of the Bureau of Labor Statistics, United States of America Department of Labor, for all Urban Consumers, all items index, for the preceding twelve-month period. Should this economic indicator be discontinued or altered during the lease term, the remaining rental adjustments will be calculated using a statistical indicator of the Bureau of Labor Statistics, United States of America Department of Labor, that is most nearly comparable.

§3.03. Statement of Number of Dry Tons of Sludge. On or before the date set for the payment of the additional calendar quarter rent, Lessee must furnish Lessor with a true and correct statement, signed by an authorized representative of Lessee, showing the total number of dry tons of sludge disposed of in or on the leased premises during such calendar quarter.

§3.04. Books and Records of Lessee. Lessee shall maintain books and records throughout the lease term reflecting by day, week, or month the number of dry tons of sludge disposed of in or on the leased premises. Lessor shall have the right to

AUG 1

inspect and audit such books and records Lessee's office during normal business hours.

§3.05. Time and Manner of Payment. All rents due under this Article shall be paid by Lessee within the time specified in §3.01. All installments of rent shall be paid in lawful money of the United States of America.

§3.06. Additional Payments.

A. Increase in Taxes. Lessee agrees to pay to Lessor any increase in real property ad valorem taxes on the leased premises attributable solely to the value of permanent improvements placed on such leased premises by Lessee. Such payments shall be due and payable upon demand accompanied by proof that any such increase is attributable solely to the value of permanent improvements placed on the leased premises by Lessee. An affidavit to that effect executed by the Chief Appraiser of the Galveston County Appraisal District shall constitute such proof.

B. Governmental Fees, Charges, and Civil Penalties. As between Lessor and Lessee, it shall be Lessee's responsibility to pay any and all fees, charges, and civil penalties imposed against Lessor by a governmental unit or agency solely because of the use or manner of use of the leased premises by Lessee during the lease term. It is specifically understood and agreed, however, that before Lessee shall be obligated to make any such payments, Lessor must timely notify

Lessee in writing of any such fee, charge or civil penalty sought to be thus imposed on Lessor and afford Lessee the opportunity to resist the imposition thereof in any and all manners and forums, administrative or judicial, Lessee deems appropriate. Should Lessee choose not to resist the imposition of any such fee, charge, or civil penalty or, after having resisted the same, such fee, charge, or civil penalty is nonetheless imposed on Lessor, Lessee must timely pay the amount thus imposed to the appropriate governmental unit or agency for and on behalf of Lessor and provide written notice and proof of such payment to Lessor.

ARTICLE 4.

TAXES

§4.01. Personal Property Taxes. Lessee shall pay and fully discharge all taxes, special assignments, and governmental charges of every character lawfully imposed during the lease term on the furniture, equipment, and other personal property owned by Lessee and placed by it in, on, or about the leased premises.

§4.02. Real Property Taxes and Assessments. Lessor shall pay and fully discharge all real property taxes, special assessments, and governmental charges of every character lawfully imposed on the leased premises during the term of this lease, including any special assessments imposed on or against the premises for the construction or improvement of public works.

AUG 1

00030

ARTICLE 5.

UTILITIES

§5.01. Lessee to Pay Utility Charges. Lessee shall pay or cause to be paid all charges for water, heat, gas, electricity, telephone, and all other utilities used by it or its contractors on the leased premises throughout the term of this lease, including any connection fees.

ARTICLE 6.

PRIOR USE OF PREMISES

§6.01. Prior Use for Sludge Disposal. For the past several years under appropriate written or oral agreements by and between Lessee and McGinnes Industrial Maintenance Corporation ("MIMC"), MIMC has transported for disposal and has disposed of nonhazardous wastewater treatment sludge material from Lessee's Washburn Tunnel Regional Treatment Plant ("Washburn Tunnel Facility") located on North Richey Street in Pasadena, Texas, and adjoining the south bank of the Houston Ship Channel. During such time and by agreement with and permission of Hall's Bayou Ranch, Inc., MIMC disposed of such sludge material in or on a substantial portion of that tract of land described herein as the leased premises.

§6.02. Representations of MIMC. MIMC has represented to Lessor and Lessee that during all of such period and now it held and now holds all necessary regulatory permits, licenses, and authorizations required to dispose of such sludge materials at such site. More specifically, MIMC represents to Lessor and Lessee that it now holds Texas Water Commission Permit No.

01221, ("MIMC Permit") approved and issued on September 18, 1984, and effective for a period of five years from and after such date, and that under the provisons of such permit and the authorizations, interpretations, and representations of the Texas Water Commission MIMC is authorized to dispose of nonhazardous wastewater treatment sludges generated at the Washburn Tunnel Facility at, in, and on that portion of the Hall's Bayou Ranch herein described as the leased premises.

§6.03. Acceptance of MIMC Representations. Lessor and Lessee accept and rely on the representations of MIMC described in §6.02 hereof and, insofar as the provisions of this lease are concerned, specifically agree that the MIMC Permit consitutes full authorization for MIMC to dispose of any and all nonhazardous sludge generated at the Washburn Tunnel Facility in or on the leased premises.

§6.04. Lessee May Contract with MIMC for Sludge Disposal. Lessor and Lessee acknowledge that by agreement of even date herewith Lessee has contracted with MIMC to transport by barge or other suitable carrier all nonhazardous sludge generated at the Washburn Tunnel Facility to the leased premises and to dispose of such sludge in or on the leased premises. Lessor and Lessee further understand and agree such Agreement between Lessee and MIMC is for the same term as this lease and, at Lessee's option, may be extended for a term identical with the lease term as extended of this lease.

§6.05. Prior Use and Condition. Lessor and Lessee agree that by executing this lease Lessee does not thereby assume any

AUG 1

responsibility or ability to Lessor or other party for any prior use or for the condition of the leased premises on the effective date of this lease and Lessor does not thereby waive any claim or cause of action it may have against Lessee or any other party for any prior use or for the condition of the leased premises on the effective date of this lease.

ARTICLE 7.

USE OF PREMISES

§7.01. Primary Purpose. Lessee shall have the right to use the leased premises as a disposal site for nonhazardous sludge resulting from the treatment of wastewater.

§7.02. Standard of Operations. In the conduct of its sludge disposal operation on the leased premises, Lessee covenants and agrees that it shall use commonly accepted techniques and practices for the disposal of sludge and agrees to abide by all federal, state, and local laws, rules, and regulations applicable to such operations. It is specifically understood and agreed, however, that on the effective date of this lease the MIMC Permit constitutes full authorization for the disposal of nonhazardous sludge in or on the leased premises and that disposal of such sludge in or on such leased premises by MIMC under and in conformity with the MIMC Permit constitutes compliance, within the contemplation of the provisions of this lease, with all federal, state, and local laws, rules, and regulations relating to the authority to dispose of nonhazardous sludge.

§7.03. Types of Use. Lessee may use all or any portion of the leased premises for sludge disposal ponds or pits, landfills, injection wells, landfarming, or other sludge disposal processes. It is specifically agreed that any or all of such uses shall not be considered an unreasonable obstacle to oil, gas, or other mineral exploration, development, and operations; provided, however, a lessee under an oil, gas, or other mineral lease may be required to construct pads or extra footings as required to support wells and other equipment and installations because of the sludge disposal operations of Lessee on such leased premises.

§7.04. Specific Authority and Responsibility of Lessee. In addition to and without limiting the generality of the foregoing, Lessee shall have the following specific authority and responsibility:

A. Lessee or Its Contractor May Conduct Operation. Lessee may conduct the sludge disposal operation on the leased premises independently or may contract with MIMC or any other qualified and experienced entity or person to conduct such operation. As between Lessor and Lessee, Lessee shall be responsible for conducting and maintaining its sludge disposal operation in compliance with the provisions of this lease and the MIMC Permit or other permit under which such operation may be conducted.

B. Lessee's Right to Fence Leased Premises. At its cost and expense, Lessee shall have the right, but not the obligation, to construct and maintain a fence around all or a

portion of the .sed premises. No st fence shall be constructed or maintained in a manner which will prevent Lessor from having reasonable access to property owned by Lessor and adjoining the leased premises.

C. Lessor's Use of Adjoining Property. Lessee's operations on the leased premises shall not unreasonably interfere with Lessor's operations on adjoining land owned by Lessor.

D. No Hazardous Waste. Lessee shall not dispose of or contract for the disposal of hazardous sludge or waste on the leased premises.

E. Lessee's Use of Barge Canal. Lessee and its contractors shall have the right of preferential use of the barge canal adjacent to the leased premises; said barge canal is shown on the map or plat attached hereto as Exhibit B. Lessee agrees that it will not unreasonably interfere with the use of such barge canal by other authorized users of the same or with the extension of such canal by Lessor or its contractors. Any expense incident to extension of the barge canal by Lessor, or by others possessed of an interest in such canal through or under Lessor, shall be borne by Lessor or such others and shall not be the responsibility of Lessee or shall the cost of such extension be borne by Lessee.

F. Lessee's Right to Improve Leased Premises. Subject to existing rights, if any, of third parties, Lessee shall have the right to construct, alter, improve, or remove all necessary docks, levees, dikes, ditches, roads, pipelines,

AUG 1

and other facil es and improvements d to otherwise physically manage the leased premises in any manner consistent with the requirements of Lessee in the conduct of its sludge disposal operations on the leased premises.

G. Lessee's Maintenance and Improvement of the Barge Canal. At its cost and expense and to the extent necessary or convenient to its sludge disposal operations, Lessee shall have the right to repair, alter, expand, deepen, redirect, or otherwise improve the barge canal and turning basins adjacent to the leased premises and shown on Exhibit B attached to and made a part of this lease. Lessee shall not be required to give Lessor notice of regular and customary maintenance of such barge canal or turning basins. However, Lessee agrees that no material improvement or alteration of such barge canal or turning basins will be commenced by Lessee until plans and specifications of the proposed improvement or alteration have been first submitted to and approved by Lessor. Lessor agrees to promptly review and approve all such plans and specifications, unless Lessor finds them to be unacceptable. Lessor agrees that it will not unreasonably withhold approval of such plans and specifications. In the event Lessor finds the same unacceptable, it shall notify Lessee in writing of the specific objections to such plans and specifications. Lessee agrees to reasonably accommodate any suggestions and objections made by Lessor and to respond to Lessor in writing regarding such accommodations. Any such review, written comments, or objections and written responses shall be made within thirty

days of the submission of the plans and specifications or the prior act, whichever shall apply. Failure of Lessor to provide Lessee with written objections to such plans and specifications within such thirty-day period shall constitute approval of such plans and specifications by Lessor.

H. Lessee's Use of Roads. Lessee is authorized to use all roads, existing or new, for access to the leased premises, together with all other means of access, including, but not limited to, waterways or easements, necessary or convenient to Lessee's use of the leased premises for its sludge disposal operations. Lessor and Lessee agree to pay jointly for the maintenance of any means of access used by them in common; the contribution of each toward such maintenance cost shall be based on their respectively proportionate use of such means of access.

ARTICLE 8.

MINERAL LEASES AND EASEMENTS

§8.01. Lessor's Right to Lease Mineral Estate. During the term of this lease and subject to the following conditions, Lessor shall have the right to lease all or any portion of the leased premises for mineral exploration or production, provided such leasing, exploration, or production does not interfere with Lessee's sludge disposal operations or activities on such leased premises. If it is necessary that any such mineral operations be conducted on the leased premises, Lessor shall designate drill sites and necessary easements, including pipeline corridors, to be used in such mineral operations.

AUG 1

000[illegible]

Such designated areas and the activities to be conducted thereon must not interfere with the use of the leased premises by Lessee in the conduct of its sludge disposal operations and related activities.

§8.02. Lessee's Prior Approval of Mineral Leases. Prior to execution of any mineral lease by Lessor encompassing all or any portion of the leased premises, such proposed lease shall be submitted to Lessee for its approval regarding the size and location of drill sites, the routes of ingress and egress, the size and location of pipeline corridors, and provisions for surface damage restoration. Any such lease submitted to Lessee for approval shall be deemed approved by Lessee if Lessee fails to respond to Lessor in writing within twenty days after such lease is submitted to Lessee for approval. If Lessee objects to such lease regarding the matters set forth above which are subject to its approval, Lessee shall submit to Lessor such reasonable provisions with respect to such matters which, if included in such lease, would make the same acceptable to Lessee. In such event, Lessor agrees to include such provisions in such lease and to otherwise accommodate Lessee's reasonable requests or objections.

§8.03. Lessee's Right to Use Easements. Lessor agrees that Lessee, without cost to Lessee, shall have the right to use any and all existing and future roadways and roadway easements across Lessor's property adjoining and surrounding the leased premises as a means of ingress and egress to the leased premises for personnel visiting the leased premises for

AUG 1 1 89

work or inspection, and for the transportation of construction materials and equipment to or from the leased premises. It is specifically understood and agreed, however, that Lessee shall not have the right to use such roadways or roadway easements for the purpose of transporting sludge to or from the leased premises.

ARTICLE 9.

REMOVAL OF IMPROVEMENTS

§9.01. Lessee's Right to Remove Improvements. At the end of the lease term, or sooner if this lease is otherwise terminated pursuant to the provisions in this lease, Lessee shall be permitted to remove from the leased premises all additions and improvements made by Lessee on or to the leased premises; provided, however, such removal must be effected without material injury to the leased premises. Lessee shall be permitted to remove such additions and improvements at any time during the first sixty days following the effective date of the termination of this lease.

§9.02. Conditions of the Leased Premises. Lessor agrees that at the conclusion of the lease term Lessor will accept the leased premises in a condition that is consistent with the use of such premises for sludge disposal purposes. Lessee agrees that any additions or improvements removed by it will be accomplished in a careful and workmanlike manner and to otherwise conclude its sludge disposal operations in such manner.

AUG 1 1

ARTICLE 10.

CONDEMNATION

§10.01. Interests of Parties. In the event the leased premises or any part of the leased premises are taken for public or quasi-public purposes by condemnation as a result of any action or proceeding in eminent domain, or are transferred in lieu of condemnation to any authority entitled to exercise the power of eminent domain, the interests of Lessor and Lessee in the award or consideration for the transfer and the effect of the taking or transfer on this lease shall be as provided by this Article.

§10.02. Total Taking - Termination. If the entire leased premises are taken or transferred as described in §10.01 hereof, this lease and all of the rights, title, and interest under this lease shall cease on the date title to the premises or part of the premises vests in the condemning authority. Lessor and Lessee shall each be entitled to receive and retain such separate awards and portions of lump sum awards as may be allocated to their respective interests in any condemnation proceeding. The termination of this lease shall not affect the rights of the respective parties to such awards.

§10.03. Partial Taking - Termination. If only part of the leased premises is taken or transferred as described in §10.01, this lease shall terminate if, in Lessee's opinion, the remainder of the premises is in such location, or in such form, shape, or reduced size, that Lessee's sludge disposal operation cannot be effectively and practically conducted on the

AUG

000030

remaining premises. In that event this lease and all rights, title, and interest under this lease shall cease on the date title to the portion of the premises taken or transferred vests in the condemning authority. Lessor and Lessee shall each be entitled to receive and retain such separate awards and portions of lump sum awards as may be allocated to their respective interests in such condemnation proceedings. The termination of this lease shall not affect the rights of the respective parties to such awards.

§10.04. Partial Taking - Continuation With Rent Abatement. If part of the leased premises is taken or transferred as described in §10.01 and, in Lessee's opinion, the remainder of the premises is in such location and in such form, shape, or size that Lessee's sludge disposal operation can be effectively and practically conducted on the remaining premises, this lease shall terminate as to the portion of the premises taken or transferred as of the date title to such portion vests in the condemning authority, but shall continue in full force and effect as to the portion of the leased premises not taken or transferred. From and after that date, the base calendar quarter rent required to be paid by Lessee to Lessor shall be reduced during the unexpired portion of this lease to that proportion of such rent which the size of the part of the leased premises not so taken bears to the size of the total of the leased premises prior to such taking. Lessor and Lessee shall each be entitled to receive and retain such separate awards and portions of lump sum awards as may be

AUG 1

00051

allocated to their respective interests in such condemnation proceedings.

§10.05. Voluntary Conveyance. Nothing in this Article prohibits Lessor from voluntarily conveying all or part of the leased premises to a public authority, agency, or utility under threat of a taking under the power of eminent domain. However, any such voluntary conveyance shall be treated as a taking within the meaning of this Article, and Lessor and Lessee shall each be entitled to receive and retain such portion of the total consideration paid as would properly be allocated to their respective interests in an actual taking.

ARTICLE 11.

LOSS OF PROPERTY AND INDEMNIFICATION

§11.01. Loss of Property of Lessee. During the term of this lease, if any property of Lessee in or on the leased premises is destroyed or damaged by water, fire, storm, flood, or any other similar or dissimilar act of God, or by any other means or by any person or entity, no part of such loss or damage shall be paid by Lessor or shall Lessor be liable therefor unless such loss or damage is the result of the negligent acts or omissions of Lessor, its officers, agents, or employees. The provisions of this Section are not intended to and do not exempt any third parties, including independent contractors, from liability for any of their negligent acts or omissions which result in or cause damage to Lessee's property or which cause injury or damage to the person or property of others.

§11.02. Indemnification of Lessor. Lessor shall not be liable for any loss, damage, or injury of any kind or character to any person or property arising from any use of the leased premises by Lessee; or caused by any defect in any structure, improvement, equipment, or facility owned by Lessee and situated on the leased premises; or caused by or arising from any negligent act or omission of Lessee or its officers, agents, or employees; or occasioned by the failure of Lessee to maintain the premises in a safe condition consistent with and considering their use as a sludge disposal site. Lessee waives all claims and demands on its behalf against Lessor for any such loss, damage, or injury occurring during the term of this lease and agrees to indemnify and hold Lessor free and harmless for any such loss, damage, or injury.

§11.03. Indemnification of Lessee. Lessee shall not be liable for any loss, damage, or injury of any kind or character to any person or property arising from any use of the leased premises by Lessor or its lessees of mineral estates in, on, or under all or any portion of the leased premises; or caused by any defect in any structure, improvement, equipment, or facility owned by Lessor or such other lessees and situated on or under the leased premises; or caused by or arising from any negligent act or omission of Lessor or its officers, agents, or employees or of such other lessees or their officers, agents, or employees; or occasioned by the failure of such other lessees to maintain those portions of the leased premises used by them in a safe condition. Lessor waives all claims and

AUG 1 1

000 3

demands on its beh. . against Lessee for an ich loss, damage, or injury occurring during the term of this lease and agrees to indemnify and hold Lessee free and harmless for any such loss, damage, or injury.

ARTICLE 12.

DEFAULT AND REMEDIES

§12.01 Termination on Default. Should Lessee default in the performance of any covenant, condition, or agreement in this lease, other than the payment of rent, and not correct such default within ninety days after written notice from Lessor to Lessee identifying such default, Lessor shall have the right to declare this lease, and all rights and interests created by it, to be terminated. Should Lessor elect to terminate for uncorrected default, this lease shall cease and come to an end as if the date of Lessor's election to terminate were the date originally fixed in this lease for its expiration. Alternatively, either Lessor or Lessee shall have the right to enforce specific performance of each and every term, covenant, and condition of this lease in any court of competent jurisdiction.

§12.02 Termination for Nonpayment of Rent. Should Lessee default in the payment of any rent or any other sums of money provided for herein to be paid under any of the terms or provisions hereof, and if such default shall continue for fifteen days after the date of written notice by Lessor to Lessee that such rent or other sums are due and payable, then Lessor, without notice or demand to Lessee, may cancel this

AUG 1

000

lease and resume possession of the leased premises or Lessor may exercise any other remedy it may have under the laws of the State of Texas then in force and recognized regulating the rights of parties in such matters.

ARTICLE 13.

LESSEE'S OPTION TO TERMINATE LEASE

§13.01. Denial of Use of Intracoastal Waterway. In the event either Lessee or its contractor are denied the use of the Houston Ship Channel, the Gulf Coast Intracoastal Waterway, or any other waterway providing reasonably direct access to the barge canal (referred to in §7.04, paragraph E hereof, and shown on Exhibit B attached to and made a part of this lease) as a means of transporting sludge by barge or other vessel from the Washburn Tunnel Facility to the leased premises, Lessee shall have the right to terminate this lease by giving written notice of such termination to Lessor. As used herein, denial of each use means an official act of the federal, state, or a local government or agency prohibiting use of any such waterway by Lessee or its contractors for the purpose specified for a period of at least thirty consecutive calendar days. In the event such use of any or all such waterways is thus denied and Lessee exercises its right to terminate this lease, this lease shall cease and come to an end as if the date of Lessee's election to terminate were the date originally fixed in this lease for its termination and all rental obligations of Lessee under this lease shall cease and terminate from and after such date.

AUG 1 1

§13.02. Default by MIMC. In the event MIMC defaults in its contractual obligation to transport or dispose of the sludge generated at Lessee's Washburn Tunnel Facility, Lessee shall have the right to terminate this lease by giving Lessor written notice of such termination. As used herein, default by MIMC in meeting such contractual obligations shall mean the failure, refusal, or inability of MIMC to perform either of such obligations (transportation or disposal of sludge) for a period of at least thirty consecutive calendar days. In the event such default occurs and Lessee exercises its right to terminate this lease, this lease shall cease and come to an end as if the date of Lessee's election to terminate were the date originally fixed in this lease for its termination and all rental obligations of Lessee under this lease shall cease and terminate from and after such date.

§13.03. Governmental Action. In the event either Lessee or its contractor is precluded or prevented from either transporting sludge to the leased premises or disposing of such sludge in or on such leased premises by act of an appropriate governmental authority or agency, federal, state, or local, by order, denial of necessary permits, revocation of necessary permits, penalty, judicial order, or otherwise, Lessee shall have the right to terminate this lease by giving written notice of such termination to Lessor. In the event Lessee thus exercises its right to terminate this lease such lease shall cease and come to an end as if the date of Lessee's election to terminate were the date originally fixed in this lease for its

AUG 1 1

termination and all rental obligations of Lessee under this lease shall cease and terminate from and after such date.

ARTICLE 14.

LESSOR'S WARRANTIES AND COVENANTS

§14.01 Warranty of Title. Lessor hereby represents and warrants that it is the owner in fee simple absolute of the leased premises, subject only to those covenants, conditions, restrictions, easements, and other matters reflected in that certain title report attached hereto as Exhibit C and made a part hereof for all purposes.

§14.02 Warranty of Quiet Enjoyment. Lessor covenants and agrees that as long as Lessee pays the rent and other charges as provided in this lease and observes and keeps the covenants, conditions, and terms of this lease, Lessee shall lawfully and quietly enjoy the leased premises during the term of this lease without hindrance or molestation by Lessor or any person claiming under Lessor, except such portion of the leased premises, if any, as shall be taken under the power of eminent domain and except for such mineral leases as may be entered into by Lessor as authorized by and subject to the provisions set forth in Article 8 of this lease.

ARTICLE 15.

RIGHT OF FIRST REFUSAL

§15.01. Lessee's Right of First Refusal. In the event Lessor receives from a third party at any time during the term of this lease or any extension or renewal thereof a bona fide offer to purchase all or any portion of the leased premises,

AUG 1 1

000[illegible]

either separately or as a part of a larger parcel of which the leased premises are a part, and decides to sell such tract or parcel of land for which such offer was made for the amount specified in the offer, Lessor shall promptly give written notice to Lessee of the terms of the offer and of Lessor's willingness to sell such tract or parcel of land to Lessee for the price offered. Upon receipt of such notice, Lessee shall have the option and privilege of purchasing such tract or parcel of land at the stated price, and must notify Lessor in writing within sixty days after the date Lessee receives notice from Lessor whether Lessee will purchase such tract or parcel of land for the amount specified in the offer. In the event Lessee elects not to purchase the property described in such offer within the specified sixty-day period at the price specified by the third party's offer, Lessor may thereafter sell such premises to the party making such offer at the price specified therein, subject to Lessee's continuation of the leasehold estate granted by this lease. If for any reason the premises are not sold to such third party, notice of any subsequent bona fide offers acceptable to Lessor must be given to Lessee upon the same terms and conditions for acceptance or refusal as provided in this lease.

ARTICLE 16.

GENERAL PROTECTIVE PROVISIONS

§16.01. Right of Entry and Inspections. Lessee shall permit Lessor's agents, representatives, or employees to enter on the leased premises for the purpose of inspection,

AUG 1 1

000[illegible]

determining whether Lessee is in compliance with the terms of this lease, maintaining, repairing, or altering the premises, or showing the leased premises to prospective purchasers, lessees, mortgagees, or beneficiaries under trust deeds.

§16.02. No Partnership or Joint Venture. The relationship between Lessor and Lessee at all times shall remain solely that of landlord and tenant and not be deemed a partnership or joint venture.

§16.03. Force Majeure. It is expressly understood and agreed that if the delivery of nonhazardous sludge to the leased premises or the disposal of such sludge in or on the leased premises or the curing of any default, other than the payment of rent, or the performance of any other covenant, agreement, obligation, or understanding contained in this lease is delayed, forbidden, or made impossible by reason of war, civil commotion, strike, act of God, governmental restrictions, requlations, or interference, court order, fire or casualty, or any other circumstance beyond Lessee's control or beyond the control of the party, including Lessee's contractors, obligated or permitted under the terms of this lease to perform such activities, regardless of whether any such circumstance is similar to any of those enumerated or not, each party so delayed shall be excused from doing or performing the same during the period of delay. It is specifically understood and agreed that during any such period Lessee's obligation to make payments of base calendar quarter rent will continue; however, Lessee's obligation to make payments of additional calendar

RECEIVED
AUG 1 1 '89

quarter rent will be abated and excused. It is further understood and agreed that Lessee's rights and privileges under this Article are alternative and cumulative of its rights and privileges under Article 13 of this lease.

§16.04. No Termination on Bankruptcy. Neither bankruptcy, insolvency, assignment for the benefit of creditors nor the appointment of a receiver shall affect this lease as long as Lessor and Lessee or their respective successors or legal representatives continue to perform all covenants of this lease.

§16.05. No Waiver. No waiver by either party of any default or breach of any covenant, condition, or stipulation contained in this lease shall be treated as a waiver of any subsequent default or breach of the same or any other covenant, condition, or stipulation of this lease.

ARTICLE 17.

MISCELLANEOUS

§17.01. Delivery of Rents and Notices. All rents or other sums, notices, demands, or requests from one party to the other shall be personally delivered or sent by mail, certified or registered, postage prepaid, to the other party at the address stated in this Section for such party or at such address as one party may request in writing of the other party and shall be deemed to have been given at the time of personal delivery or at the time of mailing.

LESSOR: Hall's Bayou Ranch, Inc.
P. O. Box 672
Alvin, Texas 77511
Attn: Mr. Virgil G. McGinnes

RECEIVED
AUG 11 89

00040

(with a copy to): Sullivan, King & Sabom
P. O. Box 2482
Houston, Texas 77252
Attn: Mr. John J. King

LESSEE: Gulf Coast Waste Disposal Authority
910 Bay Area Boulevard
Houston, Texas 77058
Attn: Mr. L.Jack Davis

(with a copy to): Olson & Olson
MCorp Plaza, Suite 3485
Houston, Texas 77002
Attn: Mr. William A. Olson

§17.02. Parties Bound. This lease shall be binding upon and inure to the benefit of the parties to the lease and their respective legal representatives, successors, and assigns.

§17.03. Texas Law to Apply. This lease shall be construed under and in accordance with the laws of the State of Texas.

§17.04. Amendment. No amendment, modification, or alteration of the terms of this lease shall be binding unless it is in writing, dated subsequent to the date of this lease, and duly executed by the parties to this lease.

§17.05. Headings of Articles and Sections. All headings of the Articles and Sections of this lease have been inserted for convenience of reference only, are not to be considered a part of this lease, and shall in no way affect the interpretation of any of the provisions of this lease.

§17.06. Severability. The provisions of this lease are severable and if any word, phrase, clause, sentence, paragraph, section, or other part of this lease or the application thereof to any person or circumstance shall ever be held by any court of competent jurisdiction to be invalid or unconstitutional for

AUG 1 1 00041

any reason, the remainder of this lease and the application of such word, phrase, clause, sentence, paragraph, section, or other part of this lease to other persons or circumstances shall not be affected thereby.

IN WITNESS WHEREOF, the parties hereto have signed this lease in duplicate originals as of the date and year first written above.

LESSOR

HALL'S BAYOU RANCH, INC.

By:_____

Its_____

ATTEST:

_____

LESSEE

GULF COAST WASTE DISPOSAL AUTHORITY

By:_____

Its_____

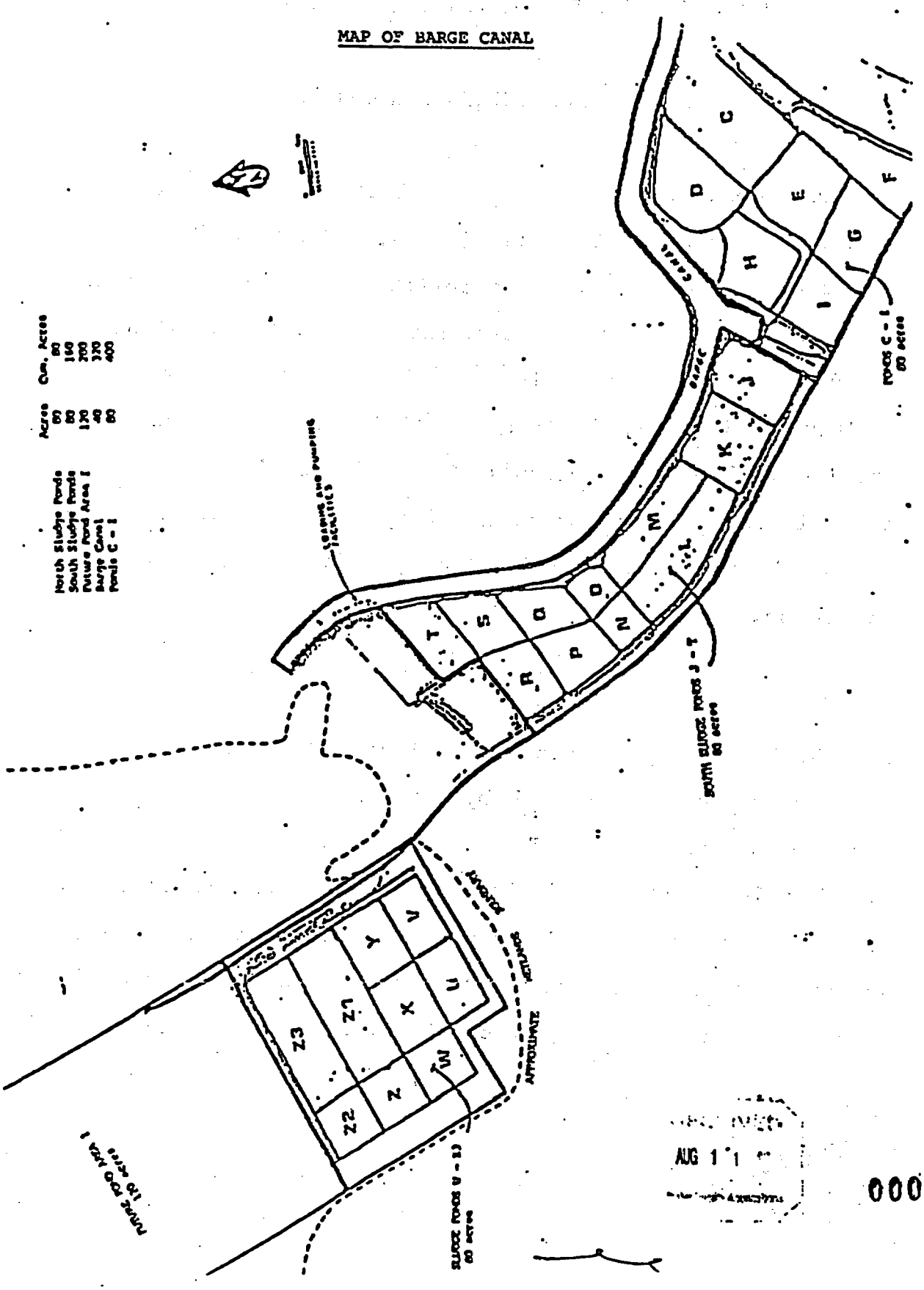
ATTEST:

_____

AUG 1 1

AGREEMENT BY AND BETWEEN
MCGINNE. INDUSTRIAL MAINTENANCE CO. CATION
AND
GULF COAST WASTE DISPOSAL AUTHORITY
DATED JULY 1, 1986

MAP OF BARGE CANAL



AGREEMENT

BY AND BETWEEN

GULF COAST WASTE DISPOSAL AUTHORITY

AND

MCGINNES INDUSTRIAL MAINTENANCE CORPORATION

This Agreement is made and entered into as of July 1, 1986, by and between Gulf Coast Waste Disposal Authority ("GCA"), a body politic and corporate and a political subdivision of the State of Texas created by and operating under the provisions of Chapter 409, Acts of the 61st Legislature of the State of Texas, Regular Session, 1969, as amended (originally compiled as Article 7621d-2 of Vernon's Texas Civil Statutes), and McGinnes Industrial Maintenance Corporation ("MIMC"), a corporation duly organized and existing under the laws of the State of Texas.

W I T N E S S E T H:

Recitals

1. GCA is a conservation and reclamation district created pursuant to authority granted by Article XVI, §59, of the Constitution of the State of Texas and as such and by virtue of its enabling legislation and the general laws of the State of Texas is duly authorized and empowered to contract with public and private entities regarding the treatment and disposal, either or both, of wastes of municipal and industrial origin.

RECEIVED
AUG 11

2. MIMC has the authority, experience, equipment, and capability to transport and dispose of sludge materials from wastewater treatment facilities.

3. For the past several years under appropriate written or oral agreements between GCA and MIMC, MIMC has transported for disposal and has disposed of wastewater treatment sludge from GCA's Washburn Tunnel Regional Wastewater Treatment Plant ("Washburn Tunnel Facility") located on North Richey Street in Pasadena, Texas, and adjoining the south bank of the Houston Ship Channel. During such time, MIMC disposed of such sludge on a portion of that certain tract of land generally known and described as Hall's Bayou Ranch and situated in Galveston County, Texas.

4. MIMC represents that during all of such period it was authorized to use such portion of Hall's Bayou Ranch as a disposal site for such sludge under appropriate written or oral agreements by and between MIMC and Hall's Bayou Ranch, Inc., the owner of Hall's Bayou Ranch.

5. MIMC further represents that during all of such time and now it held and now holds all necessary regulatory permits, licenses, and authorization required to dispose of such sludge at such site. More specifically, MIMC represents to GCA and has heretofore represented to Hall's Bayou Ranch, Inc., that MIMC currently holds Texas Water Commission Permit No. 01221 ("MIMC Permit") approved and issued on September 18, 1984, and effective for a period of five years from and after such date, and that under the provisions of such permit and the

authorizations, interpretations, and representations of the Texas Water Commission MIMC is authorized to dispose of nonhazardous wastewater treatment sludges generated at the Washburn Tunnel Facility at, in, and on that portion of the Hall's Bayou Ranch herein referred to and described as the disposal site. Such representations by MIMC are of essence to this Agreement and are relied on by GCA.

6. As of July 1, 1986, the effective date of this Agreement, GCA entered into a written lease agreement with Hall's Bayou Ranch, Inc., the owner of such disposal site, and by such lease agreement leased said disposal site from Hall's Bayou Ranch, Inc., for a term of three years, two months, and eighteen days and obtained the right or option to extend such lease for an additional period of five years. Under the terms of such lease, either GCA or its contractors have the right to utilize the property leased thereby ("disposal site") as a disposal site for nonhazardous wastewater treatment sludge including, specifically, nonhazardous wastewater treatment sludge generated at the Washburn Tunnel Facility. Said disposal site (the leased premises) is all of that certain tract or parcel of land out of the Baker Survey, A-28, the D. Buckley Survey, A-44, and the L. T. Yowell Survey, A-215, in Galveston County, Texas, containing 400 acres, more or less, more particularly described in and shown on Exhibit A attached hereto and made a part hereof for all purposes, and being a part of that real property generally known and described as the Hall's Bayou Ranch.

7. MIMC acknowledges that it has received and reviewed a copy of that lease by and between Hall's Bayou Ranch, Inc., and GCA referred to in paragraph 6 above and represents to GCA that MIMC can and will conform to and comply with those provisions thereof relating to the standard of transportation and disposal of wastewater treatment sludge at, in, or on the disposal site.

AGREEMENT

For and in consideration of the premises and the mutual promises, covenants, obligations, and benefits of this Agreement, GCA and MIMC agree as follows:

ARTICLE 1.

Scope of Work

§1.01. Washburn Tunnel Facility and Disposal Site. MIMC has inspected and is familiar with the Washburn Tunnel Facility and the nature of the sludge generated or produced from its wastewater treatment activities. MIMC has also inspected and is familiar with the disposal site and agrees that it is a suitable, acceptable, and accessible site for the receipt and disposal of such sludge.

§1.02. Removal and Disposal of Sludge. MIMC agrees to remove all sludge generated at the Washburn Tunnel Facility, to transport such sludge by barge or other method acceptable to GCA to the disposal site, and to dispose of such sludge at, in, or on said disposal site. MIMC further agrees to provide all labor, supervision, materials, and equipment necessary to perform and accomplish such removal, transportation, and disposal.

FILED
AUG 11 89

ARTICLE 2.

Term

§2.01. Fixed Commencement and Termination Date. This Agreement shall be for a term of three years, two months, and eighteen days, referred to as the "base term," commencing on July 1, 1986, and ending on September 18, 1989, subject, however, to earlier termination as provided in this Agreement.

§2.02. Right to Extend. GCA may extend this Agreement for a further period of five years by giving MIMC written notice of GCA's intention to do so within the last year prior to the expiration date of the base term, but no later than three months prior to the expiration of such base term. If such right or option to extend is exercised by GCA, said five-year period shall be considered a part of the base term. It is specifically understood and agreed that if GCA exercises its right to extend this Agreement for such additional five-year period, GCA shall not have the right to extend the term of this Agreement for any period of time beyond such base term as thus extended. In no event shall the base term, including such permissable five-year extension, exceed eight years, two months, and eighteen days.

§2.03. Termination. This Agreement shall terminate and become null and void without further notice upon the expiration of the base term specified in §2.01 hereof or upon the expiration of the base term as extended pursuant to the provisions of §2.02 hereof should GCA timely exercise its right to thus extend such base term.

RECEIVED
AUG 11 89
Water Quality Application

ARTICLE 3.

The Responsibilities of MIMC

§3.01. Representations of MIMC. MIMC warrants and represents that it is currently engaged in the business of industrial waste disposal and that it has the experience, expertise, capability, personnel, equipment, facilities, and legal authorization and right to provide the sludge removal, transportation, and disposal services described herein. MIMC further warrants and represents that it is capable of providing such sludge removal, transportation, and disposal services at a rate of completion sufficient to meet the present requirements of GCA and that such services can and will be provided in a lawful, safe, and efficient manner.

§3.02. Quantity and Time Of Sludge Removal. MIMC shall be obligated to remove, transport, and properly dispose of all accumulated wastewater treatment sludge which GCA directs MIMC to remove from the Washburn Tunnel Facility during the term of this Agreement. MIMC shall remove, transport, and dispose of such accumulated sludge in such quantities and at such times as GCA may direct, consistent with the capacity of the equipment employed by MIMC for the purposes described herein and the efficient use of such equipment. MIMC specifically agrees that throughout the term of this Agreement it will provide sufficient labor, equipment, and materials to timely effect the safe, efficient, and proper removal, transportation, and disposal of sludge generated at the Washburn Tunnel Facility. In this connection, MIMC specifically acknowledges and agrees

RECEIVED
AUG 11

that the quantity of sludge currently generaterd at such Facility approximates 56,000 cubic yards per month, but that such quantity may vary materially during the term of this Agreement.

§3.03. MIMC Equipment on the Site of the Washburn Tunnel Facility. In the performance of its services hereunder, MIMC will employ the use of barges, draglines, bulldozers, trucks, and other equipment. Before moving any heavy equipment on, over, or about the Washburn Tunnel Facility or the site upon which it is located, MIMC shall give GCA reasonable notice of the type and nature of such equipment and its proposed route of movement. MIMC agrees to comply with any and all reasonable requirements of GCA with respect to the time or manner of such proposed movement. No such requirments of GCA, or MIMC's compliance therewith, or GCA's failure to impose any specific requirements shall relieve MIMC of its responsbilities with respect to such movements or of liability for any personal injury or property damage resulting therefrom or attributable thereto.

§3.04. MIMC Activities on the Site of the Washburn Tunnel Facility. At any time and from time to time, GCA or persons acting under an agreement with GCA may have personal property on or about MIMC's area of operations at the Washburn Tunnel Facility site or may be carrying on activities at or near such area. MIMC agrees to comply with any and all reasonable requests of GCA, acting by or through its Manager of the Washburn Tunnel Facility or other duly authorized

representative, regarding the scheduling of work by MIMC so that interference with or from others and injury to persons or damage to property will be minimized. MIMC agrees to perform all its work in such a manner as to cause a minimum of interference with GCA's operations and the operation of others on the premises of the Washburn Tunnel Facility and to take all necessary precautions to protect such premises and all persons in, on, or about such premises from injury or damage. MIMC shall and does hereby assume full responsibility for the taking of such precautions by MIMC's officers, employees, agents, licensees, permittees, and subcontractors. Upon completion of any work to be performed by MIMC under the provisions of this Agreement, MIMC shall restore the levees, basins, and premises on the Washburn Tunnel Facility site to as good condition as that existing prior to the commencement of such work by MIMC, normal wear and tear excepted. MIMC further agrees that upon the completion of such work and upon the termination of this Agreement to leave such premises clean and free of all tools, equipment, waste materials, and rubbish belonging to it or attributable to its activities.

§3.05. Route of Travel on Washburn Tunnel Facility Site. In going to and from its area of work and activity on the Washburn Tunnel Facility site, MIMC agrees to follow such route of travel on or through such site as may be designated by GCA's Manager of such Facility or other duly authorized representative.

AUG 1

§3.06. Loading and Transporting of Sludge. MIMC assumes full responsibility for the removal of all sludge generated at the Washburn Tunnel Facility, and for the transportation and proper disposal thereof, from and after the time such sludge enters MIMC's vehicles or barges. MIMC shall be responsible for observing and monitoring the process of such sludge being loaded onto its vehicles or barges and shall notify GCA personnel when to start and when to stop such loading process. In the event MIMC concludes that it is necessary to cease such loading prior to the normal loading stopping time or point, MIMC shall have the responsbility to immediately notify GCA personnel of such fact. GCA shall have no responsibility for MIMC's equipment, vehicles, or barges and shall conduct such loading operations only at the time and in the manner directed by MIMC. Further, MIMC shall be solely responsible for the removal of sludge materials from the Washburn Tunnel Facility "C" basin as required to maintain continuous operation of the treatment facilities at such Washburn Tunnel Facility.

§3.07. Transportation of Sludge. MIMC shall transport all sludge generated at the Washburn Tunnel Facility by barge. The general route of travel for such barges shall be down the Houston Ship Channel to Galveston Bay, through such Bay to the Gulf Coast Intracoastal Waterway, then westward along such Waterway to the barge canal adjoining the disposal site. Said barge canal is shown on Exhibit B attached hereto and made a part hereof for all purposes. During the term of this Agreement, it shall be the responsibility and the obligation of

MIMC, at its sole cost and expense, to perform all maintenance and to make those repairs and improvements to such barge canal, the adjoining turning basin, and the appurtenant docks and wharves necessary or convenient to the sludge removal, transportation, and disposal services to be performed by MIMC under the provisions of this Agreement.

§3.08. Disposal Operations. During the term of this Agreement, MIMC shall have the right and the obligation to utilize the disposal site as the place for the unloading, storage, and disposal of that wastewater treatment sludge generated at the Washburn Tunnel Facility. MIMC shall have the sole right and responsibility, subject to the reasonable direction of GCA, to operate such disposal site and to perform all activities conducted thereon in a manner consistent with the provisions of law, applicable rules and regulations of all governmental units and agencies having jurisdiction over such site and the activities conducted thereon, the terms and conditions of the MIMC Permit, and the terms and provisions of the heretofore described lease by and between Hall's Bayou Ranch, Inc., and GCA. MIMC shall be solely responsible, at its cost and expense, to provide all labor, equipment, and facilities necessary to properly conduct such sludge disposal operations at, in, and on such site and to provide, excavate, construct, and repair on such disposal site all pits, ponds, and improvements necessary and proper to the lawfully, timely, and efficient conduct of such sludge disposal operations. All reporting requirments of governmental units or agencies

RECEIVED
AUG 11 9
Water Applications

relating to such sludge disposal operation on such site shall be the responsibility of MIMC. It is specifically agreed, however, that copies of any and all correspondence or written communication by and between such governmental units and agencies and MIMC relating to such sludge disposal operations, including all reports by MIMC to such units or agencies, shall be immediately sent to GCA.

§3.09. Fees, Charges, and Civil Penalties. It shall be the responsibility of MIMC to pay any and all fees, charges, and civil penalites, administrative or judicial, imposed against MIMC or GCA by a governmental unit or agency because of the use or manner of use of the disposal site by MIMC during the term of this Agreement. It is specifically provided, however, that this responsibility of MIMC shall not extend to or include the disposal on such site of hazardous sludge originating or generated at the Washburn Tunnel Facility if such fact is unknown to MIMC at the time of such disposal. In such event, payment of any civil penalties imposed against either MIMC or GCA for the disposal of hazardous sludge in or on such site during the term of this Agreement shall be the sole responsibility of GCA.

§3.10. Spillage of Sludge. GCA represents to MIMC that the sludge generated at the Washburn Tunnel Facility and to be removed, transported, and disposed of by MIMC is not and will not be inherently harmful, dangerous, or hazardous; however, it is recognized that any spillage of such sludge at the Washburn Tunnel Facility site or the disposal site would create an

AUG 1 1 89

untidy condition and could interfere with the use of the road, ground, or surface upon which such spillage occurred. Therefore, MIMC agrees to adapt or modify its vehicles and equipment used in the performance of the services described herein to prevent such spillage and agrees that, upon the request of GCA, MIMC will furnish such labor and equipment as may be necessary to clean up and remove such spillage by MIMC on the Washburn Tunnel Facility site and the disposal site.

§3.11. Standard of Work and Equipment. MIMC shall diligently and carefully perform all work required of it by the provisions of this Agreement in a good and workmanlike manner. In the performance of such work, MIMC covenants and agrees that it will use commonly accepted techniques and practices for the disposal of sludge and agrees to abide by all federal, state, and local laws, rules, and regulations applicable to such sludge disposal operations. All material equipment used by MIMC in the removal, transportation, and disposal of such sludge shall be in good working condition and capable of performing its intended function in an efficient and satisfactory manner. MIMC agrees to comply with any reasonable request by GCA that MIMC remove from operation at the Washburn Tunnel Facility site and the disposal site any defective, unsafe, or unsatisfactory equipment.

ARTICLE 4.

Consideration for Services

§4.01. Amount of Payment, GCA to MIMC. As consideration for the services to be performed by MIMC pursuant to the

provisions hereof, GCA agrees to pay MIMC in accordance with the schedule of fees set forth in Exhibit C, which is attached hereto and made a part hereof for all purposes.

§4.02. Watered Sludge. From time to time, MIMC may desire to add water to the sludge in order to facilitate its removal as a slurry from the "C" basin at the Washburn Tunnel Facility. In such event, MIMC shall not add more water at any time than GCA's Manager of the Washburn Tunnel Facility has certified in writing to be a reasonable amount. If during any calendar month MIMC adds water in excess of the amount certified as reasonable by such Manager, MIMC shall be deemed to have removed an amount of sludge equal to the amount MIMC actually removed less that amount of water which MIMC added to the sludge in excess of the amount certified as reasonable by GCA's Manager of the Washburn Tunnel Facility.

§4.03. Time of Payment. Monthly payments calculated according to the schedule of fees set forth in Exhibit C to this Agreement shall be made by GCA to MIMC within thirty days after receipt by GCA from MIMC of a monthly invoice. Such invoice shall reflect the volume of sludge removed from the Washburn Tunnel Facility site during the calendar month covered by the invoice. Any dispute between GCA and MIMC as to the volume of sludge removed during any such calendar month shall be resolved promptly; however, in such event GCA shall timely pay to MIMC that portion of any such monthly invoice not in dispute.

00056

AUG 1 1

§4.04. Adjustments to Fees. On the anniversary date of this Agreement, and on the same date during each succeeding year during the base term hereof, the fees set forth in the Schedule of Fees on Exhibit C of this Agreement shall be increased or decreased for each of the following twelve calendar months by a percentage equal to the percentage increase or decrease in the Personal Consumption Expenditure Deflator published by the United States Department of Commerce, Bureau of Census, for the next preceding twelve-month period for which data is available. The increase or decrease, if any, in such fees shall be calculated by multiplying each of the fees or rates shown on said Exhibit C by the then appropriate Personal Consumption Expenditure Deflator.

§4.05. Amount of Payment, MIMC to GCA. The schedule of fees set forth in Exhibit C to this Agreement was calculated and prepared on the assumption that MIMC would provide a disposal site for the sludge to be disposed of under the provisions of this Agreement. As heretofore shown, by and through GCA's lease with Hall's Bayou Ranch, Inc., GCA will provide such disposal site during the term hereof. Therefore, to accommodate this change in circumstances, MIMC agrees to offset in part the consideration to be paid by GCA to Hall's Bayou Ranch, Inc., for the lease of such disposal site. As such offset, MIMC agrees to pay to GCA during the base term of this Agreement the sum of $30,000.00 per calendar quarter. Such payments shall be due and payable quarterly in advance throughout the base term of this Agreement, commencing with the

RECEIVED
AUG 1

calendar quarter beginning on July 1, 1986, and continuing for each calendar quarter thereafter. This amount shall be known as the "MIMC offset payment." In the event any such MIMC offset payment is not timely made by MIMC, GCA shall have the right to reduce payments due from GCA to MIMC according to the provisions of §4.01 hereof by the amount necessary to recoup any MIMC offset payment due but unpaid.

§4.05. Proration of MIMC Offset Payment. For that portion of the last calendar quarter of the base term or the last calendar quarter in which this Agreement is in effect, MIMC shall pay a pro rata portion of the MIMC offset payment on a per diem basis.

§4.06. Books and Records of MIMC. MIMC shall maintain books and records throughout the base term reflecting by day, week, or month the number of cubic yards of sludge removed by MIMC from the Washburn Tunnel Facility site and the number of cubic yards of sludge disposed of in or on the disposal site. GCA shall have the right to inspect and audit such books and records at MIMC's office at any time during normal business hours solely for the purpose of verifying the number of cubic yards of sludge removed and disposed of by MIMC.

ARTICLE 5.

Loss of Property, Indemnification, and Insurance

§5.01. Loss of Property of MIMC. During the term of this Agreement, if any property of MIMC in or on the Washburn Tunnel Facility site or the disposal site is destroyed or damaged by water, fire, storm, flood, or any other similar or dissimilar

RECEIVED
AUG 11
Water Quality Applications

act of God, or by any other means or by any person or entity, no part of such loss or damage shall be paid by GCA or shall GCA be liable therefor unless such loss or damage is the result of the negligent acts or omissions of GCA, its officers, agents, or employees acting within the course and scope of their employment. The provisions of this Section are not intended to and do not exempt any third parties, including independent contractors, from liability for any of their negligent acts or omissions which result in or cause damage to MIMC's property or which cause injury or damage to the person or property of others.

§5.02. Indemnification of GCA. GCA shall not be liable for any loss, damage, or injury of any kind or character to any person or property arising from any use of the Washburn Tunnel Facility site or the disposal site by MIMC; or caused by any defect in any structure, improvement, equipment, or facility owned by MIMC and situated on either of such sites; or caused by or arising from any negligent act or omission of MIMC or its officers, agents, or employees; or occasioned by the failure of MIMC to maintain the disposal site in a safe condition consistent with and considering its use as a sludge disposal site. MIMC waives all claims and demands on its behalf against GCA for any such loss, damage, or injury occurring during the term of this Agreement and agrees to indemnify and hold GCA free and harmless for any such loss, damage, or injury.

§5.03. Indemnification of MIMC. MIMC shall not be liable for any loss, damage, or injury of any kind or character to any

AUG 1

person or property arising from any use of the Washburn Tunnel Facility site by GCA; or caused by any defect in any structure, improvement, equipment, or facility owned by GCA and situated on such site; or caused by or arising from any negligent act or omission of GCA or its officers, agents, or employees; or caused by hazardous sludge generated at the Washburn Tunnel Facility delivered or removed by MIMC and not known by MIMC to be hazardous when received, removed, or disposed of by MIMC. GCA waives all claims and demands on its behalf against MIMC for any such loss, damage, or injury occurring during the term of this Agreement and agrees to indemnify and hold MIMC free and harmless for any such loss, damage, or injury.

§5.04. MIMC Insurance. Throughout the term of this Agreement, MIMC shall maintain or cause to be maintained adequate workmen's compensation insurance, including occupational disease provisions, under the laws of the State of Texas and general liability insurance for the benefit of its employees. Such workmen's compensation insurance shall include an All States endorsement, a voluntary compensation endorsement, a marine workers and a longshoremen and harbor workers endorsement where applicable to the work, and an endorsement waiving subrogation against MIMC and GCA. In addition, MIMC shall maintain or cause to be maintained throughout the term of this Agreement contractors' public liability insurance with coverage of $500,000 per person for bodily injury, $1,000,000 for each occurrence, and $500,000 for property damage; and automobile public liability coverage in

RECEIVED AUG 11 89

the same amounts. MIMC shall provide proof of such coverage by providing a certificate of such insurance to GCA. Such policies of insurance must specifically provide that they cannot be cancelled without thirty days prior written notice to GCA.

ARTICLE 6.

Termination of Agreement

§6.01. Governmental Action. MIMC represents to GCA that it has all necessary governmental permits, licenses, grants of authority, authorizations, and approvals necessary and required to remove, transport, and dispose of nonhazardous sludge from the Washburn Tunnel Facility at, in, or on the disposal site. MIMC further represents and agrees that it will exercise its best efforts to maintain in full force and effect all such permits, licenses, grants of authority, authorizations, and approvals and to comply with all of the provisions thereof and with all laws, rules, and regulations of each and every governmental authority having jurisdiction over MIMC's removal, transportation, and disposal of such sludge and all of MIMC's activities relating to such matters. If any governmental action or restriction prevents further operation of MIMC's sludge removal, transportation, or disposal activities contemplated hereby, this Agreement shall terminate and be of no further force or effect on and from the date such governmental action or restriction requires cessation of any or all such activities by MIMC.

AUG 1

§6.02. Lease of Disposal Site. It is understood and agreed that in the event GCA's lease of the disposal site is terminated for any reason this Agreement shall terminate and be of no further force or effect from and after the date such lease is terminated.

§6.03. Closure of Washburn Tunnel Facility. In the event governmental action or restriction precludes the continued operation of the Washburn Tunnel Facility, this Agreement shall terminate on the date such action or restriction requires cessation of operations at such Facility.

ARTICLE 7.

General Protective Provisions

§7.01. No Partnership or Joint Venture. The relationship between GCA and MIMC at all times shall be and remain solely that of owner and independent contractor and shall not be deemed a partnership or joint venture.

§7.02. No Termination on Bankruptcy. Neither bankruptcy, insolvency, assignment for the benefit of creditors, nor the appointment of a receiver shall affect this Agreement as long as GCA and MIMC or their respective successors or legal representatives continue to perform all covenants of this Agreement.

§7.03. No Waiver. No waiver by either party of any default or breach of any covenant, condition, or stipulation contained in this Agreement shall be treated as a waiver of any subsequent default or breach of the same or any other covenant, condition, or stipulation of this Agreement.

AUG 1

§7.04. Force Majeure. MIMC's obligations to perform hereunder shall be excused for delays occasioned by causes beyond MIMC's control and not due to its fault or negligence, such as war, natural disaster, weather, fires, labor disputes, governmental acts and other similar or dissimilar events.

ARTICLE 8.

MISCELLANEOUS

§8.01. Delivery of Rents and Notices. All rents or other sums, notices, demands, or requests from one party to the other shall be personally delivered or sent by mail, certified or registered, postage prepaid, to the other party at the address stated in this Section for such party, or at such address as one party may request in writing of the other party, and shall be deemed to have been given at the time of personal delivery or at the time of mailing.

MIMC	McGinnes Industrial Maintenance Corporation 5837 Northdale Houston, Texas 77017
(with a copy to):	Sullivan, King & Sabom P. O. Box 2482 Houston, Texas 77252 Attn: Mr. John J. King
GCA	Gulf Coast Waste Disposal Authority 910 Bay Area Boulevard Houston, Texas 77058 Attn: Mr. L. Jack Davis
(with a copy to):	Olson & Olson MCorp Plaza, Suite 3485 Houston, Texas 77002 Attn: Mr. William A. Olson

§8.02. Parties Bound. This Agreement shall be binding upon and inure to the benefit of the parties to the Agreement

AUG 11 8

and their respective legal representatives, successors, and assigns.

§8.03. Texas Law to Apply. This Agreement shall be construed under and in accordance with the laws of the State of Texas, excluding its conflict of law rules.

§8.04. Amendment. No amendment, modification, or alteration of the terms of this Agreement shall be binding unless it is in writing, dated subsequent to the date of this Agreement, and duly executed by the parties to this Agreement.

§8.05. Assignment. This Agreement shall not be transferred or assigned by MIMC or shall MIMC subcontract any of the work to be performed hereunder without the prior written consent of GCA.

§8.06. Condition of the Disposal Site. It is specifically understood and agreed that any and all required care, maintenance, and ultimate closure of the disposal site and any and all pits, ponds, or related facilities presently situated thereon or created thereon during the term of this Agreement and used for the receipt or disposal of nonhazardous sludge are now and shall remain the sole responsibility of MIMC.

§8.07. MIMC to Pay Utility Charges. MIMC shall pay or cause to be paid all charges for water, heat, gas, electricity, telephone, and other utilities, including any extension and connection fees, used by it is the conduct of its sludge disposal operations at the disposal site.

§8.08. Prior Use and Condition. GCA and MIMC agree that by executing this Agreement GCA does not thereby assume any

responsibility or liability to MIMC or any other party for any prior use or for the condition of the disposal site on the effective date of this Agreement and MIMC does not thereby waive any claim or cause of action it may have against GCA or any other party for any prior use or for the condition of the disposal site on the effective date of this Agreement.

§8.09. MIMC's Use of Disposal Site. Insofar as this Agreement is concerned, the disposal site shall be used by MIMC solely for the purpose of disposing of sludge generated at the Washburn Tunnel Facility and any other use of such site by MIMC shall constitute a breach of this Agreement, unless such other use is first approved of in writing by GCA.

§8.10. Headings of Articles and Sections. All headings of the Articles and Sections of this Agreement have been inserted for convenience of reference only, are not to be considered a part of this Agreement, and shall in no way affect the interpretation of any of the provisions of this Agreement.

§8.11 Severability. The provisions of this Agreement are severable and if any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement or the application thereof to any person or circumstance shall ever be held by any court of competent jurisdiction to be invalid or unconstitutional for any reason, the remainder of this Agreement and the application of such word, phrase, clause, sentence, paragraph, section, or other part of this Agreement to other persons or circumstances shall not be affected thereby.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in duplicate originals as of the date and year first written above.

GULF COAST WASTE DISPOSAL AUTHORITY

By: _____

Its Chairman

ATTEST:

Veta Winick

MCGINNES INDUSTRIAL MAINTENANCE CORPORATION

By: _____

Its President

ATTEST:

Karen Russell

RECEIVED
AUG 11 89

00066

CE IED MAIL - RETURN RECEIPT ... JESTED

Gulf Coast Waste Disposal Authority
910 Bay Area Boulevard Houston Texas 77058 713/488-5115

April 17, 1989

Mr. Virgil G. McGinnes
McGinnes Industrial Maintenance Corporation
5837 Northdale
Houston, Texas 77017

RE:
Article 2, Section 2.02
Agreement By and Between
Gulf Coast Waste Disposal Authority
and
McGinnes Industrial Maintenance Corporation

Dear Mr. McGinnes:

As a follow-up to the letter dated March 15, 1989 in which you were notified of the Gulf Coast Waste Disposal Authority's intent to extend the term of the written Agreement for the five year period as prescribed in the original Agreement, enclosed for your records is the Resolution approved by the Authority Board of Directors approving that action.

Please contact me if you have any questions or comments.

Very truly yours,

Dick Brown
General Manager

DB:gk

Enclosure

cc:
Sullivan, King & Sabom, Attention: Mr. John J. King
Olson & Olson, Attention: Mr. William A. Olson (w/enc.)
GCWDA, Attention: Mr. Charles Ganze (w/enc.)

RECEIVED
AUG 11
Water Quality Application

RECEIVED
APR 18 1989

VCM
LPM
LMZ
RLS
KR
Owner
Shop
Corp.
Job Book

00067

preamble of this Resolution be, and they are hereby, adopted,

RECEIVED
AUG 11

RESOLUTION OF THE BOARD OF DIRECTORS OF GULF COAST WASTE DISPOSAL AUTHORITY EXERCISING SAID AUTHORITY'S RIGHT TO EXTEND ITS AGREEMENT WITH McGINNES INDUSTRIAL MAINTENANCE CORPORATION RELATING TO THE REMOVAL AND DISPOSAL OF SLUDGE GENERATED AT THE AUTHORITY'S WASHBURN TUNNEL FACILITY FOR A PERIOD OF FIVE YEARS; PROVIDING FOR NOTICE; AND CONTAINING OTHER PROVISIONS RELATING TO THE SUBJECT.

* * * * *

WHEREAS, as of July 1, 1986, Gulf Coast Waste Disposal Authority ("GCA") and McGinnes Industrial Maintenance Corporation ("MIMC") entered into a written agreement (the "Agreement"), which is incorporated herein by reference, whereby GCA contracted with MIMC for the latter to transport and dispose of sludge generated at GCA's Washburn Tunnel Facility for a period of three years, two months, and eighteen days (from July 1, 1986 until September 18, 1989), the base term, in the manner, subject to the conditions, and at the site described in said Agreement; and

WHEREAS, pursuant to the provisions of §2.02 of said Agreement, GCA has the right to extend the same for a further period of five years by giving MIMC written notice of its intention to do so within the last year prior to the expiration date of the base term of such Agreement, but no later than three months prior to the expiration date of such base term; and

WHEREAS, the Board of Directors deems it to be in the best interest of GCA and the public to exercise GCA's right to thus extend the term of such Agreement; now, therefore

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF GULF COAST WASTE DISPOSAL AUTHORITY:

Section 1. That the facts and recitations set forth in the preamble of this Resolution be, and they are hereby, adopted, ratified, and confirmed.

Section 2. That Gulf Coast Waste Disposal Authority exercise, and it does hereby exercise, its right to extend the term of the Agreement referred to and described in the preamble

hereof for an additional period of five years, as authorized by §2.02 of said Agreement.

Section 3. That the General Manager of Gulf Coast Waste Disposal Authority be, and he is hereby, authorized and directed to give McGinnes Industrial Maintenance Corporation, notice of the action taken hereby by immediately mailing an executed copy of this Resolution by registered or certified mail, return receipt requested, to each of the parties (McGinnes Industrial Maintenance Corporation and Sullivan, King, and Sabom) specified in §8.01 of said Agreement at the addresses shown therein.

Section 4. That the prior action of the General Manager of Gulf Coast Waste Disposal Authority giving the parties specified in Section 3 hereof written notice of the Authority's decision to exercise its right to extend the term of the subject Agreement for an additional period of five years be, and it is hereby, approved, ratified, and confirmed.

PASSED, APPROVED, AND ADOPTED this 13th day of April, 1989.

Chairman, Board of Directors
Gulf Coast Waste Disposal Authority

ATTEST:

Secretary, Board of Directors
Gulf Coast Waste Disposal Authority

RECEIVED
AUG 1 [illegible]

00069

00070

RECEIVED

AUG 2 3 1984

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 GENERAL — U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

I. EPA I.D. NUMBER: F TX0004910

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete items II, IV, and VII regardless. If no label has been provided, refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental forms listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Is this facility currently resulting in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
C. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X	
D. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
E. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
F. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
G. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
H. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
I. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP McGINNES INDUSTRIAL MAINT CORP

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 GEORGE ROLAND McGINNES MGR	713 644 3227

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX	
3 5837 NORTHDALE	

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 HOUSTON	TX	77087

DEC 30 1981

6AEP

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER	
5	

3 miles S.W. of Hitchcock, TX adjacent to Intracostal Waterway & Carancahua Lake on Halls Bayou Ranch property in the H. Yowell Survey

B. COUNTY NAME	
GALVESTON COUNTY	

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6	TX		

00071

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
(specify)	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME

McGINNES INDUSTRIAL MAINT CORP

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC (other than federal or state), O = OTHER (specify)

PRIVATE

D. PHONE (area code & no.)

A 713 644 3227

E. STREET OR P.O. BOX

5837 NORTHDALE

F. CITY OR TOWN | **G. STATE** | **H. ZIP CODE** | **IX. INDIAN LAND**

HOUSTON | TX | 77087

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	C. PSD (Air Emissions from Proposed Sources)
N TX0004910	P
B. UIC (Underground Injection of Fluids)	**E. OTHER** (specify)
U	W0000122 1-001 (specify) STATE OF TEXAS WATER PERMIT
D. RCRA (Hazardous Wastes)	**E. OTHER** (specify)
R	(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Wastewater containing 8-10% solids (wood fiber and waste activated sludge) is lagooned. The solids settle; the overflow water is then treated in oxidation ponds (6-12 mos. retention) and the treated water is discharged into the intracostal waterway.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Roland McGinnes, Supt.	Roland McGinnes	

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (6-80) REVERSE

00072

EPA I.D. NUMBER (copy from Item 1 of Form 1)

Please print or type in the unshaded areas only.

Form Approved OMB No. 158-R0173

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			b. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	29	14	03N	95	01	29W	Intracostal waterway, thence into segmen 2424, which is West Bay, a part of the Trinity-San Jacinto Estuary.

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g., for certain mining activities)*, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1
001	Waste from a sludge treatment facility which contains combined sludge from pulp paper mfg. crudeoil refining, petro-chemical mfg., transportation terminal and biological sludge.	1.310 MGD (2-80 to 10-81)	Sludge lagoons (Oxidation) Stabilization ponds Discharge to surface water	5-T 3-G 4-A

RECEIVED

DEC 30 1981

6AEP

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☒ YES *(complete the following table)* ☐ NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units)*		c. DU ATIO *(in da*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
001		0.8	3.5	1.310 (2-80 to 10-81)	3.800 (2-80 to 10-81)	9.17MGD (2-80 to 10-81)	-	80 da (2-80 10-81

III. MAXIMUM PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES *(complete Item III-B)* ☒ NO *(to to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☐ YES *(complete Item III-C)* ☒ NO *(go to Section IV)*

C. If you answered "Yes" to Item III-B, list the quantity which represents an actual measurement of your maximum level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	*(list outfall numbers)*

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES *(complete the following table)* ☒ NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

EPA I.D. NUMBER (copy from Item 1 of Form 1)

CONTINUED FROM PAGE 2

Form Approved OMB No. 158-R0173

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Asbestos	Production of chlorine	Methyl mercaptan	Contamination from pulp preparation.
Acetaldehyde	Production of Butadiene & maleic anhydride.	Napthenic acid	Present a crude oil.
Carbon disulfide	Used for catalytic activation.	Triethanolamine	Production of butadiene.
Crotonaldehyde	Production of maleic anhydride.	Vanadium	Present in crude oil.
Cyclohexane	Present in crude oil.	Xylene	Production of Xylene - production of maleic anhydride.
Diethylamine	Solvent from sulfur recovery unit.	Nitrotoluene	Production of dinitrotoluene.
Dimethylamine	Production of butadiene.		
Furfural	Production of butadiene.		
Formaldehyde	Treatment of starch for paper treatment.	NOTE: Each pollutant listed is believed to be in trace	amounts.

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. Is any pollutant listed in Item V-C a substance or a component of a substance which you do or expect that you will over the next 5 years use or manufacture as an intermediate or final product or byproduct?

☐ YES (list all such pollutants below) ☐ NO (go to Item VI-B)

DOES NOT APPLY

B. Are your operations such that your raw materials, processes, or products can reasonably be expected to vary so that your discharges of pollutants may during the next 5 years exceed two times the maximum values reported in Item V? DOES NOT APPLY

☐ YES (complete Item VI-C below) ☐ NO (go to Section VII) NA

C. If you answered "Yes" to Item VI-B, explain below and describe in detail the sources and expected levels of such pollutants which you anticipate will be discharged from each outfall over the next 5 years, to the best of your ability at this time. Continue on additional sheets if you need more space.

DOES NOT APPLY

00074

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES *(identify the test(s) and describe their purposes below)* ☒ NO *(go to Section VIII)*

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☐ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
NUS Corporation	900 Gemini Ave. Houston, TX 77058	713 - 488-1810	Form 2-C, Part V-A part V-B, Part V-C Radioactivity
NUS Corporation	15 Noble Ave. Pittsburgh, PA 15205	412 - 343-9200	Form 2-C, Part V-C
Edna Wood Laboratories, Inc.	4820 Old Spanish Trail Houston, TX 77021	713 - 747-7271	Form 2-C, Part V-A
Gulf Coast Waste Disposal Authority	1002 N. Richey Pasadena, TX 77506	713 - 472-5507	Form 2-C, Part V-A

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
Roland McGimmes, Supt.	(713) 644-3227
C. SIGNATURE: Roland McGimmes	D. DATE SIGNED: December 17, 1981

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*

Form Approved OMB No. 158-R0173

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	28				13		25	PPM				
b. Chemical Oxygen Demand *(COD)*	200						1	PPM				
c. Total Organic Carbon *(TOC)*	67				55		25	PPM				
d. Total Suspended Solids *(TSS)*	108				48		25	PPM				
e. Ammonia *(as N)*	0.2						1	PPM				
f. Flow	VALUE		VALUE		VALUE					VALUE		
g. Temperature *(winter)*	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature *(summer)*	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	MAXIMUM	MINIMUM 8.3	MAXIMUM 9.6			25	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		LT 0.2						1	PPM				
b. Chlorine, Total Residual	X		0.1						1	PPM				
c. Color	X		90						1	APHA				
d. Fecal Coliform	X		0						1	Fecal Coliform 100 ml				
e. Fluoride (16984-48-8)	X		0.4						1	PPM				
f. Nitrate-Nitrite *(as N)*	X		0.5						1	PPM				

00076

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	X		4.8						1	PPM				
h. Oil and Grease	X		LT 1						1	PPM				
i. Phosphorus (as P), Total (7723-14-0)	X		0.38						1	PPM				
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)	X		LT 1						1	PPM				
l. Sulfide (as S)	X		LT 0.1						1	PPM				
m. Sulfite (as SO_3) (14265-45-3)	X		LT 0.1						1	PPM				
n. Surfactants	X		0.28						1	PPM				
o. Aluminum, Total (7429-90-5)	X		1.0						1	PPM				
p. Barium, Total (7440-39-3)	X		LT 0.2						1	PPM				
q. Boron, Total (7440-42-8)	X		0.2						1	PPM				
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		0.66						1	PPM				
t. Magnesium, Total (7439-95-4)	X		110						1	PPM				
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)	X		0.25						1	PPM				
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

00077

EPA Form 3510-2C (8-80)

LT - less than

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
	001

CONTINUED FROM PAGE 3 OF FORM 2-C

Form Approved OMB No. 158-R0173

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)		X		LT 0.005						1	PPM				
3M. Beryllium, Total, 7440-41-7)			X												
4M. Cadmium, Total (7440-43-9)		X		LT 0.01						1	PPM				
5M. Chromium, Total (7440-47-3)		X		LT 0.02						1	PPM				
6M. Copper, Total (7550-50-8)		X		LT 0.02						1	PPM				
7M. Lead, Total (7439-92-1)		X		LT 0.05						1	PPM				
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)		X		LT 0.02						1	PPM				
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)		X		LT 0.01						1	PPM				
14M. Cyanide, Total (57-12-5)		X		0.008						1	PPM				
15M. Phenols, Total		X		0.01						1	PPM				
DIOXIN															
2,3,7,8-Tetrachlorodibenzo P-Dioxin (1764-01-6)				DESCRIBE RESULTS											

00078

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK "X" a. TEST-ING NOT REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)		X		LT 10						1	PPB				
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)		X		LT 10						1	PPB				
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)		X		LT 10						1	PPB				
12V. Dichlorobromomethane (75-27-4)		X		LT 10						1	PPB				
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)		X		LT 10						1	PPB				
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

EPA Form 3510-2C (Rev. 12-80) PAGE V-4

Previous edition may be used.

All GC/MS data not reported below EPA detection limits.

000079

EPA I.D. NUMBER (copy from Item 1 of Form 1) | OUTFALL NUMBER: 001

Form Approved OMB No. 158-R0173

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TEST INCLUDED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)		X		LT 10						1	PPB				
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)		X		LT 10						1	PPB				
25V. Toluene (108-88-3)		X		LT 10						1	PPB				
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)		X		LT 10						1	PPB				
30V. Trichlorofluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION — ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)		X		LT 25						1	PPB				
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)		X		LT 25						1	PPB				

00080

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TEST AND REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) Anthracene (56-55-3)			X												
6B. Benzo (a) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (ghi) Perylene (191-24-2)			X												
9B. Benzo (k) Fluoranthene (207-08-9)			X												
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)			X												
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)			X												
12B. Bis (2-Chloro-isopropyl) Ether (39638-32-9)			X												
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)		X		20						1	PPB				
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Dichloro-benzene (541-73-1)			X												

18000

EPA I.D. NUMBER (copy from Item 1 of Form 1) | OUTFALL NUMBER: 001

CONTINUED FROM PAGE V-6

Form Approved OMB No. 158-R0173

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitrotoluene (121-14-2)		X		LT 10						1	PPB				
28B. 2,6-Dinitrotoluene (606-20-2)		X		LT 10						1	PPB				
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)		X		LT 10						1	PPB				
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-71-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine															

00082

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TEST (see instructions)	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION — PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan sulfate (031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin aldehyde (421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

00083

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
	001

CONTINUED FROM PAGE V-8

Form Approved OMB No. 158-R0173

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
PCB-1221 (11-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

0084

01221

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Bob Silvus, Chief, and Ray Newton, Engineer, Wastewater Section, Permits Division
DATE: 5/17/84

THRU : Bill Klemt, Chief, Underground Injection Control Section, Permits Division

FROM : Bob Morris, Geologist, Underground Injection Control Section, Permits Division

SUBJECT: Application No. 40159, Renewal of Permit No. 01221
McGinnes Industrial Maintenance Corporation
Galveston County

We have reviewed the subject application to determine if there may be a possible hazard to ground water quality as a result of the applicant's proposal. The operation has been independently reviewed on at least two occasions by geologists of the former Texas Water Development Board and of the former Texas Water Quality Board. Although a formal report by Buck Steingraber cannot be located in the file, his conclusions and qualifications as an expert are well documented under cover of a letter dated December 22, 1978, from Paul Seals to Lee Mathews. A letter to Robert Fleming from Tommy Knowles, dated July 25, 1977, gives the opinion of the Texas Water Development Board, Ground Water Division, that the operation presents no significant hazard to the quality of ground water in the area. The data supporting this conclusion is not currently in the file, but is transmitted herewith to be added to it.

I have reviewed the file rather extensively. The most recent information pertinent to ground water in the area appears to be a report submitted by Southwestern Laboratories and dated January 1980 which documents numerous boreholes made to support an expansion of the facility. It is my professional opinion that the facility as it exists today poses no significant hazard to ground water in the area. It is highly improbable that significant seepage has occurred or will occur from the ponds as they exist at the present time. Indeed, a case could be made that seepage, if it should occur, would improve the quality of ground water, based upon the composition of the waste water and analyses of ground-water samples from the monitor wells.

Bob Morris

Bob Morris

RWM:rmd
Attachment

01221

R COMMISSION USE ONLY

Application No. 90645

Adm. Review by Sandra Shaw

Administratively Complete 2-23-90

Seq. 2424, Galveston-Serdeco Pet.
TR0004910

EXECUTIVE DIRECTOR
TEXAS WATER COMMISSION
ATTN: Water Quality Division-Applications Unit
P.O. Box 13087, Capitol Station
Austin, Texas 78711

AUG 1 1 89

APPLICATION FOR PERMIT TO DISCHARGE, DEPOSIT OR DISPOSE OF INDUSTRIAL WASTE INTO OR ADJACENT TO WATER IN THE STATE

1. Applicant(s): McGinnes Industrial Maintenance Corporation (M.I.M.C.)
Sp (Individual, Corporation or Other Legal Entity)

Address: 5837 Northdale
(Permanent Mailing Address)

City: Houston State: Texas Zip: 77087

Telephone Number: 713-644-3227

If the application is submitted on behalf of a corporation, please identify the Charter Number as recorded with the Office of the Secretary of State for Texas.
216706-0
Charter Number

2. a. List those persons with titles or firms, including a complete mailing address and telephone number, authorized to act for the applicant during the processing of the permit application.

L. P. McGinnes	President	Same as applicant
V. C. McGinnes	V-President	Same as applicant
Karen Russell	Sec.-Tres.	Same as applicant
Roland McGinnes	Supt.	Same as applicant
William L. Burnett	Wheat, Thornton, & Burnett	1775 St. James Pl. St. 304 Houston Texas 77056 713-961-7221

b. List the individual, including his/her mailing address and telephone number, responsible for causing notice to be published in a newspaper of general circulation in the county or counties where the waste management activities are to occur.

Karen Russell
M.I.M.C.
5837 Northdale
Houston Texas 77087
713-644-3227

00086

Revised 10/88 - Industrial Low Potential Impact Facilities

3. Type of Permit for which Application is Submitted

a. New (Original) _____

b. Amendment _____ Permit Number _____ AUG 1 : 5

c. Renewal XXX Permit Number 01221

d. Amendment with Renewal _____ Permit Number _____

4. List any other permits, existing or pending, which pertain to pollution control activities conducted at this facility and any other TWC permits or liscenses.

Hazardous Waste Management Permit No. _____

NPDES Permit No. TX 0004910

Underground Injection Permit No. _____

Prevention of Significant Deterioration Permit No. _____

TDH Bureau of Radiation Control License No. _____

Nonattainment Permit No. _____

National Emission Standards for Hazardous Pollutants Permit No. _____

Water Use Permit No. _____

Secondary Use Permit No. _____

TWC Certificate of Adjudication _____

TWC Certificate of Convienience and Necessity _____

Ocean Dumping Permit No. _____

Dredge and Fill Permit No. _____

Other _____

5. Site Information:

a. Ownership: See Exhibit "A"

(1) Plant Site (treatment): _____
Individual, Corporation or Other Legal Entity

Address, if different from Question 1 _____

_____

Disposal area (land application): _____
Individual, Corporation or Other Legal Entity

Address, if different from Question 1 _____

_____

(2) To be Acquired (Purchase, Lease, Eminent Domain): _____

If leased or to be leased, submit a copy of lease and/or purchase agreement.

b. Plant Name: M.I.M.C.

c. Street Address, if available: N/A

d. County: Galveston

e. Latitude: Deg. 29° Min. 15 Sec. _____

Longitude: Deg. 95° Min. 00 Sec. _____

f. Are your waste disposal operations within the incorporated limits Yes _____ No XX or extraterritorial jurisdiction Yes XX No _____ of a municipality? If yes, what municipality? City of Hitchcock, Texas

g. Give a written description of the plant or disposal site with respect to known or easily identifiable landmarks (e.g. highways, FM roads, cities, etc.) which can be found on a USGS Topographic map. In the I.T. Yowell Survey A-215, Baha Survey, A-25, and D. Buckley Survey, A-44, in southwest Galveston County, Texas, adjacet to Carancahua Lake and the Intracoastal Waterway, approximately 8 miles south of Hitchcock, Texas

h. New Facilities: Submit at least one ground level photograph as follows: N/A

(1) Discharge Applications: Show the location of the wastewater treatment facility, the point of discharge to the receiving watercourse and as much area downstream as may be captured on film. If discharge is to a lake, show the area on either side of the point at which the discharge line is proposed to enter the lake.

(2) Land Disposal: Show the location of the wastewater treatment facility and the general characteristic of the area of disposal.

6. Disposal Method:

a. Discharge Applications: Provide a written description that traces the flow of effluent from the plant site to the nearest major watercourse. (For example: "From the plant site through a six-inch pipe to a county drainage ditch, to an unnamed tributary of Doe Creek, then to Doe Creek,

AUG 1 1 89

then to the Brazos River".)

The waste water effluent from the sludge storage ponds is collected in the oxidation ponds and monitored until the discharge parameters are obtained and then discharged through the water weir at outfall .001 flowing across 150' of vegetated ground into the I.C.W.(IntraCoastal Waterway).

b. Land Disposal: Provide a written description that traces the flow of effluent to final disposition including transportation and temporary storage (e.g. holding ponds). Identify the nearest identifiable watercourse to the disposal site to which runoff might flow if not contained.

The sludge is transported from Gulf Coast Waste Disposal Authority (G.C.W.D.A.) Washburn Tunnel facility by barges to the M.I.M.C. site. It is then pumped into sludge storage ponds through a 10" pipeline to the upper area where the effluent is returned through another 10" pipe to the lower area where it flows to and is collected in the oxidation ponds to be held for discharge. The neare identifiable water course to which run off might flow if not contained is the I.C.W.

AUG 1 1 89

7. Submit the following maps (use 7 1/2 minute scale) or drawings:

a. Attach a complete USGS Topographic Map which will show an area at least within 1 mile in all directions of the site. On the map identify the location of the wastewater treatment facilities and/or disposal site and with a highlighter trace the effluent routing from the point of discharge to a surface conveyance to the nearest identifiable watercourse. When requesting a land disposal/application permit, show the location of all effluent storage/holding ponds and the area to be irrigated.

See exhibit "B" & "C"

b. An application map or drawing, with scale, (more than one map or drawing may be submitted) which includes the following information:

See exhibit "D"

(1) The approximate boundaries of the tract of land on which the waste disposal activity is or will be conducted and the area to be served by the treatment facility.

(2) The location of the point or points of discharge or disposal.

(3) The boundaries of all tracts of land within a reasonable distance from the point or points of discharge, deposit or disposal. At a minimum, include all adjacent properties and those properties adjacent to the receiving watercourse for one mile downstream.

00089

c. Attach a map showing the location of the facility and a description of the surrounding area for a distance of 1 mile with particular reference to the general character of areas adjacent to the facility. Show its promimity to existing, new and future housing developments, industrial sites, commercial developments, highways and/or public thoroughfares, sewage treatment plants, public water supply intake, water supply wells, monitor wells, springs, surface water body or other water, parks, schools, recreational areas, shopping centers, etc., and include the location of any waste disposal activities conducted on the tract itself which are not included in this application.

See exhibit "E"

On the same map, indicate the direction of prevailing winds and the 100-year frequency flood level, where applicable.

Show on the map the distance to the nearest residential property line from any treatment unit.

8. Does the discharge route abut or cross property which is being utilized as a park, playground or school yard and is within one mile of the point of discharge? YES _____ NO XXX . If yes is checked, highlight the area on the map which is required by Question 7c above. List each park, playground or schoolyard within one mile of the discharge.

9. Show on an application map or on a separate list, properly cross-referenced to the map required in Question 7b (3) above, the names and mailing addresses of all landowners who might be affected by the activities described by this application. At a minimum, include all landowners whose property abuts the wastewater treatment plant site, any land treatment area, and the route of discharge for at least one mile downstream from the point of discharge to a surface conveyance.

See ehibit "C" - 7B(3) Charles Westerlage 8255 Shadylane La Margue, Texas 7756

10. The names and mailing addresses of persons identified as affected persons, Item 9 above, were obtained from:

Obtained from owner.

(Source: City, County, School or Water District Records, Abstract Co., etc.)

11. Is this waste disposal activity subject to 31 TAC Chapter 313, entitled Edwards Aquifer Rules? YES _____ NO XXXX If yes, the applicant may be required to submit additional information concerning methods of aquifer protection.

00090

12. Is treated wastewater is to be discharged to a city, county, state or flood control district drainage ditch? YES _____ NO XXX If yes, the applicant must contact the responsible entity to inform that entity of the proposed discharge plans and seek their approval for the discharge. The applicant must provide with this application proof of contact and copies of correspondence with such entity.

13. Complete the attached technical report. NOTE: An application must provide detailed information concerning facility location, point(s) of discharge or area of application, description of treatment process, and corresponding volumes and quality of effluent to be disposed of and any other information which would enable the staff to evaluate the application as reasonably required by the Executive Director.

14. List and index all attachments to this application.
    1. Exhibit "A" - Explaination of site ownership with copies of agreements attached.
    2. Exhibit "B" - Map in response to question 7 a., page 4.
    3. Exhibit "C" - Map in response to question 7 a., page 4 & 13& 14,.page 14.
    4. Exhibit "D" - Map in response to question 7 b., page 4.
    5. Exhibit "E" - Map in response to question 7 c., page 5& 12 d., page 14.
    6. Exhibit "F" - Map of disposal ponds in response to question 4, page 8.

AUG 1

SIGNATURE PAGE

AUG 1 1 89

Signature on Application: The person who signs the application form will often be the applicant himself; when another person signs on behalf of the applicant, his title or relationship to the applicant will be shown. In all cases, the person signing the form must be authorized to do so by the applicant. A person signing an application on behalf of an applicant must provide proof of authorization. An application submitted by a corporation must be signed by a principal executive officer of at least the level of vice president or by his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge(s) described in the form originates. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor, respectively. In the case of a municipal, state, federal or other public facility, the application must be signed by a principal executive officer, a ranking elected official or another duly authorized employee.

I, L. P. McGinnes (Typed or Printed Name), President (Title)

certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of civil penalty and criminal fine."

Signature: L. P. McGinnes Date: 8-4-89

Note: All applications must bear the signature and seal of notary public.

SUBSCRIBED AND SWORN to before me by the said

L. P. McGinnes on this 4 day of August, 1989

My commission expires on the 14 day of March, 1992.

(Seal)

Kathy Rothrock
Notary Public

Harris County, Texas

00092

TECHNICAL REPORT
FOR
INDUSTRIAL WASTEWATER TREATMENT FACILITIES

The following information must be provided as a minimum to support an industrial wastewater application. Do not refer to supplemental reports in lieu of filling out these minimum requirements. If an item does not apply to your facility write N/A to indicate that you have considered it. If you are requesting any variances from any provisions of 31 TAC Chapter 307 (discharges only) or 31 TAC Chapter 309 include supporting information as a supplement to this report.

1. If this application is for a new permit begin at No. 7.

2. If this application is for renewal of an existing permit begin at No. 4.

3. If this application is for an amendment to an existing permit briefly discuss the scope of any changes being requested and continue with No. 4.

4. If this is either a renewal or an amendment application briefly describe any process or treatment system changes that have been made since the issuance of your current permit. Your description should include information such as any new raw materials or products handled at your facility that might affect the nature or quantity of the discharge, any modifications to your process water/stormwater handling facilities, and the start-up or shutdown of any process or treatment units.
   1. There are no treatment system changes.
   2. Refer to exhibit "F". Since the issuance of our last permit we have constructed ponds #8, 8½, and 9. We have filled #8, 8½ and are currently discharging into #9. Our proposed pond #10 is now under construction to be completed about the end of July, 1989.

AUG 1

00093

5. Report the average from the Monthly Effluent Report for the previous 24 months of all parameters regulated by your permit in the following table. Also indicate the total number of excursions (NE) over the last 24 months for each constituent.

Monitoring Start Date 4-87 Monitoring End Date 3-89

CONSTITUENT	OUTFALL	DAILY AVERAGE	UNITS	NE	DAILY MAXIMUM	UNITS	NE	NUMBER OF SAMPLES
BOD	001	10.28	ppm	0	36	ppm	0	135
PH	001	8.6	ppm	0	9.0	ppm	0	135
TSS	001	33.90	ppm	1	130	ppm	2	135
Oil & Grease	001	.02	ppm	0	2	ppm	0	135
Arsenic	001	.008	ppm	0	.02	ppm	0	14
Barium	001	.05	ppm	0	.12	ppm	0	14
Cadium	001	0	ppm	0	0	ppm	0	14
Chromium	001	.003	ppm	0	.01	ppm	0	14
Copper	001	.01	ppm	0	.03	ppm	0	14
Lead	001	.008	ppm	0	.15	ppm	0	14
Magnesse	001	.10	ppm	0	.20	ppm	0	14
Nickel	001	.005	ppm	0	.03	ppm	0	14
Silver	001	0	ppm	0	0	ppm	0	14
Zinc	001	.007	ppm	0	.02	ppm	0	14
Selenium	001	0	ppm	0	0	ppm	0	14
Mercury	001	0	ppm	0	0	ppm	0	14
Flow	001	1.0	MGD	0	1.0	MGD	0	135
TOC	001	66.22	ppm	0	84	ppm	0	135

Briefly explain any persistent excursions and briefly discuss any major corrective actions.

AUG 11 89

6. Are you currently required to meet any implementation schedule for the construction, operation, or upgrading of your wastewater treatment equipment? This includes Federal, State, or local authority permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant and loan conditions. XX Yes ___ No

If yes, provide a brief summary of the requirements.

1. Construction plans and specification are to be submitted for any additional ponds.
2. Monthly construction progress reports while construction proposed ponds.

7. Describe the general nature of your business and list any Standard Industrial Classification codes that apply. Conveyance of sludges generated at the G.C.W.D.A. Washburn Tunnel facility. The storage and treatment of effluent to be discharged at outfall .001.

SIC Code(s) 49 , _____ , _____ , _____ , _____ , _____

Business operates 24 hours/day 7 days/week.

8 Do you discharge or plan to discharge treated effluent into any surface water in the State?
XXX Yes ___ No. If no, skip to No. 11

If yes, what effluent volume do you plan to discharge?

Outfall	Flow (hrs/day)	Daily Average Flow (MGD)	Daily Maximum Flow (MGD)	I or C*	P or G**
001	24	1.0	1.0	I	P and G

*Intermittent or Continuous
**Pump or Gravity Flow. If pump, indicate pump capacity (gpm).

Maximum cap. of pump is 1200 g.p.m.
If yes, will this discharge be seasonal?
Explain. Average discharge will consist of 17 to 30 days and 3 to 5 times per year varing with rain fall.

00095

AUG 1

9. Describe the loca of each discharge outfall a r sample point (e.g. Outfall 001; at the outlet wier of the treatment plant prior to entering the river: Outfall 002; at the outlet of the pond in the northeast corner of company property). Be specific.

OUTFALL	FLOW MEASURING DEVICE TYPE	DESCRIPTION OF LOCATION
001	Wier	The outfall wier is located at ground level where the oxidation pond #4 and small oxidation pond meets being 150' from the I.C.W.

10. For a surface water discharge describe characteristics of the receiving waterbody at the point of the discharge. (Note: This section does not apply to land disposal facilities).

(A) Receiving water body type (check as appropriate):

(1) ( ) Stream:

( ) Intermittent
( ) Intermittent with Persistent Pools
( ) Perennial

Basis of assessment: ( ) USGS flow records, ( ) personal observation, ( ) historical observation of adjacent landowner,
( ) other, specify _____

(2) ( ) Lake or Pond

(3) (XXX) Bay or Gulf waters

(4) ( ) Tidal Estuary

Date and time of observation: During last discharge from April 1, 1989 to May 31, 1989

Was water body influenced by stormwater runoff during observations?
_____Yes XXX No

B. Dimension of Water Body During Dry Weather:

(1) Stream: N/A

(a) Obtain 2-3 cross-sections in a relatively uniform stretch of the stream. Submit average width and depth in feet:

Width_____ feet
Depth_____ feet

AUG 1

00096

(b) Obtain 3-5 velocities (floating chip or similar method) across the width of the stream at each cross section site. Submit average velocity in feet per second.

Velocity_____ feet per second

(c) Streambed slope from USGS map: _____%

(2) Lake, Pond, Bay or Gulf water IntraCoastal Waterway then into bay waters

(a) Surface area in acres: N/A

(b) Depth of water body at proposed discharge point in feet 10' I.C.W.

(c) Depth of discharge pipe: N/A

(C) General Characteristics of Water Body:

(1) Substrate: (50%) sandy, (%), gravel, (50%), muddy, (%) rocky

(2) Water (check as appropriate): ( ) clear, (XX) clouded, ( ) colored, ( ) turbid, ( ) odor, ( ) odorless, ( ) other specify _____.

(3) Stream channel modifications (check as appropriate): ( ) channelized, ( ) dammed, ( ) leveed, ( ) concrete lined, ( ) banks rip-rapped ( ) others, specify N/A.

(4) Which of the following statements best describes accessibility to water body downstream of the outfall (Circle one).

A. Most land publicly owned; numerous points of easy access

B. Most land publicly owned; limited number of easy access points

C. Most land privately owned; numerous points of public access

(D) Most land privately owned; limited number of public access points

(D) Describe any obvious water quality problems (surface scums, sludge accummulations, nuisance aquatic plant growth, discolored water, trash, etc.): Green algae growth sometimes causing higher T.S.S. and P.H.

(E) Uses of water body (observed or evidences of) (Check as appropriate): ( ) livestock watering, ( ) contact recreation, (XX) noncontact recreation, (XXX) fishing, ( ) domestic water supply, ( ) industrial water supply, (XX) navigation, ( ) irrigation, ( ) picnic/park activities, specify others: _____

AUG 1

00097

11. List any physical, chemical, and/or biological treatment processes that you use for the treatment of wastewater at your facility. This list should be specific and include each unit in the treatment process and dimensions (e.g. dissolved air floatation, chemical precipitation, equalization, pH control, aeration, steam stripping, clarification, anaerobic lagoon, settling, filtration).

Treatment Units

All open ponds with natural airation including two open oxidation holding ponds

12. Do you use or plan to use any lagoons, ponds, or impoundments for treatment, disposal, containment or evaporation of your wastewater? XX
Yes _____ No If yes:

(A) What are the dimensions of the impoundment(s)?

Description	Oxidation POND 1	Oxisation POND 2	POND 3	POND 4
Length	900 ft	1000 ft	_____ ft	_____ ft
Width	550 ft	280 ft	_____ ft	_____ ft
Depth	8 ft	8 ft	_____ ft	_____ ft

(B) What is the capacity of the impoundment(s)?

	POND 1	POND 2	POND 3	POND 4
Gallons	29.6 m.g.	16.8 m.g.	_____	_____
Acre-Feet	90.9	51.4	_____	_____

(C) Are the impoundments lined? If yes, describe the pond liner (e.g. in-situ clay, compacted clay, synthetic liner) and submit any available liner permeability data.

	Yes	No	Liner Description
Pond 1	XX	_____	In-situ clay and comp. clay
Pond 2	XX	_____	In-situ clay and comp. clay
Pond 3	_____	_____	
Pond 4	_____	_____	

00098

AUG 1 1 89

Page 14 (D)

Well data:

PH	6.92
BOD	2
COD	50
TOC	.9
Sulfide S	0
Cyanide	0
Arsenic	0
Chromium	.043
Mercury	0

Average of well data from October, 1987 thru January, 1989.

(13 A)

(D) Are there any leak detection systems or monitor wells in place or planned? XX Yes ____No
If yes, briefly describe the leak detection system and/or attach any available monitor well data. Five (5) monitor wells - location on exhibit "E" indicated as M. Well data attached.

13. Attach a flow schematic showing each treatment unit and all sources of wastewater flow into the treatment plant. This should include process wastewater, cooling water, domestic wastewater, and stormwater. A water balance using average flows for each waste stream must be included. (See example on next page).
See exhibit "C"

14. Attach a plot plan showing the location of each unit of the treatment plant. Trace the process wastewater flow to the treatment plant and the stormwater flow with a highlighter. Also, show the location of sumps, earthen impoundments, and water wells.
See exhibit "C"

15. Provide a list of raw materials handled at your facility. Be specific and avoid trade names.

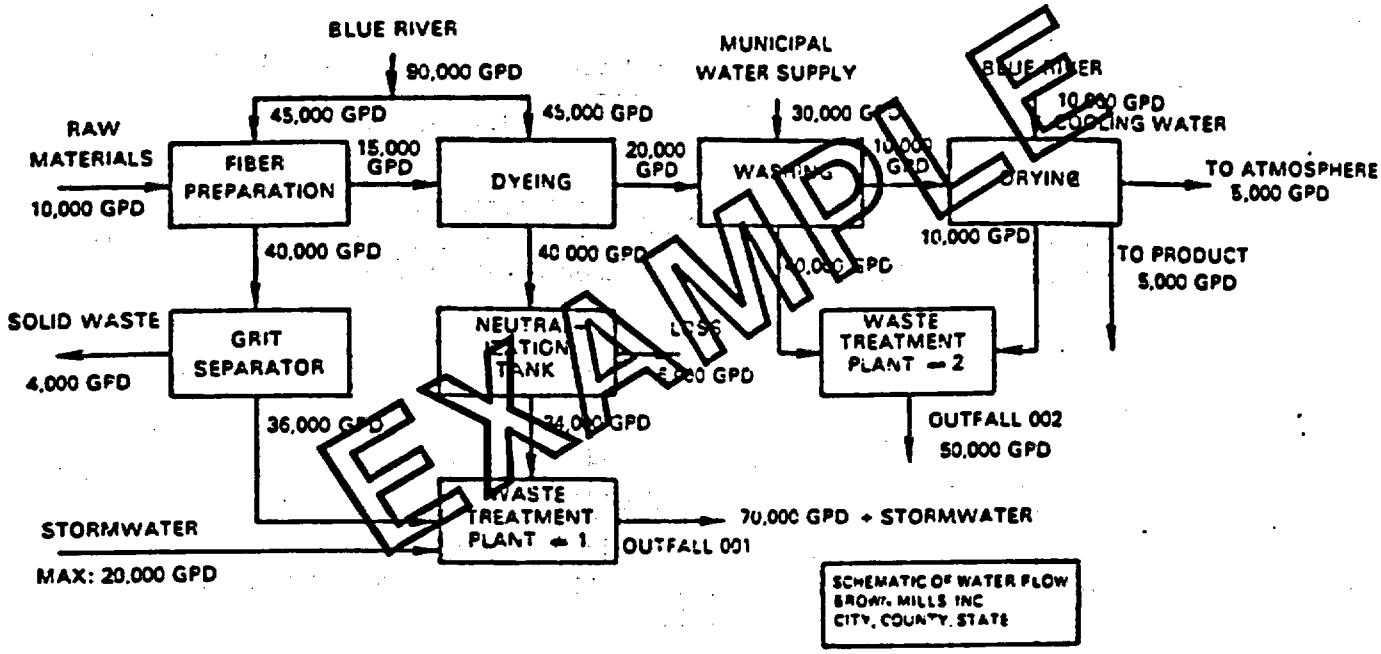
RAW MATERIALS

G.C.W.D.A. Washburn Tunnel facility activated sludge material (non-toxic, non-hazardous).

16. Are any cooling towers or boilers used at your facility? ____Yes XX No

If yes, list the water treatment chemicals used for control of scaling, corrosion, and bacteria. Be specific and avoid trade names. Attach manufacturer data sheets if available.

LINE DRAWING



EXAMPLE

17. How is the disposal of domestic sewage handled at your facility?

No permanent structures or permanent employees on site. Disposal handled by vessels serving facility.

18. How is stormwater runoff handled at your facility?

Drainage area for stormwater runoff. 155 acres It is contained in the ponds while oxidized through surface evaporation or discharged through the oxidation ponds after meeting the discharges parameters.

19. List the local area rainfall and your source of information.

Average rainfall for wettest month. 4.93 in/month
25-year 24-hour rainfall. 10.1 inches

Source: Climatic Data Service 1-704-259-0682 (in. and month)
Publication U.S.A. Dept. of Commerce Tech paper No. 40 Rain Fall freuquency Atlas of the.U.S.A. Commerce Weather Bureau (25 yr. / 24 hr.)

20. Is your treatment facility located above the 100-year frequency flood level? XX Yes ___ No What is your source of information? Levee construction elevation is to be 14.5 feet for our location. Source: U.S. Corp. Engr.

If no, what protective measures do you plan to use?

Pond levees constructed at above 14.5 feet elevation necessary to comply with the 100 year flood cycle.

Source:

21. Are hazardous wastes stored, processed, or disposed of within the wastewater treatment system at this facility?

___Yes XX No.

If yes, list the wastes and the units used to store, process, or dispose of hazardous wastes.

N/A

22. Radioactive materials shall not be discharged in excess of the amount regulated by 25 TAC Sections 289.11-289.126 (relating to Texas Regulations for Control of Radiation). If you mine, use, store, or process any radioactive material(s) list the radioactive materials and provide the results of at least one analysis of your effluent in picocuries per liters (pCi/l). (This is not applicable to radioactive materials fixed in a device or instrument.) If this is an application for a new facility submit results from similar facilities, treatability studies, or literature sources.

N/A

23. If you use or plan to use land application for treatment or disposal of your wastewater you must provide the following additional information:

a. N/A Provide water balance and storage volume calculations. (Example calculations can be found in 31 TAC Sections 317.10(c)(A) and 317.10(c)(B)). Also, provide nitrogen balance calculations if nutrient loading is a factor at your site.

b. Provide analyses of soil in the land application area for pH, total nitrogen, potassium, phosphorus, conductivity, and sodium adsorption ratio. A minimum of one soil sample per twenty-five acres should be tested.

c. If available indicate the standard soil classification as described by the U.S. Department of Agriculture Soil Conservation Service.

d. For waste disposal activities subject to 31 TAC Chapter 313, entitled Edwards Aquifer Rules, provide a report that describes the surface geologic units present and that identifies the location and extent of any significant recharge areas in the land application site.

e. Describe the crop system including nutrient uptake rates, growing seasons, and the number of harvests planned per year.

f. Describe any tailwater control systems.

AUG 1

g. Describe the application method and equipment. (e.g. row irrigation, spray irrigation using a center pivot sprinkler system)

h. Do you irrigate or plan to irrigate as a means of treatment and/or disposal?
____Yes ____No. If yes:

(1) How much land do you plan to irrigate?_____ acres

(2) What is the design application rate? _____ acre-feet/acre/year

_____ gpm

(3) What is the design application frequency? ____ hours/day
____ days/week

(4) What is the design BOD_5 loading rate? _____ lbs BOD_5/acre/day

i. Do you use or plan to use overland flow for treatment of your wastewater? ____Yes XXX No. If yes:

(1) How much land do you plan to utilize? _____ acres

(2) What is the slope of the application area? _____ %

(3) What is the slope length? _____ feet

(4) What is the design application rate? _____ acre-ft/acre/yr

_____ gpm

_____ gpm/foot slope width

(5) What is the design BOD_5 loading rate? _____ lbs BOD_5/acre/day

(6) What is the design application frequency? _____ hours/day

_____ days/week

24. All permittees who either discharge treated effluent to waters in the State or utilize land application or evaporation for wastewater treatment and/or disposal shall provide the results of at least one analysis for every pollutant in Table 1. If this is an application for a new facility submit results from similar facilities, treatability studies, or literature sources. Report an average and maximum value if several analytical results are available. Fill out a table for each outfall that contains process wastewater.

TABLE 1

OUTFALL_____

POLLUTANT	mg/l* CONCENTRATION AVG.	MAX	NUMBER OF SAMPLES
Carbonaceous Biochemical Oxygen Demand (5-day)	(1	(1	1
Chemical Oxygen Demand**	230	230	1
Total Organic Carbon**	62	62	1
Total Suspended Solids	32	32	1
Oil and Grease	(1(0.7)	(1(0.7)	1
Ammonia (as N)	.10	.10	1
Total Arsenic	(0.01	(0.01	1
Total Cadmium	(0.01	(0.01	1
Trivalent Chromium	(0.01	(0.01	1
Hexavalent Chromium	(0.01	(0.01	1
Total Copper	.02	.02	1
Total Lead	(0.05	(0.05	1
Total Mercury	(0.001	(0.001	1
Total Nickel	.06	.06	1
Total Selenium	(0.01	(0.01	1
Total Silver	(0.01	(0.01	1
Total Zinc	.02	.02	1
Total Dissolved Solids	2986	2986	1
Sulfates	30	30	1
Chlorides	856	856	1
Temperature(°F)			
pH(Standard Units; min/max)	8.5	8.5	1

* Indicate units if different than mg/l
**Analyze for either Chemical Oxygen Demand or Total Organic Carbon

AUG 1 1

HAZARD

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : Head, Industrial Unit DATE: 9/4/90
and Steve Schrader Engineer
THRU : Asst. Chief, Ground Water Conservation Section, and
Chief, Wastewater Permits Section

FROM: J.N. Russell, Geologist, Ground Water Protection Unit

SUBJECT: Application No. 90445, Permit No. 01221
Name of Applicant
Galveston County

Our staff has reviewed the subject application to determine if there may be a possible hazard to ground-water quality as a result of the applicant's proposal. From the technical data included in and with the application, and from our review of the geohydrologic data available in our files relevant to the applicant's disposal site area, it is our opinion that because there are permeable soils underlying the proposed facilities, these facilities will present a significant hazard to the quality of ground water in the area if the applicant's pond s are not lined. Please note the "Comments" section of the attached evaluation. Also, any leakage from the facilities would pose a potential hazard to surface water resources.

for Burgess Stengl
J.N. Russell
RWM:is

00106

00107

UND-WATER IMPACT EVALUA

PERMIT NO. 01221 COUNTY Galveston

APPLICATION NO. 90645 NEW PERMIT ____ AMENDMENT -

Renewal ✓

APPLICANT: McGinnes Industrial Maintenance Corporation

LOCATION: The site is located adjacent to Carancahua Lake and the Intercoastal Canal on Hall Bayou. Five miles southwest of Hitchcock.

TREATMENT/DISPOSAL SYSTEM: The existing facility consists of a series of ponds which are used to settle, stabilize, and store sludge. A discharge into the Intercoastal Canal is made after the sludge has been "treated" in oxidation ponds and discharge parameters have been obtained.⊛ Sludge is from the Gulf Coast Waste Disposal Authority's Washburn Tunnel Plant. This plant treats wastes from refineries, transport terminals, chem. & petrochem. plants, and a pulp & paper plant.

SURFACE FM.: The sludge disposal site is located on alluvium which is sand, silt, and clay. The Beaumont Fm. underlies the alluvium. The Beaumont Formation is mostly clay, silt, and sand, and is 100± feet thick.

COMMENTS: See attached

REFERENCES: ① Geologic Atlas of Texas, Houston sheet; ② USDA Soil Survey of Galveston County; ③ TWC Water Well Drillers' Files; Plotted - 65-48-8, 65-56-2 & 3; Located 65-48; ④ TBWE Bull. 5502; ⑤ TWDB Rept. 295

PREPARED BY Burgess Stengl & [signature] DATE 8/31/90

⊛ Oxidation ponds are lined with in-situ clay and compacted clay. All other ponds are assumed to be not lined.

Comments: McGinnes - Galveston Co

Soils in the area of the sludge disposal site are the Placedo clay and Ijam clay series. These soils are reported to be 5 feet deep and meet the TWC requirements for pond linings. Site specific borings taken at the disposal area encountered clay from the surface to a depth of 40 feet with silty sand layers at about 13 to 17 feet and clayey sand to stiff sand clay from 28 to 33 feet. The extent of the permeable layers is not known. The applicant's engineering Firm states that "due to the geological deposition in the area, variances may occur". * Test wells (65-56-2A) drilled for McGinnes Industries show clay from the surface to a depth of 21 Feet below ground level (BGL), sand from 21 to 22 Feet BGL, and clay from 22 to 26 Feet BGL. These wells reported a static water level of 1 foot BGL. The quality of this water is not known at this time. A nearby well, 65-56-3B, was drilled to 813 Feet BGL, and has a water level of 180 Feet BGL. This well is used for industrial purposes, a chemical analysis was not made. Surface casing recommendations for wells in the area recommend that ground water from the surface to a depth of 1000 feet be protected. TWC cross sections indicate sand saturated with water containing less than about 3000 mg/l to be down to approx. 900 to 1000 Feet BGL in the disposal area. These cross sections run both northwest to southeast and east-west, see attached. The water occurs in the Chicot aquifer. Because of the absence of a regional confining layer (clay), the potential exists for the impounded constituents to contaminate the surface water in the area and the underlying useable quality water. Therefore, we recommend that an expanded monitor well program be developed that would detect contamination originating from the sludge pits, and also lining of additional ponds to TWC specifications.

* Applicants cross sections of the holding ponds indicate the presence of shallow silt and sand str[illegible]

McGinnes Ind. Maintenance Corporation
Galveston County

Soils: All soils in this general area are clay to 5 feet.

Pd - Placedo clay

ImA - Ijam clay

Placedo Clay

	Depth (In.)	Unified Class.	200 sieve	Liq. Lim.	Plasticity
Clay	0-36	CL, CH	85-100	45-70	25-45
Stratified clay to fn. sandy loam	36-60	CL, CH	75-100	35-60	20-40

Ijam Clay

Clay	0-10	CH, CL	70-95	45-80	25-55
Clay	10-56	CH	80-98	60-85	35-55
Sand	56-61	SP-SM, SP	2-10	<30	NP-3

COMMISSION SUMMARY

McGinnes Industrial Maintenance Corporation

Renewal of Permit No. 01221

The existing permit authorizes the discharge of wastewater from an industrial wastewater treatment plant sludge disposal facility. Effluent limitations were added based on TWC surface water quality standards at 31 TAC 307.6. The daily maximum flow is limited to 1.0 MGD.

The plant site is adjacent to Carancahua Lake and the Intracoastal Canal on Hall Bayou Ranch property in the L.T. Yowell Survey, Galveston County, Texas. The effluent is discharged to the Intracoastal Waterway; thence into West Bay, Segment No. 2424 of the Bays and Estuaries. The segment is effluent limited.

In accordance with the Texas Surface Water Quality Standards, the Commission staff must determine the existing uses for the receiving water in the area of the proposed discharge. The designated uses for Segment No. 2424 are high quality aquatic habitat, contact recreation, and oyster waters. The effluent limits in the draft permit will maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and/or revisions.

Steven W. Schrader

Steven W. Schrader

Sept 21, 1990

Date

TECHNICAL SUMMARY

McGinnes Industrial Maintenance Corporation

TWC 01221
TX0004910

The permittee has applied for renewal of existing TWC Permit No. 01221 issued September 18, 1984. The permit is for wastewater discharge of a maximum of 1.0 MGD from a sludge disposal facility. Sludge from the Gulf Coast Waste Disposal Authority Washburn Tunnel wastewater treatment plant is transported by barge to lagoons at the McGinnes site. The sludge is pumped from the barges into the lagoons. The GCWDA Washburn Tunnel Plant treats wastewater from a bleached kraft paper mill, two petroleum refineries, a bulk chemical storage terminal, a petroleum bulk station and terminal, a domestic sewage system, and organic and inorganic chemicals manufacturing plants. The sludge is neither dewatered nor digested prior to being disposed of in the lagoons. Approximately 60,000 to 70,000 cubic yards of sludge are disposed of each month. The sludge has been classified as a Class II solid waste.

The disposal site is divided into a southern portion (Lower Area Holding Ponds) which is adjacent to the Intracoastal Waterway and a northern portion (Upper Area Holding Ponds). According to the permit renewal application, approximately 240 acres of lagoons have been filled with sludge. Currently, sludge is being pumped into a 15 acre lagoon on the northernmost end of the Upper Area Holding Ponds. This lagoon was completed and began receiving sludge in 1989.

Supernatant and rainfall runoff which is generated from the sludge disposal operation flow from the 15 acre lagoon through a ditch to ponds numbered 1 and 2 in the Upper Area Holding Ponds. Water then flows from these ponds through a 10 inch pipe to three of the ponds on the northern end of the Lower Area Holding Ponds. From there, the water flows through a ditch and pipe conveyance system to one of two oxidation ponds. The oxidation ponds are alternately filled and emptied so that water undergoes biological treatment prior to discharge through outfall 001. The permittee discharges about 90 days per year.

The ponds and sludge disposal lagoons were created by building levees from in-situ clays. Levees for the holding ponds were constructed to protect from a fifty year storm frequency (12.5 feet above mean sea level). The levees for the 15 acre pond currently in use are built to protect from a 100 year flood (14.5 feet above mean sea level). In-situ soils were used for pond linings.

Permit Limitations

The existing permit included limits on BOD-5, TSS, COD, and Oil and Grease. These were continued in the proposed permit although the daily maximum / average oil and grease limits were reduced to 15 / 10 mg/L, respectively to be consistent with other permits. Once per day monitoring was also continued for these parameters. Limits on heavy metals were based on Water Quality Standards at 31 TAC 307.6 where these were more stringent than the existing limits which were based on the Hazardous Metals Rules at 31 TAC 319. The more stringent limits become effective following a two year interim phase. The limits based on 31 TAC 319 were continued for Arsenic, Barium, Chromium, Manganese, and Selenium. Twice/week sampling is continued from the existing permit. Effluent limits for Dioxins and Furans were added due to the presence of waste from a bleached kraft paper mill in the sludge. This limitation is consistent with those imposed on other discharges that contain waste from a bleached kraft paper mill. The quarterly monitoring frequency is also consistent

with other dioxin discharge limits in the state. The Dioxin/Furan limits become effective following a two year interim period during which a reporting requirement is in effect.

Other Requirements

A significant number of Other Requirements were added to the proposed permit starting on page 8.

1. A 24-hour notification requirement prior to discharge is continued from the previous permit (previously number 3. in PART III).

2. The disposal site is limited to only sludges produced from the GCWDA Washburn Tunnel Plant. This restriction is continued from the existing permit. Furthermore, an additional paragraph is added that requires a permit amendment if the sludge is significantly changed due to different industrial processes contributing to the GCWDA system.

3. Inspection and maintenance requirements are added to address erosion of side slopes of the lagoon embankments. Erosion protection is necessary to maintain the integrity of the dike and prevent the uncontrolled release of waste.

4. Requirements for a groundwater monitoring system are included to detect releases from impoundments to the waters in the state. Leakage from the impoundments could cause violations of the TWC Surface Water Quality Stds. The existing permit requires sampling of five monitoring wells which were installed in the 1970's. The monitoring of these wells is continued in the proposed permit. However, due to the wide spacing and the lack of information on background conditions, the data from these existing wells is considered inconclusive. Therefore, the permittee is required to submit a plan for a monitoring program that includes additional wells. The wells are to be located adjacent to lagoons that are currently used for sludge disposal or wastewater treatment.

5. Written approval is required for construction of new ponds. Plans and specifications in accordance with design criteria for sludge only landfills (31 TAC 317.14 (g)) must be submitted.

6. Restrictions against excavation in tidal nursery areas is continued from the existing permit.

7. The existing permit requires that full ponds be closed although this has not been accomplished on any ponds at this time. Closure requirements are continued in the proposed permit with specific requirements for covers and side slopes and maintenance.

8. Mixing zone definition is consistent with discharges into tidal waters.

9. Monitoring requirements for dioxins/furans are described. Fish tissue monitoring is also included consistent with other discharges in Texas that contain effluent from bleached kraft paper mills.

10. Annual analysis for priority pollutants is added to identify specific compounds, if any, that need to be included in permit limitations.

11. A two foot freeboard requirement is added consistent with other permitted facilities in Texas.

12. Twice per year testing of sludge for hazardous waste characteristics based on the TCLP test is added to confirm that the sludge is not hazardous.

13. Biomonitoring requirements are added in order to evaluate the toxicity of the effluent. Analytical results show the presence of lead and copper in concentrations that may exceed toxic criteria. Quarterly monitoring is required due to the intermittent nature of the discharge. Chronic biomonitoring is required because the discharge is to the Intracoastal Waterway which has significant aquatic life uses.

The plant site is located adjacent to Carancahua Lake and the Intracoastal Canal on Halls Bayou Ranch property in the L.T. Yowell Survey, Galveston County, Texas. The effluent is discharged to the Intracoastal Waterway; thence into West Bay, Segment No. 2424, of the Bays and Estuaries. The receiving water uses deemed desirable are high quality aquatic habitat, contact recreation, and oyster water. The proposed permit renewal is based on:

The existing TWC permit issued September 18, 1984.
TWC Surface Water Quality Standards at 31 TAC 307.6, approved April 28, 1988.
The TWC application received August 11, 1989.
Information submitted with letter from Wheat, Thornton, and Burnett to TWC dated January 30, 1990.
31 TAC 317.14 (g) - Appendix F - Sludge Disposal, Sludge-only landfill.

Once the draft permit is completed, it is sent to the Notice Section of the Texas Water Commission where a notice is compiled. The applicant must publish the notice in a newspaper generally circulated in the county where the facility is located. A thirty-day public comment period begins from the date of publication. If a request for a public hearing is filed with the Commission during this time, a public hearing may be held which would result in a proposal for decision. The proposal for decision or the draft permit is placed on the commission's agenda. For additional information about this application contact Steven W. Schrader at (512) 463-8438.

Steven W. Schrader
Steven W. Schrader

Sept. 21, 1990
Date

TEXAS WATER COMMISSION

NOTICE OF APPLICATION FOR WASTE DISCHARGE PERMIT RENEWAL

MCGINNES INDUSTRIAL MAINTENANCE CORPORATION, 5837 Northdale, Houston, Texas 77087 has applied to the Texas Water Commission for renewal of Permit No. 01221 which authorizes a discharge of sludge supernatant at a volume not to exceed 1,000,000 gallons during any 24-hour period from a sludge disposal facility. The plant site is adjacent to Carancahua Lake and the Intracoastal Canal on Hall Bayou Ranch property in the L.T. Yowell Survey, Galveston County, Texas. The effluent is discharged into the Intracoastal Waterway; thence into West Bay, Segment No. 2424 of the Bays and Estuaries.

In accordance with the Texas Surface Water Quality Standards, the Commission staff must determine the existing uses for the receiving water in the area of the proposed discharge. The designated uses for Segment No. 2424 are high quality aquatic habitat, contact recreation, and oyster waters. The effluent limits in the draft permit will maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and/or revisions.

The Executive Director of the Texas Water Commission has prepared a draft permit which, if approved by the Commission, will specify conditions and limitations generally the same as those currently enforced by the existing permit except that effluent limitations have been made more stringent and biomonitoring requirements have been added. It is proposed that the expiration date of the renewed permit be specified as midnight, five years after date of Commission approval.

Legal Authority: Section 26.028 of the Texas Water Code and 31 TAC Chapter 305 of the Rules of the Texas Water Commission.

No public hearing will be held on this application unless an affected person who has received notice of the application has requested a public hearing. Any such request for a public hearing shall be in writing and contain (1) the name, mailing address and phone number of the person making the request; and (2) a brief description of how the requester, or persons represented by the requester, would be adversely affected by the granting of the application. If the Commission determines that the request sets out an issue which is relevant to the application, or that a public hearing, would serve the public interest, the Commission shall conduct a public hearing, after the issuance of proper and timely notice of the hearing. If no sufficient request for hearing is received within 30 days of the date of publication of the notice concerning the application, the permit will be submitted to the Commission for final decision on the application.

Requests for a public hearing on this application should be submitted in writing to Christopher Gee, Assistant Chief Hearings Examiner, Texas Water Commission, P.O. Box 13087, Capitol Station, Austin, Texas 78711, Telephone (512) 463-7905. Information concerning any technical aspect of this application can be obtained by writing Steven Schrader, Wastewater Permits Section, Texas Water Commission, P.O. Box 13087, Capitol Station, Austin, Texas 78711, Telephone (512) 463-8201.

Issued this 31st day of October, 1990.

(Seal)

Brenda W. Foster

Brenda W. Foster, Chief Clerk
Texas Water Commission

MCGINNES INDUSTRIAL MAINTENANCE CORPORATION
TWC PERMIT 01221
TWC PROPOSED AMENDMENTS, MIMC ALTERNATIVES, RATIONALE

TWC PROPOSED EFFLUENT LIMITS

The TWC has proposed more stringent discharge limits on the following items (for clarity, only the proposed daily average limits are shown). The new limits, according to the TWC, are based on 31 TAC §307.6, Water Quality Standards, where more stringent than 31 TAC §319, Wastewater Treatment Regulations.

Constituent	Daily Average Current, ppm	Daily Average Proposed, ppm
Cadmium	0.1	0.07
Copper	0.5	0.01
Lead	0.5	0.06
Nickel	1.0	0.15
Silver	0.05	0.004
Zinc	1.0	0.15

MIMC ALTERNATIVE TO TWC EFFLUENT LIMITS

Effluent limits should remain at the current levels, with the exception that testing and reporting of dioxins and furans contained in a quarterly grab sample shall be required.

RATIONALE FOR ALTERNATIVE TO EFFLUENT LIMITS

The specific numeric criteria listed in 31 TAC §307.6 for limits on metals are for either acute or chronic criteria, as described in the following sections.

> Acute criteria are for a 24-hour average of samples taken from the receiving waters beyond the zone of initial dilution - the extent of which has not been defined for the permitted facility
>
> Chronic criteria are for a weekly average of samples taken from the receiving waters at the edge of the mixing zone (200 ft from discharge contact with receiving waters).

TWC has provided no evidence that expected instream concentrations would exceed specific numeric criteria if current permit levels are maintained. Section 307.8(b)(4) states "Water quality standards do not apply to treated effluents at the immediate point of discharge - prior to any contact with either ambient waters ..." 31 TAC §307.6 clearly is written for daily averages (acute criteria) and weekly averages (chronic criteria) for allowable concentrations of toxic materials, after mixing with receiving waters. To adapt these criteria to the daily average, daily maximum, and single grab sample maximum of undiluted effluent samples is not appropriate.

TWC PROPOSED ITEM 1

The permittee shall notify the Galveston County Health Department and District 7 office of the Texas Water Commission at least 24 hours prior to the commencement of the discharge.

MIMC ALTERNATIVE TO ITEM 1

No alternative is proposed by permittee.

TWC PROPOSED ITEM 2

Sludges discharged to this treatment and disposal system shall be limited to sludges produced directly as a result of the treatment of wastewaters at the Gulf Coast Waste Disposal Authority's Washburn Tunnel Plant. Wastewater or sludges from origins other than the Washburn Tunnel Plant treatment processes are not authorized to be treated or disposed of at this site unless specific prior approval is obtained from the Texas Water Commission.

The permittee shall notify the Industrial Wastewater Permits Unit of the Texas Water Comission of changes in the industrial users which discharge wastewater to the GCWDA Washburn Tunnel plant. In the event that the sludge generated by the GCWDA Washburn Tunnel Plant is significantly changed due to the addition of wastes from industrial processes not considered during the preparation of this permit, the permittee shall submit data on the new sludge characteristics. A permit amendment may be required prior to accepting the different sludge.

MIMC ALTERNATIVE TO ITEM 2

Sludges discharged to this facility shall be limited to sludges produced directly as a result of the treatment of wastewaters at the Gulf Coast Waste Disposal Authority's Washburn Tunnel Plant. Wastewater or sludges from origins other than the Washburn Tunnel Plant treatment processes are not authorized to be treated or disposed of at this site unless specific prior approval is obtained from the Texas Water Commission.

RATIONAL FOR ITEM 2 ALTERNATIVE

MIMC concurs with the intent of TWC Item 2, that only GCWDA Washburn Tunnel Plant sludge is authorized for disposal. However, specific knowledge of GCWDA Washburn Tunnel Plant processes and users rests with the generator, GCWDA. Any notification regarding changes in processes or users should be made to the TWC and MIMC by the GCWDA Washburn Tunnel Plant, in accordance with the general notification requirements under 31 TAC §335.6(c) for generators of industrial solid waste.

TWC PROPOSED ITEM 3

All side slopes (embankment walls) for the sludge disposal lagoons shall be protected by planting grass or riprapping. Where embankment walls are subject to wave action, riprapping shall be installed. Vegetation shall be mowed at least twice per year.

The permittee shall visually inspect the perimeter levees of all disposal lagoons on a monthly basis. The inspection shall identify any embankment erosion or seepages from the embankment walls. Immediate action shall be taken to repair damage due to erosion or halt seepage from embankment walls.

The permittee shall submit an annual report during the month of September to the Program Support Unit of the Water Quality Division of the Texas Waster Commission that certifies the structural integrity of the lagoon embankments. The report shall be prepared by a Professional Engineer registered to practice in the State of Texas.

MIMC ALTERNATIVE TO ITEM 3

All exterior embankment side slopes for the sludge disposal lagoons shall be maintained to preserve their overall integrity and stability. In areas in which localized erosion encroaches on a 1.5H:1V "core" embankment, permittee shall take required action to restore affected area of the embankment to its original configuration.

The permittee shall submit an annual report during the month of September to the Wastewater Permits Section of the Texas Water Commission to document that regular inspections have been made, and that all exterior embankments have no areas upon which a 1.5H:1V core is encroached.

RATIONALE FOR ALTERNATIVE TO ITEM 3

Grassing and mowing is not desirable. Inspection of inactive ponds reveals a thriving plant community has been established which provides habitate for wildlife. Plant species that have become established in older pond embankments have been listed in a report by LGL Limited for the U.S. Fish and Wildlife Service on July 21, 1977.

Pond design is based on an embankment cross-section of 1.5H:IV of compacted, select fill, with a shell of random fill. MIMC inspects embankments regularly, and maintains embankments as required. Numerous inspections by the TWC and EPA throughout the facility's life have documented the adequate condition of embankments. Several examples are detailed in Exhibit 1.

00121

TWC PROPOSED ITEM 4

A. Permittee shall design, construct, and maintain the facilities to monitor ground water on a permanent basis. Ground water monitoring shall, at a minimum, consist of a detection monitoring system for the uppermost water bearing formation underlying the sludge disposal site. The purpose of the ground water monitoring system shall be to detect seepage, if any, from the existing sludge disposal site. The monitoring system shall include the five existing wells which are specified in item 6 of Part III on page 11b of Permit No. 01221 which was issued on September 18, 1984. Additional monitoring wells shall be installed:

   i. Adjacent to the oxidation ponds which are on the south end of the facility,

   ii. Adjacent to the three sludge holding ponds which are on the north end of the lower area holding ponds and which receive wastewater from the upper area holding ponds prior to the oxidation ponds,

   iii. Adjacent to the ponds on the northern portion of the facility (Ponds numbered 1 through 10 on exhibit F submitted with the permit renewal application dated August 4, 1989), and

   iv. At a location or locations sufficiently removed from the sludge disposal operations to provide information on the quality of the background or unimpacted ground water.

B. The permittee shall submit to the Wastewater Permits Section of the Texas Water Commission in Austin a report within six months of permit issuance that describes the plan for horizontal and vertical placement of the monitoring wells in addition to the screen lengths of the wells. A plan for the construction methods and materials for the wells shall also be included. The report shall be prepared by a qualified geologist or geotechnical engineer and shall include a technical justification for the number and location of the wells in the monitoring plan. Following review of the plan and comment by the staff of the Water Quality Division of the Texas Waster Commission, the permittee shall proceed with installation of the wells.

C. The permittee shall also submit to the Wastewater Permits Section of the Texas Water Commission within six months of permit issuance a ground water sampling and analysis plan that will

accurately measure the concentration in the ground water of the following constituents: pH, biochemical oxygen demand (5-day), total organic carbon, toluene, sulfide, chromium, lead, and mercury. In addition, the ground water elevation in each monitoring well shall be measured each time the well is sampled. After review and comment of the plan by the staff of the Texas Water Commission, new wells shall be sampled quarterly for the first year following installation and then once every six months thereafter. The five existing wells shall continue to be sampled once every six months.

D. The permittee shall determine the ground water flow rate and direction of flow in the upper transmissive zone at least semi-annually.

E. For constituents listed in paragraph C above, the permittee shall determine whether there is a statistically significant increase (or pH decrease) in concentrations in the ground water monitoring wells adjacent to the sludge disposal ponds compared with background values. The permittee shall notify the Executive Director within seven (7) days of becoming aware of a statistically significant increase (or pH decrease) over background).

F. For each constituent and monitoring well listed in the paragraph above, the permittee shall construct and maintain a graph using a scale sensitive enough to accurately depict variations in concentration with respect to time. The graphs shall be updated within thirty (30) days of receiving sample results.

G. Within sixty (60) days of becoming aware of a statistically significant increase (or pH decrease) over background or a significant trend toward increasing (decreasing for pH) concentrations, the permittee shall submit a plan to the Wastewater Permits Section of the Texas Water Commission for determining the lateral and vertical extent of contamination in addition to assessing the rate of migration of the waste constituent(s). The plan shall also include a program of measuring the concentration of priority pollutants in the waters and sediments adjacent to the sludge disposal site. A plan for corrective actions shall also be submitted. The plans shall be implemented following review and comment by the Wastewater Permits staff of the Texas Water Commission.

H. An annual report shall be submitted during the month of September to the Program Support Unit of the Water Quality Division of the Texas Water Commission which includes:

i. A summary of all detection ground-water monitoring analyses and statistical evaluations conducted in the previous year,

ii. Results of measurements of ground water elevation and movement made during the previous twelve months,

iii. Copies of graphs showing variations in concentrations of constituents with time.

I. In addition, the results will be maintained in the permanent records of McGinnes Industrial Maintenance Corporation's Galveston County site and available for inspection by Texas Water Commission Representatives.

MIMC ALTERNATIVE TO ITEM 4

Within six months of permit issuance, permittee shall submit a revised groundwater monitoring plan. The revised plan shall include:

1. Additional monitoring wells, including locations and installation details, where required.

2. Sampling methods, including frequency, scope of analyses, reporting and evaluation.

RATIONALE FOR ALTERNATIVE TO ITEM 4

MIMC is willing to do more groundwater monitoring. MIMC has consistently cooperated with the TWC and its predecessors to conduct groundwater monitoring. In fact, a review of the records indicates the number and locations of the five existing wells were selected/approved by the TWC (Reference TWQB Telephone Memo 9/8/75).

Specific requirements for the additional wells cannot reasonably be established prior to engineering evaluation. The revised groundwater monitoring plan will be approved by the TWC, so there is no advantage to imposing specific requirements prior to actual plan development.

TWC PROPOSED ITEM 5

New sludge disposal lagoons shall not be constructed unless written approval is obtained from the Wastewater Permits Section of the Texas Water Commission. Complete plans and specifications shall be submitted for new lagoons that give a description of the location, size, method of construction, testing and inspection procedures and methods of closure. The plans shall include a complete evaluation of the soils and groundwater in the vicinity of the proposed expansion and a description of the measures to be taken to prevent seepage from the ponds. The plans shall be in accordance with the requirements of 31 TAC 317.14 (g)(5)(A,E-G) Appendix F-Sludge Disposal, Sludge-only landfill.

Unless the permittee demonstrates to the satisfaction of the staff of the Texas Water Commission that in-situ clay soils with a permeability equal to or less than 1×10^{-7} cm/sec are present over the entire area of the proposed construction at a depth sufficient to prevent seepage to ground water and surface water, all new sludge disposal lagoons shall be lined in compliance with one of the following requirements:

A. Placed Clay Liner: The placed clay liner shall contain at least 3 feet of clay-rich (liquid limit greater than or equal to 30 and plasticity index greater than or equal to 15) soil material along the sides and bottom of the pond compacted in lifts of no more than 9 inches, to 95% standard proctor density at the optimum moisture content to achieve a permeability. [sic]

B. Synthetic/Plastic/Rubber Liner: The liner shall be either a plastic or rubber membrane liner at least 30 mils in thickness which completely covers the sides and the bottom of the pond and which is not subject to degradation due to reaction with wastewater with which it will come into contact. If this lining material is vulnerable to ozone or ultraviolet deterioration it should be covered with a protective layer of soil of at least 6 inches. A leak detection system is also required.

C. Alternate Liner: The permittee shall submit plans for any other pond lining method. Pond liner plans must be approved in writing by the Executive Director of the Texas Waster commission prior to pond construction.

The permittee shall notify the TWC District 7 Office upon completion of construction of the pond and at least a week prior to its use. Certification of the lining specifications shall be provided by a professional engineer registered in Texas and shall be available for inspection by Texas Water commission personnel upon request.

MIMC ALTERNATIVE TO ITEM 5

New sludge disposal lagoons shall not be constructed unless written approval is obtained from the Wastewater Permits Section of the Texas Water Commission. Permittee shall submit plans and specifications for location, size, construction and testing requirements. The design shall include evaluation of soil and groundwater in the area proposed for new disposal lagoons.

Ponds shall be lined with a minimum of 3 feet of clay (either compacted or in-situ) with a permeability equal to or less than $1x10^{-7}$ cm/sec. Synthetic or alternate lining systems may be proposed, but are subject to approval of the Texas Water Commission.

Following construction, permittee shall submit a report sealed by an Engineer registered in the State of Texas, documenting that construction and testing was performed in accordance with design documents. The report shall include construction test records, and shall be submitted to the TWC District 7 office.

RATIONALE FOR ALTERNATIVE TO ITEM 5

Existing ponds have been designed with a minimum of 3 feet of low permeability clay, which is commonly available at the site. MIMC does not anticipate utilizing an alternative lining system. In any event, the TWC will review and approve the design for any new ponds; if alternative systems are submitted, the specific design details can be evaluated by the TWC at that time.

It is not appropriate to invoke 31 TAC §317 requirements as a permit condition, as less than 1% of the sludge volume is sanitary sewage. 31 TAC §317.14 specifically excludes industrial sludge (Reference 14 Tex. Reg. 5029, September 26, 1989.

TWC PROPOSED ITEM 6

The company shall refrain from excavating new pits in tidal nursery areas.

MIMC ALTERNATIVE TO ITEM 6

No alternative is proposed by permittee.

TWC PROPOSED ITEM 7

Within six (6) months of permit issuance, the permittee shall submit to the Texas Water Commission, Industrial Wastewater Permits Unit, a plan for closing sludge ponds that have been filled with sludge and are no longer used. A sampling and analysis plan for priority pollutants in the sludge in each individual lagoon shall be included. A final cover of three (3) feet of clay having a coefficient of permeability of less than 1×10^{-7} centimeters per second shall be placed over the sludge ponds. The closure plan shall include a description of the final contours of the fill. Top soil shall be added over the clay cover and the side slopes of the sludge disposal lagoons in sufficient depth to support vegetation for erosion control. Vegetation shall be maintained with sufficient density to provide erosion control. The top and side slopes of the closed sludge disposal lagoons shall be mowed at least twice per year. The final side slopes shall be maintained with a horizontal to vertical ratio not to exceed 4:1. As additional lagoons are filled in the future, plans for closing these facilities shall be submitted to the Texas Waster Commission for its approval at least three months prior to the anticipated date of pond closing.

MIMC ALTERNATIVE TO ITEM 7

Within six (6) months of permit issuance, the permittee shall submit to the Texas Water Commission, Industrial Wastewater Permits Unit, a plan for disposition of ponds that are filled with sludge and no longer used.

RATIONALE FOR ALTERNATIVE TO ITEM 7

MIMC agrees to submit a plan for pond disposition within six months of permit issuance. However, the details of the plan can be established only after engineering evaluation of specific site conditions. The plan will be approved by the TWC, so there is no advantage to imposing specific requirements in the permit prior to actual plan development.

TWC PROPOSED ITEM 8

The mixing zone for this discharge is defined as a volume within a radius of 200 feet extending over the receiving waters from the point the discharge reaches the intracoastal canal.

MIMC ALTERNATIVE TO ITEM 8

No alternative is proposed by permittee.

TWC PROPOSED ITEM 9

Effluent limits and reporting requirements are expressed in units of parts per quadrillion (ppq).

The permittee shall analyze for dioxin/furan compounds a composite sample of the filets of six (6) individual specimens from each of two (2) different edible species of fish taken from the Intracoastal Waterway near Outfall 001. The results shall be reported as TCDD Equivalents. The fish tissue analyses shall be conducted once per calendar quarter for a total of four (4) sets of analyses. Analytical results for Outfall 001 and for fish tissue samples shall be reported within six (6) months of when the sample was taken. Dioxin/Furans testing shall be conducted using the EPA analytical method No. 1613 with a detection limit of 5 parts per quadrillion (ppq).

MIMC ALTERNATIVE TO ITEM 9

The permittee shall obtain quarterly grab samples from outfall 001, when discharging, or from final holding pond immediately prior to discharging, for analyzing for both dioxins and furans. Total dioxin and total furan content shall be separately reported in parts per quadrillion (ppq). Test methods shall have a minimum detection level of 10 ppq.

In the event that significant levels of dioxins or furans are measured in the discharge, permittee shall take additional samples for dioxins/furans testing during the next discharge period, even if it is sooner than quarterly. If these samples confirm that significant levels significant levels of dioxins and furans are present in the discharge, the permittee shall submit a plan for additional monitoring within 6 months of the confirmatory test. If these samples do not indicate significant levels of dioxins and furans, testing shall continue on a quarterly basis.

RATIONALE FOR ALTERNATIVE TO ITEM 9

The TWC has indicated an interest in dioxin levels reportedly because fish with dioxins have been found in both the Brazos and Neches river segments, and certain fish have consequently been banned from commercial fishing. As reported to the TWC, a recent test on MIMC supernatant (sampled 10/12/89) indicated furan levels of less than 10 ppq, while dioxins were not detected.

Considering that dioxins and furans have not been detected in significant concentrations in the MIMC supernatant, and that discharge typically occurs less than a third of a year, there is low potential for the MIMC wastewater discharge to significantly contribute to dioxin levels as measured in fish tissue. In addition, it is not possible to separate the contribution of any one source of dioxins and furans if these compounds are found in fish tissue. The logical alternative is to analyze supernatant dioxin/furan levels on a regular basis for the permit period, with the contingency that should significant levels be detected and confirmed, a plan for additional monitoring will be required.

TWC PROPOSED ITEM 10

The permittee shall analyze a grab sample taken from Outfall 001 once per year for organic toxic pollutants listed in 40 CFR Part 122, Appendix D, Table II. In addition, analyses shall be conducted on the following compounds once per year:

Bis(chloromethyl)ether	CAS No. 542-88-1
Cresols (Total)	CAS No. 1319-77-3
1,2-Dibromoethane	CAS No. 106-93-4
Methyl Ethyl Ketone	CAS No. 78-93-3
Pentachlorobenzene	CAS No. 608-93-5
1,2,4,5-Tetrachlorobenzene	CAS No. 95-94-3
2,4,5-Trichlorophenol	CAS No. 95-95-4

Analytical methods shall be in accordance with procedures listed at 40 CFR Part 136. Results shall be submitted in the month of September each year to the Water Quality Division, Industrial Permits unit of the Texas Water Commission.

MIMC ALTERNATIVE TO ITEM 10

The permittee shall analyze a grab sample taken from Outfall 001 once per year in the first two years following permit issuance for organic toxic pollutants listed in 40 CFR part 122, Appendix D, Table II, except pesticides. In addition, analyses shall be conducted for the following compounds once per year, in the first two years following permit issuance:

Bis (chloromethyl) ether	CAS No. 542-99-1
Cresols (Total)	CAS No. 1319-77-3
1,2-Dibromoethane	CAS No. 106-93-4
Methyl Ethyl Ketone	CAS No. 78-93-3
Pentachlorobenzene	CAS No. 608-93-5
1,2,4,5-Tetrachlorobenzene	CAS No. 95-94-3
2,4,5-Trichlorophenol	CAS No. 95-95-4

Analytical methods shall be in accordance with procedures listed at 40 CFR Part 136. Results shall be submitted in the month of September each year to the Water Quality Division, Industrial Permits unit of the Texas Water Commission.

If analyses indicate that individual organic toxic pollutant are not present in the effluent above detection limits, then annual monitoring for such pollutants shall be discontinued after two years. If analyses indicate that individual organic toxic pollutants are present above detection limits, then annual monitoring for such pollutants shall be continued over the term of the permit.

RATIONALE FOR ALTERNATIVE TO ITEM 10

Pesticides have not been detected in the sludge; there is no reason to test for them in the effluent. If testing for two years indicates that specific pollutants are not present above detection limits in the effluent, and there is no significant change in the waste stream or process, there is no need to continue such testing.

TWC PROPOSED ITEM 12

The permittee shall comply with the following sludge requirements:

Sludge received at the disposal site shall be tested twice per year in accordance with the method specified in 40 CFR Part 261, Appendix II (Toxicity Characteristic Leaching Procedure) or other approved method. Sludge failing this test shall be handled according to RCRA standards for the disposal of hazardous waste. The Information and Technical Services Section of the Texas Water Commission shall be notified to test failure within 24 hours. A written report shall be provided to this office within 7 days after failing the Toxicity Characteristic Leaching Procedure Test (TCLP). The report shall contain test results, certification that unauthorized disposal has stopped and a summary of alternative disposal plants that comply with RCRA standards for the disposal of hazardous waste. The report shall be addressed to: Director, Hazardous and Solid Waste Division, Texas Waster commission, P. O. Box 13087, Capitol Station, Austin, Texas 78711-3087.

MIMC ALTERNATIVE TO ITEM 12

If permittee is notified by generator that sludge that has been received at the site is hazardous waste as defined by 40 CFR Part 261, permittee shall notify the Information and Technical Services Section of the Texas Water Commission. A written report shall be provided to this office within 14 days after permittee receives notice from the generator. The report shall contain available laboratory results upon which the hazardous waste determination is based, a certification that unauthorized disposal has stopped, and a summary of alternative disposal plans that comply with Resource Conservation and Recovery Act Standard for Disposal of Hazardous Waste. The report shall be addressed to: Director, Hazardous and Solid Waste Division, Texas Water Commission, P.O. Box 13087, Capitol Station, Austin, Texas 78711-3087.

RATIONALE FOR ALTERNATIVE TO ITEM 12

Hazardous waste determinations are the duty of the solid waste generator, pursuant to 31 TAC §335.62. GCWDA has determined, and the TWC has verified through issuance of a Class II Texas Industrial Waste Code, that the sludge is non-hazardous. In addition, GCWDA has performed, and the MIMC has submitted to the TWC, results of sludge analysis that support the sludge classification as non-hazardous. Applicable regulations referenced by the TWC in the proposed permit do not require independent verification of laboratory analyses conducted by GCWDA.

TWC PROPOSED ITEM 13

a. The provisions of this section apply to Outfall(s) 001.

b. The permittee shall test the effluent for toxicity in accordance with the provisions in this section. Such testing will determine if an appropriately dilute effluent sample affects the survival and/or reproduction or growth of the appropriate test organism.

Toxicity is herein defined as a statistically significant difference at the 95% confidence level between survival and/or reproduction or growth of the appropriate test organism in a specified effluent concentration and the control (0% effluent).

Lethality, a component of toxicity, is herein defined as a statistically significant difference at the 95% confidence level between survival of the appropriate test organism in a specified effluent concentration and the control (0% effluent).

Significant nonlethal effect, a component of toxicity, is herein defined as a statistically significant difference at the 95% confidence level between reproduction or growth of the appropriate test organism in a specified effluent concentration and the control (0% effluent).

The permittee shall initiate the following series of tests within 90 days of the effective date of this permit. If there is no discharge during the 90 day period following the date of permit issuance, the tests shall be initiated as soon as discharge occurs. All test organisms, procedures, and quality assurance requirements used shall be in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms (EPA 600/4-87/028)," or the latest revision of this document. The TWC may require the permittee to repeat a test, including the control and all effluent dilutions, if the test acceptability criteria, procedures, and quality assurance requirements defined in the test methods are not satisfied. The following tests shall be used:

1) Chronic static renewal 7-day survival, growth and fecundity test using Mysidopsis bahia (Method 1007.0).

2) Chronic static renewal 7-day larval survival and growth test using sheepshead minnow (Cyprinodon variegatus) (Method 1004.0).

c. Five effluent concentrations in addition to an appropriate control (0% effluent) shall be used in the toxicity test. These additional effluent concentrations shall be 4%, 8%, 16%, 32% AND 64%. The low-flow effluent concentration (critical dilution) is defined as 8% effluent, and the 1/2 low-flow effluent concentration (2 times the critical dilution) is defined as 16% effluent. If more than 20% of the test organisms in any control die, that test, including the control and all effluent dilutions, shall be repeated.

d. The samples shall be collected at a point following the last treatment unit. Dilution water used in the toxicity tests will be the receiving water collected as close to the point of discharge as possible but unaffected by the discharge. If the receiving water is unsatisfactory as a result of preexisting instream toxicity (greater than 20% mortality in the control), the permittee shall substitute synthetic dilution water for the receiving water in the retest required in item c. above provided the following stipulations are met: (a) a synthetic dilution water control was run in addition to the receiving water control; (b) the synthetic dilution water had 20% or less mortality, whereas the receiving water control had greater than 20% mortality; (c) the permittee submits all test results on the receiving water with the report and information required by items k. and l. below and the Biomonitoring Report Forms for the reporting period; and (d) the synthetic dilution water has a pH, and salinity similar to that of the receiving water.

The permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water if approved by the permitting authority. Synthetic dilution water may be used exclusively for the control in all subsequent tests provided all of the above stipulations are met.

e. Flow-weighted 24-hour composite samples representative of dry weather flows during normal operation will be collected from Outfall(s) 001. The 24-hour composite sample consists of a minimum of twelve (12) effluent portions collected at equal time intervals and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.

A minimum of three 24-hour composite samples must be collected so that the maximum holding time for effluent samples shall not exceed 72 hours. The toxicity test must be initiated within 36 hours after collection of the last portion of the first 24-hour composite sample. Samples

shall be chilled to 4 degrees centigrade when collected, shipped and/or stored.

f. The toxicity tests specified above shall be conducted once per quarter.

g. Lethality Testing - Special Conditions

1. If any toxicity test at the 8% effluent concentration demonstrates lethality, the permittee shall resample and again conduct the toxicity test(s) for the species that showed lethality within fifteen (15) days of test completion. There shall be a total of three (3) consecutive toxicity tests during a forty-five (45) day period. If the retest cannot be completed within fifteen (15) days or if three (3) consecutive toxicity tests cannot be completed during the forty-five (45) day period because the discharge is discontinued, the permittee shall notify the Wastewater Permits Section of the TWC and the retests shall be conducted when the discharge is resumed. If one or more of the retests show lethality of the 8% effluent concentration, the permittee may suspend additional retesting for this reporting period and shall notify the TWC in writing and submit all test results within fifteen (15) days.

   The permittee may be required to conduct further monitoring studies of biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. If the testing frequency in item f above is monthly, the permittee may substitute the biomonitoring conducted during a retest for the next monthly routine biomonitoring if the time of the retest coincides with the next monthly biomonitoring. Concurrently with the retest, the permittee must also conduct the next month's required biomonitoring for the species that did not demonstrate significant lethality at the 8% effluent concentration.

3. Within thirty (30) days after submitting the test results which demonstrate lethality in one or more of the retests, the permittee shall submit to the TWC a general outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but is not limited to, such things as: assigning project personnel; a time schedule for obtaining consultants, if needed; a discussion of available influent/effluent data available

for review, and specify an initiation date for the TRE with a proposed schedule of specified activities/testing.

4. Ninety (90) days after initiating the TRE, the permittee shall submit a specific detailed plan and schedule for performing the TRE. The TRE shall be designed to determine the general cause of toxicity, possible action to eliminate or reduce the toxicity and develope a corrective action schedule. The permittee is required to implement the TRE with due diligence and shall submit quarterly summaries to the TWC concerning the project results.

   If after initiating the TRE, the effluent ceases to induce lethal responses in the test organisms, the permittee may discontinue the TRE requirements and continue with the remainder of the biomonitoring testing required in section f. through j. A cessation of lethality is defined as no lethality at the 8% effluent concentration, using the test procedures required in section b. through 3., for a period of four (4) consecutive months with at least monthly sampling and testing. Such evidence shall be submitted to the TWC with a statement of intent to cease the TRE.

   This permit may be amended to require a compliance schedule for implementation of corrective actions and/or permit limits based upon the results of the TRE and proposed corrective actions.

5. The provisions of g.1 and g.3 are suspended upon submittal of the TRE Plan.

6. If any retest in item g.1 indicates lethality at the 8% effluent concentration, the permittee shall continue biomonitoring quarterly (as a minimum) during the TRE, using the most sensitive species. The biomonitoring procedures specified in items b through e above shall be utilized.

h. Nonlethal Effects Testing - Special Conditions

1. If the testing frequency specified in item f. above is quarterly and if any toxicity test required in items b.f. above demonstrates a significant nonlethal effect at the 8% effluent concentration, the permittee shall biomonitor once per month, for an additional twelve (12) consecutive months following the toxicity test initially showing significant nonlethal effects. If only one species demonstrated a significant nonlethal effect at

the 8% effluent concentration, the permittee may perform the additional 12 consecutive biomonitoring test utilizing that species only. In this event, the permittee shall continue the first year's quarterly biomonitoring tests for the species that did not demonstrate a significant nonlethal effect. Upon completion of the additional testing requirements, the permittee shall continue biomonitoring utilizing both species specified in item b. once per six (6) months until the expiration date of the permit. The same procedures specified in items b.-e. above shall be used during the monthly, quarterly, and twice-yearly testing.

This permit may be amended to require effluent limits, additional testing and/or other appropriate action to address non-lethal toxic effects.

2. If the testing frequency specified in item f. above is monthly and if any toxicity test require in items b.-f. above demonstrates a significant nonlethal effect at the 8% effluent concentration during the first year of testing, the permittee shall continue biomonitoring after the first year of testing at a frequency of once per six (6) months until the expiration date of the permit. The same procedures specified in items b.-e. above shall be used.

i. If lethality is shown at the 16% effluent concentration and toxicity is not shown at the 8% effluent concentration during the first four quarterly tests, the permittee shall continue biomonitoring after the first year of testing at a frequency of once every six (6) months until expiration of this permit utilizing the same procedure as specified in b.-e. above.

This permit may be amended to require effluent limits, additional testing and/or other appropriate action to address toxic effects.

j. If the toxicity tests do not indicate toxicity at the 8% effluent concentration and lethality at the 16% effluent concentration during the first four quarterly tests, the permittee shall certify this information in writing to the TWC and these biomonitoring requirements shall expire.

k. The permittee shall prepare a full report of the results according to EPA 600/4-87/028, Section 10, Report Preparation. The full report must be submitted with the first biomonitoring test results, but need not be submitted for subsequent testing unless requested and shall be retained for 3 years at the plant site.

l. The permittee shall submit the toxicity testing information contained in Table 1 of this permit to the Wastewater Permits Section of the Water Quality Division.

m. If monthly biomonitoring is required, the biomonitoring test reports are due on or before the 20th day of the month following sampling.

n. If quarterly biomonitoring is required, the biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during each calendar quarter.

o. If semi-annual biomonitoring is required, test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.

p. The percent coefficient of variation (standard deviation x 100/ mean) for the mean percent survival shall be 40% or less for the control (0% effluent), low flow dilution and 1/2 low flow dilution. Should the percent coefficient of variation be greater than 40%, the toxicity test, including control and all effluent dilutions shall be repeated. If significant lethality was shown at the low flow effluent dilution or half low flow effluent dilution, this coefficient of variation requirement shall not apply.

MIMC ALTERNATIVE TO ITEM 13

In the event that the TWC demonstrates, by reliable monitoring or modeling, that instream concentrations of specific numeric criteria for toxic substances are exceeded or are expected to be exceeded beyond the zone of initial dilution and/or mixing zone, within six months the permittee shall be required to submit a detailed plan for instream monitoring and toxicity testing.

RATIONALE FOR ALTERNATIVE TO ITEM 13

31 TAC §307.6(c)(3) states in part

> "Discharge permit limits which are expected to cause instream concentrations of specific numerical water criteria to be exceeded will require a demonstration that existing or designated uses will not be impaired....A demonstration that uses are protected may consist of total (whole-effluent) toxicity listing..."

Clearly toxicity testing is not a required unless it is expected

that certain concentrations of toxic pollutants will be exceeded. TWC has not established that the MIMC discharge is expected to cause the instream concentrations of specific numeric water criteria to be exceeded.

31 TAC §307.6(d)(2)(c) states in part

> "Discharges which have significant potential for exerting toxicity in receiving waters will be required to conduct effluent toxicity biomonitoring."

The MIMC discharge has complied with the wastewater discharge limitations promulgated by 31 TAC §319. MIMC receives only Class II waste, has a maximum discharge of 1 MGD, and discharges only intermittently. In the last 3 years (1988 - 1990) the operation has discharged 106, 92, and 42 days, respectively. Consequently, MIMC should be considered a low potential impact facility, and should not be considered to have significant potential for exerting toxicity in receiving waters.

The MIMC site's toxicity potential has received close attention, due both to public hearings and the extra care taken when the sludge was reclassified from Class I to Class II. The overwhelming majority of the evidence in TWC files demonstrates that the MIMC operation has not had a toxic effect on aquatic life. Examples of this evidence are detailed in Exhibit 2.

EXHIBIT 1 - EXERPTS PERTAINING TO EMBANKMENT INTEGRITY
(REFERENCE TWC PROPOSED ITEM 3)

5/08/90 TWC Industrial Discharge WWTP-Inspection Report
"No operation, maintenance and housekeeping problems were noted...."

"The permittee is currently doing repair work on some of the berms around several of the oxidation ponds.

5/09/89 EPA NPDES Compliance Inspection Report
"The purpose of this inspection was...to check the integrity of the ponds..."
"During the inspection, we thoroughly toured the area and did not observe any readily recognizable leaks or seeps. The integrity of the pond dikes appeared to be sound..."

4/14/88 TWC Industrial Discharge WWTP - Inspection Report
"The facility appeared well operated and maintained."

2/23/87 TWC Industrial Discharge WWTP - Inspection Report
"This facility appeared well operated and maintained..."

1/24/85 TDWR POTW/Industrial Inspection Report
"The facility appeared to be well kept and maintained."

4/20/79 Hearings Examiner's Proposal for Decision
"(1) The dikes around the ponds are tight, structurally sound and are not leaking...Although some weathering of the older levees has occurred, there was no evidence that the structural integrity of the dikes has been compromised."

"In summary, the overwhelming weight of the evidence established that the McGinnes disposal site, operational since 1966, is well constructed and operated..."

7/01/75 TWQB Interoffice Memorandum
"All dikes were inspected for seepage and none was found."

4/25/75 Hearing Commission's Report
"(2) All earthen dikes around all pits were in excellent condition, with inconsequential observable erosion."

"(3) No seepage was observed from any part of the facility"

"(5) Dikes for all observed pits were constructed of heavy well-compacted clay soil..."

EXHIBIT 2
EXERPTS PERTAINING TO TOXICITY
(REFERENCE TWC PROPOSED ITEM 13)

The Texas Water Quality Board conducted a study of benthic species, number of individuals, species diversity, and water and sediment quality at five different locations in waters surrounding the permittee's disposal site. In addition, zooplankton and phytoplankton were collected from sampling locations in waters surrounding permittee's disposal site. The Hearing Commissions Report, 4/25/75, states in part:

> "The on-site investigation by the Texas Water Quality Board revealed that in pits...discontinued from active use, water collected, minnows, small fish, and snails were thriving, lush vegetative growth was rapidly covering the closing pit area, and the area is serving as a bird rookery."
>
> "Based upon a study of the above, the Texas Water Quality Board staff concluded that the waters surrounding the permittee's disposal site are inhabited by a normal, healthy marine biota."
>
> Texas Parks and Wildlife Department memorandum dated 5/21/75 documents results of 48-hour bioassays conducted on Atlantic croaker, using supernatant taken from the final oxidation pond. The memorandum states in part "No mortality was observed in the 50%, 75% or 100% waste solutions. It therefore appears that McGinnes' waste is not acutely toxic."

Excerpt from 10/30/78 letter, Gulf Coast Waste Disposal Authority to the Honorable Ray Holbrook, Judge of Galveston County:

> "Toxicity tests have been done on the waste characteristics and the LD_{50} (standard test) test indicates a toxicity level of 28. For comparative purpose, the LD_{50} for sugar is 30 and ordinary table salt is 3."

Excerpts from 10/11/78 Texas Department of Water Resources Interoffice Memorandum, regarding Biological Survey of Water Surrounding McGinnes Industrial Disposal Site:

> "Benthic macroinvertebrates (bottom dwelling organisms) were collected at four stations located around the waste pits... Benthic organisms are good indicators of environmental quality because they are generally unable to easily relocate, especially great distances, when exposed to undesirable environmental conditions. They also have relatively long life cycles, which requires a substantial period of time before the area can be populated.

"The kinds of diversity of organisms...indicated that stable benthic communities are established at both the area around the temporary discharge point and the mouth of the McGinnes Canal. All of the species collected were typical of those organisms indigenous to adjacent West Bay."

Regarding microscopic examination of water from the "first state oxidation pond" the memorandum stated "This diverse community structure would indicate the absence of acutely toxic materials."

The report concludes:

"Comparing the results of this field investigation with our previous survey conducted in May, 1975...it is concluded that the operation of the McGinnes waste disposal site has no apparent detrimental affect on the water quality in the surrounding area."

Excerpt from 3/8/79 Texas Department of Water Resources memorandum:

"In terms of treated wastewater, the quality of the water discharged is very good."

Excerpt from Hearings Examiner's Proposal for Decision, 4/20/79:

"Bottom dwelling organism, birds, fish and other wildlife have been observed many times in the Intracoastal Canal, canals, ditches and ponds in and around the McGinnes facility. No evidence of toxicity to wildlife or vegetation has been produced."

Another Texas Department of Water Resources investigation is documented in a 2/18/83 memorandum which states in part:

"Dr. Parker's concern was that pollutants discharged by this facility were contaminating oysters in the area which would be harmful to pregnant women to eat." The investigation included "...sample collections as follows:

1. Sludge from the transporting barge.
2. Sludge from the first, middle and final pits.
3. Sludge from Gulf Coast Waste Disposal Authority's Washburn Tunnel treatment facility.
4. Water from the final pit and the five monitor wells.
5. Sediment samples from 15 strategic locations around the pits."

A 1/16/84 follow-up memorandum included analysis results for influent sludge and pit sediments (hazardous waste characteristics, heavy metals and chlorinated pesticides), and adjacent marsh analyses. The 1/16/84 memorandum stated:

"In summary, the results of all parameters analyzed were below the test criteria...with the exception of cyanide in sediments...Given the chemical nature of total cyanides, the impact of the levels found are negligible..."

Texas Water Commission Industrial Discharge WWTP - Inspection Report, 4/14/88, states:

"Small fish and numerous types of waterfowl were present near the outfall."

Excerpt from Texas Water Commission Industrial Discharge WWTP - Inspection Report, 5/8/90:

"Numerous types of fish were observed in the Intracoastal Canal near the discharge point."

John Hall, Chairman
Pam Reed, Commissioner
Peggy Garner, Commissioner

TEXAS WATER COMMISSION

PROTECTING TEXANS' HEALTH AND SAFETY BY PREVENTING AND REDUCING POLLUTION

February 1, 1993

FAX Number: (512) 463-7974

Susan Snyder, Attorney
Molly Cagle, Attorney
Vinson & Elkins
2800 One American Center
600 Congress Avenue
Austin, Texas 78701-3200

Re: Application of McGinnes Industrial Maintenance Corporation and BMcD, Inc. for Renewal of Permit No. 01221

Dear Ms. Snyder and Ms. Cagle:

The above-referenced application is set to be considered by the Texas Water Commission at 9:00 a.m. on March 3, 1993 in Room 118 of the Stephen F. Austin State Office Building, 1700 North Congress Avenue, Austin, Texas. Enclosed are copies of the Proposal for Decision, proposed Order, and proposed Permit which have been recommended to the Commission for approval.

Within ten days after the date of this letter, any party may file exceptions or briefs by delivering the original documents to the Chief Clerk of the Commission. Any replies to exceptions and/or briefs shall be filed in the same manner within twenty days after the date of this letter. Copies of all exceptions, briefs, and/or replies shall be served promptly on the Hearings Examiner and all nonagency parties. Certification of service to the above parties and an original and twelve copies shall be furnished to the Chief Clerk of the Commission. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

Linda Sorrells, Attorney
Hearings Examiner
Office of Hearings Examiners

enclosures
cc: Mailing List

00147

RECEIVED
CN# 105585
FEB 02 1993

MAILING LIST
McGinnes Industrial Maintenance Corporation & BMcD
Permit No. 01221

Susan Snyder, Attorney Vinson & Elkins 2800 One American Center 600 Congress Avenue Austin, Texas 78701-3200 (512) 495-8562	Representing: McGinnes Industrial Maintenance Corporation
Molly Cagle, Attorney Vinson & Elkins 2800 One American Center 600 Congress Avenue Austin, Texas 78701-3200 (512) 495-8562	Representing: McGinnes Industrial Maintenance Corporation
C. Gregory Rogers, Attorney Vinson & Elkins 3700 Trammell Crow Center Dallas, Texas 75201-2916 (214) 220-7700	Representing: Simpson Pasadena Paper Company
Paul Seals, Attorney Akin, Gump, Strauss, Hauer & Feld 111 Congress Avenue, Suite 2100 Austin, Texas 78701 (512) 499-6200	Representing: BMcD Corporation
Lisa Gosset, Attorney Blackburn & Carter, P.C. 3131 Eastside, Suite 450 Houston, Texas 77098 (713) 524-1012	Representing: Galveston Bay Conservation and Preservation Association and Galveston Bay Foundation
John H. Campbell 2200 Market, Suite 600 Galveston, Texas 77550 (409) 935-1427	Representing: Village of Tiki Island and Baywatch
The Honorable Dick Hensley Mayor, Village of Tiki Island 802 Tiki Drive, Route 2 Tiki Island, Texas 77554	Representing: Village of Tiki Island and Baywatch
Fletcher Harris 3318 Avenue R 1/2 Galveston, Texas 77550 (409) 762-6233	

Mailing List (Cont.)
McGinnes Industrial Maintenance Corporation and BMcD
Permit No. 01221

Gary H. Smith, City Attorney City of Galveston P. O. Box 779 Galveston, Texas 77553 (409) 766-2152	Representing: City of Galveston
A. D. Downer, Attorney P. O. Box 3300 Texas City, Texas 77590	Representing: James Parker, M.D.
James Parker, M.D. 2434 Cedar Drive LaMarque, Texas 77568 (409) 935-2477	
Carolyn L. Guy 9010 FM 2004 Santa Fe, Texas 77510 (409) 925-2183	Representing: the Copeland, Garza, Fisher, Waylan and McGee families
Raenell Silcox, Attorney Legal Division Texas Parks and Wildlife Department 4200 Smith School Road Austin, Texas 78744 (512) 389-4419	Representing: the Texas Parks and Wildlife Department
Sharon J. Smith, Senior Attorney Legal Division Texas Water Commission P. O. Box 13087 Austin, Texas 78711-3087 (512) 463-8069	Representing: the Executive Director of the Texas Water Commission
Erich Birch, Attorney Public Interest Counsel Texas Water Commission P. O. Box 13087 Austin, Texas 78711-3087 (512) 463-8030	

Mailing List (Cont.)
McGinnes Industrial Maintenance Corporation and BMcD
Permit No. 01221

*Louis C. Herrin III
Watershed Management Division
Texas Water Commission
P. O. Box 13087
Austin, Texas 78711-3087

*Michael Meier
Industrial & Hazardous Waste
Division
Texas Water Commission
P. O. Box 13087
Austin, Texas 78711-3087

*The Honorable Mike Martin
State Representative, District 25
P. O. Box 2910
Austin, Texas 78768

*Tom Nuckols, Attorney
Director, Environmental Law Section
General Land Office
1700 N. Congress Avenue
Austin, Texas 78701

*Kevin Moran
Houston Chronicle
6710 Gulfcrest Drive
Galveston, Texas 77551

*Galveston County Health District
Pollution Control Division
Attn: Karen Kilpatrick
P. O. Box 939
LaMarque, Texas 77568

*Dr. Jackie Cole
1501 Biovue
Galveston, Texas 77551

*Mark Muhich
2808 Strand
Galveston, Texas 77550

*Cookie Pepper
Route 1, Box 185 X-15
Galveston, Texas 77554

Mailing List (Cont.)
McGinnes Industrial Maintenance Corporation and BMcD
Permit No. 01221

*Ann Comstock
Galveston Daily News
8522 Teichman Road
Galveston, Texas 77553

*Linda S. Sullivan
Texas General Land Office
105 San Jacinto
La Porte, Texas 77571-5445

*F. Hermann Rudenberg
3327 Avenue Q 1/2
Galveston, Texas 77550

*Tom McKenzie
7706 Pecanwood Drive
Hitchcock, Texas 77563

*Glenn Hall, Staff Attorney
Legal Division
Texas Water Commission
P. O. Box 13087
Austin, Texas 78711-3087

*Courtesy copy

Contested PFD Executive Summary for
the Application of McGinnes Industrial
Maintenance Corporation and BMcD
for renewal of Permit No. 01221

McGinnes Industrial Maintenance Corporation (MIMC) and BMcD have applied to the Texas Water Commission (Commission) for renewal of Permit No. 01221, which authorizes the discharge of treated sludge supernatant effluent at a volume not to exceed 1,000,000 gallons during any 24-hour period from the MIMC sludge disposal facility located in Galveston County. The effluent is discharged into the Intracoastal Waterway, thence into West Bay Segment No. 2424 of the Bays and Estuaries of the state. The receiving water uses deemed desirable are high quality aquatic habitat, contact recreation, and oyster water.

NAMED PARTIES

Applicant: MIMC (represented by Attorneys Sue Snyder and Molly Cagle)

Co-applicants: BMcD (represented by Attorney Paul Seals); Simpson Pasadena Paper Company (represented by Attorney C. Gregory Rogers);

TPWD: (represented by Attorney Raenell Silcox)

ED: (represented by Senior Attorney Sharon Smith)

PIC: (represented by Attorney Charles Thrash)

Protestants: James Parker, M.D.; the Copeland, Garza, Fisher, Waylan, Guy, and McGee families (represented by Mrs. Carolyn Guy); the Galveston Bay Foundation (GBF) and the Galveston Bay Conservation and Preservation Association) (GBCPA) (represented by Attorney Lisa Gosset); Fletcher Harris; Bay Watch and the Village of Tiki Island (represented by Tiki Island Mayor Dick Hensley); and the City of Galveston (represented by City Attorney Gary Smith)

ISSUES

1. Whether the material contained within the sludge ponds is leaking from the ponds and poses an adverse risk to human health, safety, and the environment.

Applicant: No. The expert testimony and scientific evidence in the record show that the ponds do not pose an adverse risk to human health, safety or the environment, and that the sludge pond material has not migrated from the MIMC facility.

Protestants: Yes. Evidence in the record shows that the material is leaking from the sludge ponds and poses

an adverse risk to human health, safety and the environment, and the application should be denied.

GBF and GBCPA: No position.

TPWD: No position.

PIC: The facility poses a number of grave threats to human health and the environment. Use of the site should be discontinued, and remediation should begin immediately. The groundwater monitoring plan required by the Executive Director of the Commission (ED) is inadequate and will not detect seepage quickly.

ED: The evidence in the record on this issue is inconclusive. The groundwater analysis plan included in the draft permit will determine whether contents of the pond are leaking.

Examiner: The facility does not pose an immediate adverse risk to human health, safety, or the environment; if the material in the ponds is leaking, it has not migrated from the MIMC facility. The most feasible way to determine whether the ponds are leaking and remediation is necessary is by implementation of the groundwater analysis plan that the ED has included in the draft permit.

2. Will the draft permit along with the three changes requested by MIMC (relating to incorporation of the 1991 Water Quality Standards, the use of partitioning for calculating dissolved metals percentages, and the appropriate statistical calculation sample) maintain the water quality standards of state waters and protect the environment?

Applicant: Yes. The draft permit presented by the ED that contains two of the three changes requested by MIMC will maintain state water quality standards and will be protective of the environment. A permit that incorporates all three changes would also be protective of the environment and maintain water quality standards.

Protestants Guy, Parker, GBF, GBCPA, and City of Galveston: No. The permit should not be renewed.

Protestants TPWD, and City of Galveston: A draft permit that incorporates 1991 water quality standards, as requested by MIMC, will be protective the environment and will maintain water quality standards. Oppose the other two changes to the permit.

PIC: Oppose partitioning and the changing of the statistical calculation sample from 12 to 2. No objection to the 1991 Water Quality standards.

ED: A draft permit that incorporates 1991 water quality standards and partitioning will be protective of the environment and maintain the water quality standard of the receiving stream as will a permit that incorporates only the 1991 water quality standards. Opposes the change to the statistical calculation.

Examiner: The draft permit originally proposed by the ED that incorporates the 1991 water quality standards only will maintain water quality standards and protect the environment. The Examiner declines to include the partitioning change and the statistical calculation change in the draft permit.

3. Whether the residential wells located six or more miles from the MIMC facility have been adversely impacted by the contents in the sludge ponds.

Applicant: No. Scientific evidence and expert testimony show that the wells have not been adversely impacted by the MIMC facility.

Protestants Mrs. Guy and Mr. Copeland: Unknown. They are concerned that their wells may have been contaminated by the MIMC facility.

Protestants Parker, City of Galveston, GBF and GBCPA: No position.

TPWD: No position.

PIC: No position.

ED: No. Testing conducted by the Commission on the wells of the families that live near the MIMC facility did not indicate that the residential wells were adversely impacted by the MIMC facility.

Examiner: No. The evidence shows that the residential wells have not been adversely impacted by the MIMC facility.

4. Whether MIMC is properly treating the sludge.

Applicant: Yes. The MIMC pond system is an acceptable method of treating the sludge and producing an acceptable effluent that can comply with the permit limits.

Protestants City of Galveston and Dr. Parker: No. Rainwater is diluting the effluent and this process is not treatment.

GBF and GBCPA: MIMC has failed to comply with the anti-dilution regulations.

TPWD: No position.

PIC: No position.

ED: Pond systems are acceptable methods of treating the involved material and the anti-dilution regulations are not applicable.

Examiner: Yes. MIMC's system is an acceptable means of treating the sludge material and producing an effluent that does not impair the water quality standards of the receiving water. The anti-dilution regulations are not applicable.

5. Whether provisions in the draft permit that require the applicant to submit various plans for Commission approval, if the permit is issued, violate the Administrative Procedure and Texas Register Act (APTRA).

GBF and GBCPA: Yes. Requiring submission of plans to the ED for approval without a hearing violates protestants' rights to respond and present evidence and argument on all issues involved.

Applicant: No. The plans were provided to the parties either prior to the hearing or during the hearing. This argument is specious.

Protestants: No position.

TPWD: No position.

PIC: No position.

ED: No. Submission of the information, if the permit is granted, is the more prudent course of action.

Examiner: No. This practice is prudent and it does not violate the terms of APTRA.

6. Whether the renewal application was properly signed and noticed.

PIC: No. BMcD was not listed as a co-permittee.

Protestants: No position.

TPWD: No position.

Applicant: Yes. BMcD adopted the original application by certified statements in a letter filed with the ED. The preliminary hearing was renoticed to include BMcD as a co-permittee. There are no jurisdictional problems in this proceeding.

ED: The ED informed BMcD that it would have to be a co-permittee to the renewal application because it owns the property where the MIMC facility is located. The hearing was renoticed to include BMcD as a co-permittee.

Examiner: There are no jurisdictional problems with this proceeding.

[illegible]26

HEARINGS EXAMINER'S PROPOSAL FOR DECISION
to be presented to the
Texas Water Commission

On August 11, 1989, McGinnes Industrial Maintenance Corporation (MIMC) applied to the Texas Water Commission (Commission) for renewal of Permit No. 01221, which authorizes the discharge of treated sludge supernatant effluent at a volume not to exceed 1,000,000 gallons during any 24-hour period from the MIMC sludge disposal facility located in Galveston County. The effluent is discharged into the Intracoastal Waterway, thence into West Bay in Segment No. 2424 of the Bays and Estuaries of the state. The receiving water uses deemed desirable are high quality aquatic habitat, contact recreation, and oyster water. BMcD, Inc. (BMcD), by certified statements dated July 27, 1991, became a co-permittee in this proceeding by adopting MIMC's original permit application and accepting the responsibilities for compliance with the permit. The hearing was renoticed to inform the public of the additional co-permittee.

On September 23, 1991, a preliminary hearing was convened by Leslie Limes, Attorney, a Commission Hearings Examiner. Hearings Examiner Limes took jurisdiction of the matter and designated the following as parties to the proceeding: the applicant, McGinnes Industrial Maintenance Corporation (represented by Attorneys Sue Snyder and Molly Cagle); co-applicants, BMcD (represented by Attorney Paul Seals) and Simpson Pasadena Paper Company (represented by Attorney C. Gregory Rogers); the Texas Parks and Wildlife Department (represented by Attorney Raenell Silcox); the Executive Director of the Commission (represented by Senior Attorney Sharon Smith); the Public Interest Counsel of the Commission (represented by Attorney Charles Thrash); and protestants, James Parker, M.D.; the Copeland, Garza, Fisher, Waylan, Guy, and McGee families (represented by Mrs. Carolyn Guy); the Galveston Bay Foundation (GBF) and the Galveston Bay Conservation and Preservation Association (GBCPA) (represented by Attorney Lisa Gosset); Fletcher Harris; Bay Watch and the Village of Tiki Island (represented by Tiki Island Mayor Dick Hensley); and the City of Galveston (represented by City Attorney Gary Smith). Fletcher Harris, Bay Watch, and the Village of Tiki Island were aligned with the City of Galveston.

Pursuant to Section 263.3 of the Texas Water Commission Permanent Rules, the case was reassigned to Linda G. Sorrells, Attorney, a Commission Hearings Examiner. Ms. Sorrells conducted an evidentiary hearing on the application on August 3 - 7, 1992, in Galveston, Texas, and on September 21 - 25, 1992, in Austin, Texas, after appropriate notice of the hearing was given pursuant to Section 26.022 of the Texas Water Code. The Galveston Bay Foundation (GBF) and the Galveston Bay Conservation and Preservation Association (GBCPA) did not participate in the evidentiary hearing.

Prior to the evidentiary hearing, the Executive Director of the Commission (ED) determined that MIMC needed a solid waste permit to continue the operation of its facility. MIMC complied with the ED's mandate and filed an application for a solid waste permit. Pursuant to motions and arguments advanced by the protestants, all non-water quality issues were severed from the water quality proceeding to prevent delay in the hearing on the renewal application. Thus, this proceeding involves only those issues relevant to the wastewater discharge permit. The solid waste permit proceeding will involve such issues as closure plans for the MIMC facility, the solid waste application, waste constituency, and new pond construction. MIMC has already filed its closure plan with the Industrial and Hazardous Waste Division of the Commission.

BACKGROUND INFORMATION

MIMC Operation

MIMC operates a sludge disposal facility in Galveston County. MIMC was originally issued an effluent discharge permit in 1966. The permit was most recently renewed in 1984 for a term of five years. MIMC and BMcD timely filed an application for renewal of the wastewater discharge permit. The MIMC facility is located six miles south of Hitchcock, Texas, adjacent to Carancahua Lake and the Intracoastal Waterway. The facility is divided into a southern portion (lower area holding ponds), which is adjacent to the Intracoastal Waterway, and a northern portion (upper area holding ponds). There are a total of 31 ponds at the MIMC facility--two oxidation ponds, two holding ponds, and 27 sludge ponds. The ponds are used to settle, stabilize, and store sludge material.

Currently, sludge is being pumped into a pond on the northernmost (northwest) end of the upper area holding ponds at the MIMC facility. Supernatant - water on top of the sludge, and rainfall runoff generated from the sludge disposal operation - flow from the pond through a ditch to ponds numbered 1 and 2 in the upper area holding ponds. Water then flows from these ponds through a 10-inch pipe to three of the ponds on the northern end of the lower area holding ponds. From there, the water flows through a ditch and pipe conveyance system to one of two oxidation ponds. The wastewater is treated by biological and physical means as it travels through the ponds. When the water meets the permit parameters, it is discharged through outfall 001, located near the lower area holding ponds, approximately 150 feet from the Intracoastal Waterway.

The flow of water and supernatant through the ponds is controlled by gates. It takes approximately four months for the supernatant to be passed from the upper ponds to the lower oxidation ponds.

MIMC discharges intermittently, between 10-15 days per month. Prior to any discharge, MIMC tests the water in the oxidation pond to determine whether the organics and heavy metals are in accordance with the permit parameters. The effluent is tested every day discharge occurs to determine whether it is in compliance with all discharge permit limits, and the metal content of the effluent is tested every two weeks.

Gulf Coast Waste Disposal Authority/MIMC Relationship

Gulf Coast Waste Disposal Authority (GCWDA) is a conservation and reclamation district created by the Texas Legislature to assist in the abatement of pollution to Galveston Bay. GCWDA promotes the concept of regionalization, which generally involves the combining of a number of waste sources at one facility for treatment in combination. The Gulf Coast Waste Disposal Authority's Washburn Tunnel facility (WBT) is the generator of the sludge treated by MIMC. WBT is an industrial wastewater treatment plant that treats wastewater from a bleached kraft paper mill, two petroleum refineries, a bulk chemical storage terminal, a petroleum bulk station and terminal, a domestic sewerage system, and organic and inorganic chemicals manufacturing plants. WBT produces approximately 250,000 gallons of sludge each day. The Commission has classified the WBT sludge as a class II non-hazardous solid waste.

Pursuant to a contract, MIMC only treats the sludge produced by WBT. MIMC is responsible for loading the sludge into a barge and transporting the barge to its facility. Effective September 18, 1994, the contract between GCWDA and MIMC will expire. MIMC has agreed to stop accepting GCWDA sludge at midnight on September 18, 1994. This condition has been included in the draft permit. However, due to rainfall, discharges will continue until a specific closure plan is approved by the Commission and a schedule for implementation of that plan is finalized. In the future, GCWDA anticipates the installation of a belt filter press operation at its facility to handle the sludge, and then taking the material to a sanitary landfill. Evidence in the record indicates that for the next two years, the MIMC pond system is the most feasible method of treating the WBT sludge.

ISSUES PRESENTED

The following are the primary issues raised at the hearing:

1. Whether material contained within the sludge ponds is leaking from the ponds and poses an adverse risk to human health, safety, and the environment.

The Examiner recommends that the Commission find that the MIMC facility does not pose an immediate adverse risk to human health, safety, or the environment; that if the ponds are leaking, the pond material has not migrated from the MIMC site; and that the most feasible way to determine whether the ponds are leaking and whether remediation is necessary is by implementation of the groundwater analysis plan that the ED has included in the draft permit. Therefore, the renewal application should not be denied on this basis.

Pursuant to 31 TAC §305.63(5), the Commission may deny an application for renewal on the grounds set forth in 31 TAC §305.66. The relevant portions of Section 305.66 provide that the Commission may revoke or suspend a permit for good cause and provide a partial list of what constitutes good cause. Included in the list is a determination that the permitted activity endangers human health or safety or the environment to such an extent that permit termination is necessary to prevent further harm. In this proceeding, the evidence focused primarily on the possible seepage of the material from the ponds and the impact to human health, safety and the environment.

The primary concern of the protestants in this proceeding is the possible leakage of the material from the ponds into the groundwater, the Intracoastal Waterway and West Bay, and the adverse impact that would result to human health, safety, and the environment. They advance a number of arguments to support their contention that the ponds are leaking, that the facility endangers human health, safety and the environment and, therefore, that the discharge permit should not be renewed.

The Public Interest Counsel of the Commission (PIC), the City of Galveston and aligned parties, and Dr. Parker argue that the MIMC facility was constructed in a manner allowing leakage of the sludge material from the ponds. The protestants contend that the type of soil found near the area of the facility is inadequate for construction purposes. Specifically, they rely on the testimony of Dr. Larry Slotta, a Registered Professional Engineer. Dr. Slotta reviewed a February 1988 soil survey of Galveston County produced by the United States Department of Agriculture & Soil Conservation Service that identified the types of soil in that area and discussed the soils' limitations in construction. The soil contains sand pockets, silty clay, and calcareous strata that are highly permeable and generally do not make good construction material for pond linings unless specific construction techniques are used. They argue that the area of the facility is replete with water-bearing sand and silt lenses, and the contents within the ponds are leaking into the groundwater that flows beneath the site. Protestants also argue that no "as built" construction plans were found for the older ponds and that MIMC failed to prove that the

older ponds were properly constructed using techniques that minimized construction limitations of the in-situ soils.

MIMC responds that Dr. Slotta's testimony referenced only the top layers of soils and not soils underneath. Moreover, Dr. Slotta testified that boring information would be more reliable in ascertaining the adequacy of soil for construction, and he acknowledged that he had no data on soil at the MIMC site.

The MIMC ponds were constructed between 1966 and 1989. Evidence in the record suggests that the ponds were created by building levees from in-situ clays. There is also evidence in the record that soils at the MIMC facility meet Commission requirements for pond linings. MIMC established that the most recent ponds were constructed in a manner that utilized proper construction techniques to maximize the efficacy of the area soils; however, there is no clear evidence in the record demonstrating the method of construction of the older ponds.

As further evidence that sludge material is leaking from the ponds, some of the protestants relied on the testimony and evidence presented by protestant Dr. Parker. Dr. Parker testified that he visually observed changes in the water levels in the ponds that coincided with the changes in the tide. To corroborate his testimony Dr. Parker produced numerous aerial photographs, of every conceivable angle of the MIMC facility, that he alleges show changes in water levels in the ponds. Dr. Parker also offered a number of documents he claims are the results of tests he conducted, or test results he obtained, that show that material in the sludge ponds can also be found in areas outside the boundaries of the facility.

The inference the protestants wish the Commission to draw from this evidence is that the pond material is passing from the ponds into the surrounding surface and ground waters, and that this escape puts the environment and public at risk because the area in close proximity of the facility is commonly used for fishing and hunting.

The Examiner does not believe that this evidence substantiates this inference. A review of the record discloses contradictions and inconsistencies in the testimony of Dr. Parker. He gave contradicting statements regarding the number of times he had actually been at the MIMC facility; he gave contradicting statements regarding the identity of the person that actually collected samples for some of the tests he performed; and his testimony was inconsistent and unclear regarding the dates on which several of his photographs were taken. Moreover, the documentary evidence relied on by Dr. Parker has little probative value and simply does not support his contentions. Dr. Parker did not substantiate the importance of the contents of the documents, he

Groundwater mounding indicates that sediments or soils beneath the ponds are saturated. Mr. Ewen testified that at most the mounding indicates that the clay lining in the pond is saturated, or that there is minimal leakage. If leakage is occurring, it is unclear whether only water or water and the pond material is involved. Evidence in the record indicates that any type of leakage that may be occurring is severely restricted because of clay pond linings at the site.

Protestants argue that the groundwater mounding indicates that constituents of the ponds are leaking from the site; however, background wells located in the northwest area of the MIMC facility have not detected elevated levels of constituents which would likely be found in the sludge or supernatant.

Mr. Ewen also performed a tidal influence study on selected monitor and background wells at the MIMC facility. The study was performed by recording the piezometric surface in piezometers over time. The piezometric surface is that elevation of groundwater that defines which way groundwater is moving. Mr. Ewen also recorded barometric pressures that could affect the level in the ponds. He concluded that the tide had very little influence on the direction of groundwater flow beneath the facility and that it was highly improbable that the tide could actually influence the height in the ponds because they would not have the requisite force. Mr. Ewen testified that a more likely explanation for changes in levels in the ponds, if they occur, is evaporation or that water is pumped from pond to pond by pipes as explained by the facility operator, Roland McGinnes.

The protestants also suggest that the lack of vegetation on some of the MIMC levees could be the result of material leaching through the levees and that this is further proof that the facility cannot protect the health and safety of the public or protect the environment.

Paul Price, a biologist who has conducted biological surveys for 18 years, was hired by MIMC to conduct a biological survey of the facility. Based on the results of his survey, Mr. Price testified that the MIMC facility does not adversely impact the biological community in or around the ponds. He also testified that the MIMC facility maintains propagation and protection of aquatic and terrestrial life. Dr. Glass, an expert in biomonitoring, corroborated Mr. Price's testimony. She testified that prior biomonitoring test results showed that the MIMC discharge presented no acute or chronic toxic impacts to aquatic life in the receiving water.

Mr. Price specifically looked for some effect of pond constituents causing the lack of vegetation on the levees and for evidence of

material leaking from the ponds through the levees. He found no evidence of either occurrence. Although Mr. Price did notice a lack of vegetation on some of the steeper levy slopes, he opined that it more than likely resulted because the native soil used to make the levees contains a lot of salt which must be leached out before terrestrial plants can grow. Protestants' expert, Dr. Slotta, also acknowledged that the lack of vegetation could result from salt compaction.

Additional evidence presented by MIMC to show that the discharge does not pose an adverse risk to human health, safety, or the environment was provided by John Mancini, an environmental engineer with in excess of 30 years of experience in water quality analysis. Mr. Mancini testified that the discharge from the MIMC facility could meet the 1991 Water Quality Standards of 31 TAC Chapters 307 and 319, which will maintain the quality of the water in the State consistent with public health and enjoyment. He also testified that by meeting these standards, human health, safety, and the environment are protected. He testified that the MIMC discharge is not toxic to man for ingestion of water, consumption of aquatic organisms, or contact to the skin. Mr. Mancini also testified that the MIMC discharge will not adversely impact the closest body of water--Segment No. 2424. He demonstrated that the discharge will not adversely affect pH limitations; the discharge can meet the limitation on fecal coliform; and that the discharge will not adversely affect the temperature limitation of Segment No. 2424.

Mr. Mancini further testified that the MIMC facility meets all aesthetic parameters governing facilities of this type pursuant to the general standards outlined in 31 TAC Sections 307.4 and 307.8. He testified that the surface water beyond the point of discharge is essentially free of floating debris and suspended solids, that the receiving waters are aesthetically attractive, with no visible film of oil or the like on the surface, banks, or bottom, and that the discharge does not cause substantial and persistent changes from ambient conditions of color in the receiving water. Further, he testified that the discharge does not cause foaming or frothing of a persistent nature in the accepting waters; that radioactive materials are not being discharged in excess of the amount specified by Commission rules; and nutrients from the discharge or other controllable sources from the MIMC facility do not cause excessive growth of aquatic vegetation or impair an existing designated use for waters adjacent to the facility.

The ED submits that, given the construction of the ponds and the impossibility of seeing the linings and the groundwater beneath, the most practical way of determining whether the material in the ponds is leaking from the ponds is by comparing samples from monitoring wells adjacent to the ponds with samples from background wells located farther away. The draft permit includes a provision

requiring the applicant to submit a groundwater sampling analysis plan within six months of permit issuance. This provision has specific requirements regarding location, depth, and the number of additional wells to be placed at the site. Commission geologist Mark Arthur testified that the groundwater monitoring required under the draft permit is more extensive than what was previously required and reflects a level of sophistication in requirements that has evolved at the Commission. The ED also notes that there was no evidence that leakage has occurred which has migrated off the property since the facility has been in operation.

The Examiner concurs with the staff. Based on the evidence in this record, the groundwater sampling analysis plan is the best method of addressing the protestants' underlying concern of whether the sludge material is escaping from the ponds. It will provide a more complete and thorough evaluation process for detecting seepage of material from the ponds and determining the impact of the facility on human health, safety, and the environment.

Accordingly, the Examiner concludes that, based on the evidence in the record, the MIMC facility does not pose an immediate adverse risk to human health, safety, or the environment; that if the ponds are leaking, the pond material has not migrated from the MIMC site and could not do so for several hundred years; and that the most feasible way to determine whether the ponds are leaking and remediation is necessary is by implementation of the groundwater analysis plan that the ED has included in the draft permit. Therefore, the renewal application should not be denied on this basis.

2. Whether the draft permit along with the three changes requested by MIMC will maintain the water quality standards of state waters and protect the environment.

The Examiner concludes that the draft permit proposed by the ED, along with the recommendations of the Examiner concerning the changes requested by MIMC, is protective of the environment and human safety and will maintain the water quality standards of the receiving stream.

The draft permit proposed by Commission staff contains basically the same parameters as the existing permit with some changes. The changes were made in response to concerns of protestants and as a result of new information received by the ED since the application was first submitted and during the hearing. The draft permit contains an interim and a final phase. The only difference between the two phases is that the interim phase of the permit requires the permittee to report dioxins and furans, and it requires monitoring of heavy metals pursuant to 31 TAC 319.23. The final phase has a limit for dioxins, and heavy metal limits are

listed pursuant to the surface water quality standards as set out in 31 TAC §307.6 or the heavy metal rule as set out in 31 TAC §319.23. The final phase of the draft permit is more stringent with regard to limits on heavy metals.

The existing permit included limits on BOD_5, Total Suspended Solids, Chemical Oxygen Demand, and oil and grease. These limits were continued in the proposed permit; however, the daily maximum/average oil and grease limits were reduced to 15/10 milligrams per liter (mg/l) respectively, to be consistent with similar type permits. Once per day monitoring was also continued for these parameters.

Limits on heavy metals are included in the proposed draft permit and are based on the approved 1991 Water Quality Standards in 31 TAC 307.6. Limits for Arsenic, Barium, Chromium, Manganese, and Selenium are based on 31 TAC 319 and were continued. Twice per week sampling is continued from the existing permit.

Effluent limits for Dioxins and Furans were added due to the presence of waste from a bleached kraft paper mill in the sludge. This limitation is consistent with limits imposed on other discharges that contain waste from a bleached kraft paper mill. Quarterly monitoring is required and is consistent with other dioxin dischargers in the state.

Other requirements added to the proposed draft permit are as follows:

1. A permit amendment may be required if the WBT sludge is significantly changed due to different industrial processes contributing to the GCWDA system.

2. Twice per year testing of the sludge for hazardous waste characteristics based on TCLP test is added to confirm the sludge is not hazardous, and notification requirements are included when the permittee becomes aware that the generator has classified the waste sludge as hazardous.

3. Annual analysis for priority pollutants is added to identify specific compounds, if any, that need to be included in permit limitations.

4. Requirements for a groundwater monitoring system are included to detect releases from the ponds to the waters of the state. The monitoring of existing wells is continued, and the permittee is required to submit a plan for a monitoring program that includes additional wells to be located adjacent to ponds that are currently used for sludge disposal or wastewater treatment.

5. Fish tissue monitoring is included, and monitoring requirements for dioxins/furans are described.

6. Biomonitoring requirements are added to evaluate the toxicity of the effluent; quarterly monitoring is required due to the intermittent nature of the discharge; chronic biomonitoring is required because discharge is to the Intracoastal Waterway which has significant aquatic life uses.

7. A two-foot freeboard requirement is added consistent with other permitted facilities in Texas.

8. Inspection and maintenance requirements are added to address erosion of side slopes of the pond embankments. This will help maintain the integrity of the dikes and prevent the uncontrolled release of waste.

9. Compliance with the Health and Safety Code is required.

10. A prohibition on construction of new ponds without appropriate industrial and hazardous waste authorization is included.

11. Closure requirements are continued in the proposed permit with specific requirements for submittal of a closure plan.

12. MIMC has agreed to stop accepting the GCWDA sludge at midnight on September 18, 1994.

Paul Price prepared a tissue sampling plan in accordance with the draft permit, Dr. Peggy Glass prepared a biomonitoring plan in accordance with the draft permit, and a groundwater well placement plan and a groundwater sampling plan have been prepared in accordance with the draft permit, all of which were either adequately discussed, or admitted into the record during the hearing.

The Texas Parks and Wildlife Department (TPWD) supports the draft permit but argues that a requirement for a solid waste closure permit should be included in the draft permit rather than language that allows for methods of "closure approval" because the facility is situated in a wetland area and the potential exist for extensive damage to wildlife resources if closure is not properly planned and accomplished. TPWD is concerned that the current language in the draft permit may deprive it of the opportunity to participate in the closure plan through the hearing process.

The ED responds that it is inappropriate for the Watershed Management Division to impose closure requirements since the most appropriate procedure for closure will be determined jointly by the Industrial and Hazardous Waste Division's Permitting Section and

the Closure Team in the Corrective Action Section. The ED states that the closure language was included in the draft permit so that the permit was not entirely silent on the matter.

There are designated sections within the Commission that specifically handle closure procedures. Because the language in the draft permit defers closure matters to these sections, the Examiner does not believe a change in the language is necessary.

GBF and GBCPA note that the draft permit proposes a daily average (30-day average) total suspended solids (TSS) of 60 mg/l, and a daily maximum TSS of 90 mg/l that is three times the maximum 30-day average and twice the daily maximum TSS allowed for domestic wastewater treatment plants. They argue that these limitations are considerably less stringent than that required of a municipal wastewater treatment plant and they question whether this permit attempts to reduce pollution to the maximum extent possible.

The ED aptly responds that it is more appropriate to compare two pond systems rather than an industrial wastewater pond system to a domestic wastewater mechanical plant. TSS limits for mechanical treatment processes are virtually always lower than TSS limits for pond systems, and the daily average TSS limit in the MIMC permit is lower than the typical daily average TSS limit in domestic wastewater pond system permits.

The Examiner is satisfied that the TSS limits included in the draft permit are consistent with Commission rules, regulations, and practices.

MIMC requests that the permit be renewed for five years. The ED has included a five-year term for the draft permit. The PIC suggest that the term of the draft permit should be shortened to three years since MIMC has agreed to stop accepting sludge from GCWDA on September 18, 1994. MIMC explained that although it has agreed to cease receiving sludge on September 18, 1994, supernatant from the last load of sludge will likely be treated and available for discharge four months after accepting the last sludge load. Additionally, rainfall will also cause the discharge to continue until a specific closure plan is approved by the Commission and a detailed schedule for implementation of that plan is finalized. Under these circumstances, and in deference to the ED's recommendation of a five-year term for the permit, the Examiner concludes that the PIC's suggestion is without merit.

During the hearing, MIMC requested three changes to the draf permit. John Mancini, an environmental engineer specializing i water pollution control, testified that the requested change represent the best technology available. Mr. Mancini testifie that the permit parameter limits that result from the requeste

changes will be protective of the environment and maintain the water quality standards of the state. He further testified that MIMC can meet the proposed permit limits if the changes are made.

a. Utilization of 1991 Water Quality Standards

MIMC requested that the 1991 Water Quality Standards be used in calculating permit parameters rather than the 1988 Water Quality Standards. This change will increase the amount of copper that can be discharged in the effluent while still maintaining the water quality standards. The ED supports this change because the original renewal draft permit was based on the 1988 standards that were in effect at the time. Prior to the evidentiary hearing, the 1991 standards were adopted by the Commission. Commission staff testified that this change will still maintain water quality standards in the state. The draft permit sumbitted by the ED incorporates the the 1991 Water Quality Standards.

Protestants Dr. Parker, Carolyn Guy and the five families, and GBF and GBCPA unequivocally oppose the renewal of this permit. The City of Galveston and aligned parties, while not waiving their opposition to renewal of the permit, do not object to this change if the permit is granted. The TPWD and PIC do not oppose this change in the draft permit.

Because this change applies water quality standards that are currently in effect, the Examiner supports this change in the draft permit.

b. Dissolved Metals Parameters

The second change to the draft permit requested by MIMC is that the draft 1992 Continuing Planning Process (CPP) document be used to determine the fraction of dissolved metals used in calculating certain discharge limits. This methodology is referred to as partitioning. Partitioning is a method that estimates the percentage of the total concentration of a pollutant that would be dissolved after mixing with the receiving stream. It is this dissolved portion of a pollutant that is considered to be bioavailable or potentially toxic to organisms in the receiving water. The draft CPP allows partitioning for lead, silver, copper, and zinc in marine waters. Relying on a recent study conducted by Texas A & M University involving partitioning, personnel at the Commission reviewed the study and decided to use partitioning in the implementation procedures to determine permit limits for the four metals for saltwater environments. The use of partitioning will increase the permit limits of the four metals in the draft permit.

The ED supports this change in the draft permit because it reflects Water Quality Standards implementation procedures in the 1992 draft CPP and is currently used by the staff to prepare draft permits. Kelly Holligan, a Commission environmental quality specialist, testified that changes to the draft permit that incorporate partitioning will also be protective of the environment and will maintain surface water quality standards. The draft permit submitted by the ED incorporates the partitioning methodology for the involved four metals.

The protestants object to the use of partitioning in calculating the parameters of the draft permit. They contend that partitioning will increase the amount of pollutants MIMC can discharge that are toxic to marine life; that application of partitioning will result in a significantly less stringent permit; and they note that the CPP draft has not been approved by the Commission. Furthermore, some protestants argue that partitioning should not be used in this instance because the CPP has had only limited distribution for public comment and is still subject to significant revision; the incorporation of this technique is based on a single study performed at the behest of the Texas Chemical Council, and sound scientific practice dictates that study results be proved to be reproducible before being implemented as accepted practice; and that applying this method under these circumstances is not protective of the environment. Moreover, GBF notes that there is no evidence that site specific factors, such as the amount of metals and pollutants already in the receiving water, have been tested and considered in the partitioning calculation. Mr. Mancini acknowledged that site specific factors can affect partitioning of metals.

A review of the evidence in the record indicates that, while the concept of partitioning in salt water of heavy metals is not in controversy, a general consensus has not emerged regarding the ability to quantitatively define the amount of partitioning for the involved metals. In addition, in the Examiner's opinion, there is simply insufficient evidence in the record to substantiate the staff's rationale for utilizing the partitioning methodology in this instance, particularly in light of the arguments advanced by the protestants. For these reasons, the Examiner declines to recommend the use of partitioning to calculate the four metal parameters in the draft permit.

c. Number-of-Samples Assumption

The third change in the draft permit requested by MIMC is that the Commission change the number-of-samples assumption used in calculating the daily average permit limit and daily maximum permit limit for toxicants. MIMC proposed that the statistical assumption of 12 samples per month be changed to two samples per month since

it is an intermittent discharger. Basically, a value is calculated that equals a concentration of a pollutant that the water body receiving the discharge can handle. This value is referred to as the waste load allocation and it represents the amount of pollutant that can be discharged that will protect water quality standards 99 percent of the time. Using the waste load allocation value, a long-term average is calculated. The long-term average represents the concentration of a pollutant that the facility treatment process would have to reach to maintain the waste load allocation 99 percent of the time. From the long-term average, permit limits are calculated. A permit limit is based on the variability of the treatment systems, for which the Commission assume a value of 0.6, and the number of samples taken over the course of a month and compared to the long-term average. Current Commission practice is to always use 12 as the number of samples, regardless of the number of samples that are required by the permit.

Mr. Mancini testified that calculating the permit limitation with 12 samples builds in a mathematical propensity for failing the permit. Recognizing that it is standard agency procedure to use 12 samples in its calculations, MIMC argues that the staff failed to provide evidence that the standard procedure would accurately reflect the average at the facility for months when it discharged less than 12 days.

The ED opposes this change because it is contrary to standard Commission practice. All facilities have the assumption of 12 used in their permit limit calculations. Commission employee Kelly Holligan, an environmental quality specialist, testified that if this change was accomplished it would allow MIMC to appear to be meeting the permit limits while it is not. He further testified that calculations based on 12 samples provides a safety factor that ensures that water quality standards are being met. The protestants join the ED in opposing this change in the calculation procedure.

The Examiner concurs with the staff's position and declines to include this change in the draft permit.

CONCLUSION

The draft permit contains special provisions and requirements that address all concerns raised by the protestants during the hearing, and more. The evidence in the record establishes that the draft permit will maintain the water quality standards of the receiving stream and is protective of the environment; therefore, the Examiner recommends the draft permit be issued in accordance with the discussion above.

In the event the Commission does not adopt either the revised permit proposal or the numerical limits advocated by Mr. Mancini, MIMC requests additional time to attain the permit limits. The term for the interim phase of the draft permit was to begin on issuance of the permit and last through September 30, 1992. The proposed start of the final phase of the permit was October 1, 1992. Because of the hearing in this matter, the time periods for beginning the interim and final phases of the draft permit must be adjusted. Therefore, the Examiner further recommends that the Commission allow MIMC three months from the date of Commission approval of a draft permit to comply with the interim phase of the draft permit, and one year from the date of Commission approval of a draft permit to comply with the final phase of the draft permit. During the three month period after Commission approval of a draft permit, MIMC will continue to operate under its existing permit. At the end of three months, the interim phase of the draft permit will begin and MIMC must begin monitoring for dioxins and furans, the daily maximum average oil and grease limits will decrease, all other requirements added to the permit will become effective, and the limits for heavy metals must comply with the hazardous metals rules at 31 TAC 319. The interim phase of the permit will end after nine months, at which time the final phase of the permit will begin and continue for the duration of the permit term. In the final phase of the permit, the dioxins and furans limits and the more stringent heavy metals limits based on 31 TAC 307.6 will become effective, as well as all other requirements in the draft permit.

3. Whether the residential wells located six or more miles from the MIMC facility have been adversely impacted by the contents in the sludge ponds.

The Examiner recommends that the Commission find that wells in the area of the MIMC facility have not been adversely impacted by the MIMC facility.

Several protestants who are residents living approximately six miles or more from the MIMC ponds voiced their concerns of possible contamination of their wells by the constituents in the ponds.

MIMC responds that the result of tests, conducted by its groundwater expert, Mr. Ewen, revealed that the regional groundwater gradient in the area of the MIMC site is generally moving from the northwest to the southeast and discharging into the Gulf of Mexico. The residents are located northwest of the MIMC facility; therefore, groundwater is flowing from the protestants' homes, toward the MIMC facility, and discharging into the Gulf of Mexico.

Moreover, the Commission conducted geologic and hydrogeologic tests in the area of the residential protestants in response to their concerns. Commission staff testified that the data gathered do not support the possibility that the MIMC facility adversely impacted residential water wells in the protestants' area.

Commission geologist Marilyn Long estimated a worst-case scenario to determine the minimum number of years it would take for groundwater from the MIMC facility area to reach protestants' wells. She considered permeability and porosity values that are higher than what actually exist in the area; a relatively flat gradient which reflects the actual hydrogeology of the area; and a regional groundwater flow toward the residents, although actual regional groundwater flow is away from the residents toward the MIMC site. Based on these variables and assumptions, Ms. Long testified that it would take approximately 627 years for groundwater in the pond areas to reach the property of residential protestants.

The Examiner concludes that the preponderance of the evidence in the record shows that protestants' wells have not been adversely impacted by the MIMC facility.

4. Whether MIMC is properly treating the sludge.

The Examiner recommends that the Commission find that the MIMC pond system is an acceptable method of treating the sludge and producing an acceptable effluent that can comply with the permit limits.

The City of Galveston and aligned parties, and Dr. Parker contend that rainwater is improperly diluting the effluent and that dilution is an unacceptable treatment process. They argue that by the introduction of rainwater the holding period is shortened because the effluent is diluted and is more quickly in compliance with the permit. They argue that this process is not treatment, but rather a bypass of the treatment system. They also argue that MIMC produced no evidence describing by quantification the time needed by specified organisms to digest the constituents of the sludge and that the treatment program does not require the addition of anything to the sludge.

Dr. Gloyna, an engineer who specializes in sanitary engineering, testified extensively about the biological process by which treatment in a pond system occurs. He testified that most of the waste material contains organic substances that contain carbon. Living organisms such as algae, fungus, and mold, that are found in ponds require carbon to survive, and through a variety of chemical and biochemical reactions, they utilize the carbon and degrade the organic substances and make it acceptable to the environment. Dr. Gloyna further testified that a pond system is very flexible in

that it can accommodate rainfall, different loading conditions, and seasonal changes in temperature and environment. Dr. Gloyna also noted that the draft permit has increased the number of parameters reported and testified that MIMC's pond system should be able to comply.

Roland McGinnes, the operator of the site for 20 years, testified that based on his experience, the treatment process requires approximately four months to achieve permit requirements. He also testified that the effluent is tested prior to discharge to ensure it is in compliance with the permit limits. In addition, a review of past discharge monitoring data of the MIMC facility indicates that the ponds have functioned efficiently in treating the sludge and producing an effluent that has not impaired the water quality standards of the receiving water.

Commission staff also testified that settling ponds are an acceptable method of treating sludge and that the material that has settled in the pond at the MIMC facility will be properly treated and disposed of pursuant to solid waste regulations.

GBF and GBCPA contend that MIMC's treatment process does not have an impact on treating the metals listed in the draft permit. They argue that MIMC has failed to comply with 31 TAC 319.24, the anti-dilution regulations of the Commission.

Section 319.24 prohibits the attainment of treatment levels "by the use of extraneous or other wastewater intermixed to dilute a particular discharge." The ED responds that there is no other on-site source of wastewater at the MIMC facility to dilute the discharge; therefore, this section is not applicable.

Based on the evidence in the record, the Examiner is satisfied that MIMC's pond system is an acceptable and effective treatment process that produces an effluent that meets the water quality standards of the State. The material that remains in the sludge ponds is not at issue in this proceeding, but will be addressed in the solid waste proceeding.

5. Whether provisions in the draft permit that require the applicant to submit various plans for Commission approval, if the permit is issued, violate the Administrative Procedure and Texas Register Act (APTRA).

The Examiner recommends that the Commission find that requiring the applicant to submit various sampling and testing procedures to the Commission does not violate the terms of APTRA.

GBF and GBCPA argue that various provisions in the draft permit requiring submission of plans for monitoring wells, groundwater

sampling and analysis, and the fish tissue study keep critical issues and technical information out of the public hearing process, which is contrary to Section 13d in APTRA, which affords all parties in a contested case the right to respond and present evidence and argument on all issues involved.

MIMC responds that most, if not all, of this information was either previously provided to the parties who participated in the hearing on the merits, or was presented during the hearing.

The ED responds that if the involved plans and studies were required prior to permit approval, MIMC could continue to operate under the much less stringent existing permit until the renewal application was granted or denied; therefore, submission of the information, if the permit is granted, is the more prudent course of action. Further, the ED states that MIMC requested only to renew the same conditions contained in the existing permit and that the more stringent provisions included in the draft permit by the ED are not required pursuant to the renewal application because the renewal application is not an ED-initiated amendment.

The Examiner concludes that the actions taken by Commission staff are prudent and do not violate the terms of APTRA.

6. Whether the Commission has proper jurisdiction over this matter.

The Examiner recommends that the Commission find that there are no jurisdictional problems in this proceeding.

The PIC questions whether the Commission has proper jurisdiction over this matter arguing that the public notice required by 31 TAC 279.5 did not identify BMcD as the owner of the facility and that BMcD did not make the requisite certifications regarding the contents of the application.

The original renewal application was submitted by MIMC. After learning that BMcD, a privately held corporation, owned the site where the MIMC facility is located, the ED informed BMcD that it was required to be a co-permittee. The application was supplemented and the hearing was re-noticed specifically to inform the public of the additional co-permittee. Additionally, BMcD accepted the responsibilities for compliance with the permit in certified statements adopting MIMC's original permit application.

The Examiner is satisfied that there are no jurisdictional problems in this proceeding.

OTHER ISSUES

Some of the protestants who live in the area of the facility complained about odors that emanate from the ponds. The PIC suggests that operational or design defects of the MIMC facility are causing the odor problems and requested that the draft permit require a design and operation program that prevents odors.

Air issues were excluded from this hearing. Nonetheless, while some instances of odor from the MIMC facility have been reported, such odors were not proved to be continuous and/or severe as to adversely affect the receiving body of water. More notable, however, is the fact that there is no evidence in the record to validate the PIC's request that a design and operation program to prevent odors be included in the draft permit, under the circumstances presented by this record. As an effort of good faith, however, MIMC is meeting with the family representatives to address this issue. In addition, the ED's counsel informed the protestants of various agencies and organizations that could help the protestants with odor nuisances.

ADDITIONAL FACTS

Evidence was presented which established the following:

1. MIMC does not have a record of significant environmental violations in the preceding five years at the Galveston County site or any site owned, operated, or controlled by MIMC.

2. MIMC has not made a false or misleading statement in the application or documents relating to the application.

3. MIMC is not indebted to Texas for fees, payment of penalties, or taxes under the Commission's rules or Title 5 of the Texas Health & Safety Code.

4. The discharge from the MIMC facility within the limits of the draft permit will meet the water quality standards of the Texas Water Commission Permanent Rules in 31 TAC Chapters 307 and 319.

5. Issuance of the renewal application will help to promote economic development in the state.

6. No parks, playgrounds, or schoolyards exist within one mile of the point of discharge of the MIMC facility.

7. MIMC has complied with all applicable requirements, including Chapter 26 of the Texas Water Code and the applicable rules of the Texas Water Commission.

8. The application for renewal of Permit No. 01221 should not be denied based upon MIMC's compliance history.

9. Good cause does not exist to deny renewal of the involved permit.

10. Additional facts relevant to this docket are included in the proposed Findings of Facts in the attached Order and are incorporated into this Proposal for Decision by reference.

After a review of the record and for the reasons provided above, the Hearings Examiner recommends that the Commission adopt the attached Order, including the Findings of Fact and the Conclusions of Law contained therein, and that the application for renewal of Permit No. 01221 be approved.

The final draft permit submitted by the Executive Director (a copy of which is attached) incorporates partitioning for some of the metal permit limits; however, the Examiner declined to recommend the use of partitioning and, therefore, requests that the draft permit be modified accordingly. With this change, the Examiner recommends issuance of the draft permit.

Linda Sorrells
Hearings Examiner
Office of Hearings Examiners

NOV 16 1994

ECOLOGICAL RISK ASSESSMENT QUALITY ASSURANCE PROJECT PLAN FOR SAMPLING AND ANALYSIS OF HALL'S BAYOU RANCH SLUDGE MANAGEMENT FACILITY

PREPARED FOR

MCGINNES INDUSTRIAL MAINTENANCE CORPORATION

MARCH 1, 1994

INDEXED
NOV 21 1994
ARMS

JONES AND NEUSE, INC.
Environmental and Engineering Services

March 1, 1994

Industrial Permitting Team
Watershed Management Division
Texas Natural Resource
Conservation Commission
P.O. Box 13087
Austin, TX 78711-3087

Re: McGinnes Industrial Maintenance Corporation
Sampling and Analysis Plan - Ecological Risk Assessment, Permit No. 01221

Gentlemen:

The Closure Plan for the Hall's Bayou Ranch Disposal Facility dated January 7, 1994 contains an Ecological Assessment Plan to evaluate whether the concentrations of chemicals of concern pose a risk to sensitive receptors/organisms at the facility. In accordance with EPA guidance, a screening procedure of existing data was performed to identify constituents of concern for which the ecological risk assessment will be performed. The results of the screening procedure are included in Appendix A to the enclosed document "Ecological Risk Assessment Quality Assurance Project Plan for Sampling and Analysis of Hall's Bayou Ranch Sludge Management Facility."

The objectives of the sampling and analysis program are discussed herein. Given that the closure plan proposes to enhance existing wetlands and create new wetlands at the site, sensitive receptors/organisms have been identified as those organisms which will directly use the ponds as habitat. The route of exposure to sensitive organisms will be through their food chains via media such as water, soil, and sediments. Once disposal activities at the site are terminated, the predominant use of the wetlands will be by waterfowl, shore birds, and wading birds. Use of the ponds by finfish and shellfish is expected to be minimal since there is no direct contact between the ponds and Galveston Bay. However, ambient concentrations in finfish and shellfish are being addressed as part of the waste discharge permit. Resident species (i.e., birds that use the ponds on a year-round basis as opposed to migratory waterfowl) are expected to be most frequently exposed to potential contaminants. Therefore, the feeding habits and diets of resident birds known to occur at the site will be examined (e.g., ducks- mottled duck (*Anas Fulvigula*); herons and egrets - great blue heron (*Ardea herodias*), great egret (*Casmerodius albus*), snowy egret (*Egretta thula*), block-crowned night heron (*Nycticorax nycticorax*); cranes and allies - common moorhen (*Gallinula chloropus*), American coot (*Fulica americana*); plovers - killdeer (*Charadrius vociferus*); and sandpipers - willet (*Catoptrophorus semipalmatus*).

912 Capital of Texas Highway South, Suite 300 Austin, Texas 78746 512-327-9840

The identified sensitive receptors have different feeding habits resulting in different food chains. Exposure will be through media and food chains (e.g., prey species and other food sources). Because some potential contaminants are not water soluble, they could accumulate in sediment and soil, then be biomagnified up the food chain. For aquatic food chains, the route of exposure will be from sediments to organisms dwelling in or on sediments (e.g., worms, mollusks, aquatic insects, crustaceans). Rooted aquatic plants and algae can accumulate contaminants from sediments and water. Prey species living in or near the water (amphibians and small fish) are likely to accumulate contaminants from water, sediments, and food sources. Previous biological surveys have identified vegetated pond berms as habitat for a variety of birds. Therefore, terrestrial food chains will be evaluated. Terrestrial food chains include soil to plants to birds feeding on seeds, and soil to organisms dwelling in or on soil (e.g., worms and insects) to birds. To determine contaminant exposures to these sensitive receptors (i.e., waterfowl, shore birds, and wading birds), all media routes of exposure (water, soil, and sediments) will be sampled. If necessary, based on the sample results, food sources in aquatic and terrestrial food chains (algae and plants, worms, aquatic and terrestrial insects, mollusks, crustaceans, and amphibians) may be sampled at representative ponds.

The primary phase of risk assessment sampling will involve sediment (sludge), surface soil and water sampling in 4 of the facility's 31 impoundments. The impoundments to be sampled are: impoundments 2 and 19 in the southeast complex, and impoundments 22 and 30 in the northwest complex. This represents the oldest and newest impoundments in the two operational series.

Sample collection will be on a one-time basis. Further sampling would only be recommended after the results have been evaluated. Further sampling details will be determined only after the analysis of sludge, soil and water results are complete. We request concurrence with the attached Sampling and Analysis Plan and the selection of chemicals of concern (Appendix A) prior to implementation. Should you have any questions please contact me at (512) 327-9840.

Sincerely,

JONES AND NEUSE, INC.

Tommy Slaughter
Project Manager

TS/sms/letters/HallBay.JWH

Enclosures

ECOLOGICAL RISK ASSESSMENT
QUALITY ASSURANCE PROJECT PLAN FOR SAMPLING AND ANALYSIS OF HALL'S BAYOU RANCH SLUDGE MANAGEMENT FACILITY

CONTENTS

1.0 PROJECT DESCRIPTION 3
1.1 Introduction 3
1.2 Site Background 3

2.0 PROJECT ORGANIZATION 3

3.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA .. 4
3.1 Measurement Purposes 4
3.2 Data Quality Objectives for Measurement Data 4

4.0 SAMPLING PROCEDURES 8
4.1 Sampling Plan 8
4.1.1 Water Samples 8
4.1.2 Sediment and Soil Samples 9
4.2 Sample Containers and Preservation 9
4.3 Sample Packaging and Shipment 10
4.4 Documentation 10

5.0 SAMPLE CHAIN-OF-CUSTODY PROCEDURES 11
5.1 Field Sampling Operations and Chain-of-Custody Initiation .. 11
5.2 Laboratory Operations 12
5.2.1 Duties and Responsibilities of Sample Custodians 12
5.2.2 Sample Receipt 13
5.2.3 Laboratory Logbooks and Workbooks 14

6.0 ANALYTICAL AND CALIBRATION PROCEDURES 15
6.1 Dioxins/Furans 15
6.2 Total Organic Carbon 15
6.2.1 Analytical Method and Practical Quanitation Limits ... 15
6.2.2 Calibration 15
6.3 Volatile Organic 16
6.3.1 Analytical Method and Practical Quanitation Limits ... 16
6.3.2 Calibration 16

7.0 DATA REPORTING AND VALIDATION 19
7.1 Reporting and Deliverables 19
7.2 Data Validation 20

8.0 INTERNAL QUALITY CONTROL 21

00181

TABLE OF CONTENTS
(CONTINUED)

9.0 SYSTEM AND PERFORMANCE AUDITS 23
9.1 Performance Audits 23
9.2 Laboratory Selection Process 23

10.0 PROCEDURES FOR ASSESSMENT OF DATA QUALITY 24

11.0 CORRECTIVE ACTION 24
11.1 Project Responsibilities - General Corrective Actions 24
11.2 Laboratory Responsibilities 24
11.3 Volatile Organics 25

12.0 QUALITY ASSURANCE REPORTS 25

00182

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

This Project Quality Assurance Plan (QAPP) has been prepared as part of The" Hall's Bayou Ranch Sludge Management Facility Closure Plan. The Closure Plan proposes the creation of fresh-water wetlands in the 32 surface impoundments which make up the facility. The implementation of the Closure Plan requires an Ecological Risk Assessment to assure that the material in the impoundments does not present any significant risk to the environment. This plan covers the sampling and analysis of pond sediments, pond water, and pond perimeter surface soils to provide the necessary chemical characterization data for the risk assessment .

1.2 SITE BACKGROUND AND DESCRIPTION

Site background and description are discussed in detail in Sections 1.0 and 3.0 of the Closure Plan. The factors most important to the design of the sampling and analysis plan are summarized here. The facility receives sludge from the Washburn Tunnel Plant of the Gulf Coast Waste Disposal Authority (GCWDA) in Pasadena, Texas. Sludge is delivered by barge to the facility and pumped to ponds at the site. After settling of the sludge, supernatant water and accumulated rainwater are transported by pipeline to ponds located near the Gulf Intracoastal Waterway (GIWW) for temporary storage and natural treatment (biological oxidation), followed by discharge into the GIWW. The existing facility consists of 29 engineered impoundments, two engineered oxidation ponds and one engineered storm water detention pond. The ponds are separated into two operational series and have a cumulative surface area of approximately 234 acres. The older operational series consists Ponds 1 through 19. The newer operational series consists of Ponds 20 through 31.

2.0 ORGANIZATION/RESPONSIBILITIES

MIMC will implement internal administrative procedures to maintain control over the implementation of the Closure Plan. A Project Manager will be selected to supervise this implementation. A Project Quality Assurance Manager (PQAM) will be appointed to implement this QAPP. It will be the responsibility of the PQAM to insure compliance with all requirements of this QAPP.

3.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT PURPOSES

3.1 MEASUREMENT PURPOSES

A risk assessment screening process of historical sludge, surface water and groundwater chemical characterization data has shown that dioxins/furans and selected volatile organic compounds represent the only chemical constituents of concern. An assessment of potential pathways of environmental exposure indicates that waterfowl use of the facility is the only pathway which requires additional data to make a definitive assessment. The purpose of this plan is to collect dioxin/furan and volatile organic compound data on sufficient samples to make this risk assessment. The dioxins/furans analyses must provide practical quantitation limits (PQLs) of ppt (parts per trillion or nanograms/kg) in soils/sediments and ppq (parts per quadrillion or picograms/ liter) in water samples. The volatile organics compounds analyses must provide PQLs of ppm (parts per million or milligrams/kg) in soils/sediments and ppb (parts per billion or micrograms/ liter) in water samples.

Practical quantitation limits are best defined as the sample concentration corresponding to the lowest calibration level used for the analysis. The sample concentration factor must be specified to completely define the PQL.

It will also be necessary to measure total organic carbon in the soils/sediments because the migration of dioxins/furans and volatile organic compounds is effected by this bulk parameter.

3.2 DATA QUALITY OBJECTIVES

Data quality objectives are the factors used to control and assess data quality. Data validation is the process by which the data quality is verified. Data quality objectives must be consistent with the intended use of the data. Data used for risk assessment purposes must be of the highest quality available. There are two principal categories of data quality objectives (DQOs), procedural and numerical. Procedural DQOs cover such factors as sample collection procedures, sample custody, sample preparation, instrument calibration, reporting requirements, etc. and address the concept of comparability. Comparability means exactly what the word implies - perform all aspects of sampling and analysis by controlled procedures so that results from one sampling event can be reliably compared to all others. Adherence to this QAPP will ensure the data comparability.

The principal numerical DQOs are precision, accuracy and completeness. They are defined below.

Precision measures the agreement or repeatability of individual measurements of the same property using identical measurement methods on duplicate samples. Precision will be expressed as Relative Percent Difference (RPD) for duplicate results calculated as follows:

$$RPD = 200 (R1 - R2)/(R1 + R2)$$

Where: R1 = Value for initial sample
R2 = Value for duplicate sample

00184

Sample Set is the group of soil, sediment, sludge or water samples collected for analysis in a single predefined sampling event designed to meet a specific measurement purpose.

Accuracy is the degree of agreement of a measurement with the accepted reference or true value. Accuracy of dioxin/furan and volatile organic analyses will be monitored by the use of surrogate spiking compounds in each sample. Accuracy will be calculated as the percentage recovery for an analyte spiked into a sample as follows:

Recovery (in %) = 100 (SSR - SR)/SA

Where: SSR = Spiked sample result
SR = Sample result
SA = Spike added

Completeness is a measure of the number of samples which pass any QC test such as precision, accuracy, holding time, etc. while adhering strictly to the prescribed methods it will be reported as Percent Completeness (%C). There will be 100% completeness required for holding times on all remediation certification measurements. Note that completeness control limits can only be applied when the number of tests is sufficient to be statistically significant. (a minimum of 10 total tests performed). The calculations for accuracy are typical of all completeness calculations and will be calculated as follows:

COMPLETENESS (IN %) = 100 (TESTS PASSING) / TOTAL TESTS

Precision and accuracy will be evaluated through the use of quality control samples. These include blanks to monitor inaccuracies due to contamination, matrix spikes to monitor accuracy as spike recovery, and duplicate analysis to monitor precision. Completeness requirements will apply only when the number of samples is sufficient to be statistically significant.

The numerical data quality objectives shown in Table 3-1 will apply:

TABLE 3-1

NUMERICAL DATA QUALITY OBJECTIVES

PARAMETER MEASURED	QC TEST	TEST CODE	PRECISION		ACCURACY % RECOVERY		COMPLETENESS GOAL (%) SAMPLE		PROJECT	
A. VOLATILE ORGANICS			SOIL	WATER	SOIL	WATER	SOIL	WATER	SOIL	WATER
	Surrogates	SU TEST					100	100	90	90
	d4-1,2,-Dichloroethane	SU 1	NA	NA	70-121	76-114	NA	NA	90	90
	d8-Toluene	SU 2	NA	NA	81-117	88-110	NA	NA	90	90
	4-Bromofluorobenzene	SU 3	NA	NA	74-121	86-115	NA	NA	90	90
	Internal Standard Areas	IS CHECK					100	100	90	90
	Bromochloromethane	IS 1	NA	NA	50-200	50-200	NA	NA	90	90
	1,4-Difluorobenzene	IS 2	NA	NA	50-200	50-200	NA	NA	90	90
	d5-Chlorobenzene	IS 3	NA	NA	50-200	50-200	NA	NA	90	90
	Matrix Spike Duplicates	ACCURACY					100	100	90	90
	Benzene	% REC			66-142	76-127	NA	NA	90	90
	No Matrix Effect	S/MS/MSD								
		IS/SU					NA	NA	90	90
		PRECISION					NA	NA	90	90
	Field Duplicate									
	Benzene	RPD	± 21	± 11			NA	NA	90	90

001186

TABLE 3-1 (continued)

NUMERICAL DATA QUALITY OBJECTIVES

PARAMETER MEASURED	QC TEST	TEST CODE	PRECISION		ACCURACY % RECOVERY		COMPLETENESS GOAL (%) SAMPLE	
B. DIOXINS/FURANS			SOIL	WATER	SOIL	WATER	SAMPLE	PROJECT
	Surrogates (Sample) (One of nine can fail but TCDD and TCDF must pass)	SU TEST					NA	85
	Isotope labeled internal standards	SU1 - SU9			25-150	25-150	89	NA
	SPIKE SAMPLES	ACCURACY						
		% REC			25-150	25-150	NA	NA
	DUPLICATE SAMPLES	PRECISION						
		RPD	± 50	± 50			NA	NA
C. TOTAL ORGANIC CARBON								
	Spike Samples	% REC			65 - 135	75-125		
	Duplicate Samples	RPD	± 25	± 30				

00187

4.0 SAMPLE COLLECTION

4.1 SAMPLING PLAN

The primary phase of risk assessment sampling will involve sediment (sludge), surface soil and water sampling in 4 of the facilities 31 impoundments. The impoundments to be sampled are; impoundments 2 and 19 in the southeast complex, and impoundments 22 and 30 in the northwest complex. This represents the oldest and newest impoundments in the two operational series. Water samples will be taken from each of the four designated impoundments and analyzed for Dioxins/Furans and volatile organic compounds. Sediment samples will be taken from each of the four impoundments and analyzed for Dioxins/Furans, volatile organic compounds and Total Organic Carbon (TOC). Water and impoundment sediment samples will be obtained using a 12-14 foot aluminum, flat-bottomed Jon boat with a centrally constructed sampling well. As surface water is often very shallow, an outboard or trolling motor is not practical and oars or paddles will be necessary. Surface soil samples will also be taken from the tops of these impoundment's berms and analyzed for Dioxins/Furans, volatile organic compounds and TOC.

4.1.1 Water Samples

Impoundment water depth varies from impoundment to impoundment and within each impoundment. Water depths range from zero to six feet. In impoundments that are no longer actively receiving sludge, surface water is the product of precipitation. Generally, surface waters in the impoundments are well mixed and can be considered to be homogenous. Where this is the case, one grab sample will be taken from each pond. Some impoundments contain either exposed (usually vegetated) areas or areas where sediment is very near to the surface. Where this is the case, water circulation may be restricted, and a single sample may not be representative of the total body of water contained within the impoundment. If more than one grab sample is deemed necessary, any water circulation barriers will be indicated on the impoundment map, along with each grab samples location. The grab samples will then be composited in the field to provide a single pond sample. A total of four water samples will be analyzed for Dioxins/Furans and volatile organic compounds.

Samples will be taken from the sample boat at a location representing approximate median water depth, using a disposable PVC bailer. The bailer will not be allowed to come into contact with the sediment. Before taking of the water sample, the bailer will be thoroughly rinsed in the water of the impoundment being sampled. Water samples will be immediately placed in laboratory supplied containers and put into an ice-filled cooler.

4.1.2 Sediment and Soil Samples

Grab samples will be collected on 100 foot centers from the uppermost eight inches of sediment within each impoundment will be sampled. The 100 foot centered grid will be marked with stakes along the impoundment berms with no sample point closer than 30 feet from any embankment side. All grab samples from each impoundment will be combined to form a single composite sample representing the sediment of that impoundment. Samples will be obtained using a piston sludge sampler constructed of PVC pipe (Figure 1).

As each grab sample is taken, it will be placed into a stainless steel mixing bowl. After all samples from an impoundment have been taken, they will be mixed thoroughly with a hand-held battery-powered drill with a paint-mixer attachment. The composite sample will then be prepared from the mixture, placed into laboratory-supplied containers and put into an ice filled cooler.

The PVC sampler will be thoroughly decontaminated between the sampling of each impoundment using a bottle brush, scrub brush, Alconox and deionized water. Before sampling begins in the next impoundment, the sampler will be rinsed in its surface water.

The surface soil on the top of the berms surrounding each impoundment selected for sampling will also be sampled. Grab samples will be collected to a depth of 8 inches every 200 feet around the perimeter of the impoundment. At each sampling point the surficial vegetation will be cleared away as necessary and soil samples will be taken using a stainless-steel hand auger. The grab samples will be completely mixed in a stainless-steel mixing bowl and a composite sample will be prepared from the mixture representing the perimeter soil of that impoundment.

4.2 SAMPLE CONTAINERS AND PRESERVATION

Eight ounce wide mouth glass containers will be used for soil and sediment samples. One liter glass containers will be used for water samples. These containers will be precleaned according to the following procedures:

- For volatile organic analyses - Detergent wash, tap water rinse, distilled water rinse, pesticide-grade or equivalent methanol rinse, oven dry at 105°C for one hour.

- For dioxins/furans analyses- The above described procedures will be performed as well as muffling at 250°C.

Alternatively, I-Chem or equivalent level 200 or 300 sample bottles may be used.

All sampling containers will have Teflon® lid liners. Required preservation techniques and holding times are as follows:

Volatile Organics Analyses

Preservative	Refrigerate
Analysis Holding Time (sediments/soils)	14 days
Analysis Holding Time (water)	7 days

Dioxin Furan Analyses (soils, sediments and water)

Preservative	Refrigerate
Extraction Holding Time	30 days
Extract Analysis Time	40 days

Total Organic Carbon (in soils and sediments)

Preservative	Refrigerate
Analysis holding time	14 days

4.3 SAMPLE PACKAGING AND SHIPMENT

All samples will be packaged according to DOT regulations. This procedure is designed to prevent leakage, spillage, and vaporization of the sample media. Individual sample containers will be placed in sealed bubble-wrap bags to prevent breakage. Waterproof ice chests or coolers will be used for shipping containers. Samples will be properly preserved in accordance with preservation requirements described in Section 4.2. Any preservative required will be added to the container prior to going into the field by the container supplier. Sample containers will be supplied by the analysis laboratory.

4.4 DOCUMENTATION

A field sampling book will be maintained by the field sampling crew chief The information to be kept in the log book includes, but is not limited to, the following:

- Project sample number;
- Sample location and identification;
- Analysis(es) to be performed;
- Field data (pH, temperature, sample preservation reference, etc., relating to sample, if any);
- Date and time collected;
- Date and time shipped;
- Analysis laboratory;
- Field observations (sample odor, or appearance, weather conditions, etc.); and
- Name and affiliation of all personnel present.

00190

5.0 SAMPLE CHAIN-OF-CUSTODY PROCEDURES

5.1 FIELD SAMPLING OPERATIONS AND CHAIN-OF-CUSTODY INITIATION

The integrity of the sample will be maintained by following Chain-of-Custody procedures. Chain-of-Custody responsibility is defined by the National Enforcement Investigations Center (NEIC) of EPA in the following manner:

a. It is in your actual possession, or

b. It is in your view, after being in your physical possession, or

c. It was in your possession and then you locked or sealed it up to prevent tampering, or

d. It is in a secure area.

Chain-of-custody will be controlled and tracked using an Analysis Request and Chain-of-Custody (ARCOC) document supplied by MIMC. The sampling crew chief will obtain a preprinted ARCOC from the MIMC project quality assurance manager (PQAM). The ARCOC will include fields for the following information:

- Project Name, Address and Phone Numbers
- Reporting Laboratory Name, Address, and Phone Numbers
- Requester and Turnaround Time
- Quality Control Level and Site Location
- Sample Number, Date Collected, Time Collected, Location, Designation (Grab or Composite), Matrix (Water, Sediment or Soil)
- Parameters Requested (standard lab test codes)
- Containers and Preservatives required for each sample
- Sampler's Name (Printed)
- Carrier (not used for direct pick-up by lab)
- Bill No. (not used for direct pick-up by lab)
- Relinquished By: (Signature, Date and Time-same as printed sampler name)

The field sample collection crew chief (of designated sampling crew member) will complete all fields of the ARCOC except the "Received By" field.

The laboratory representative will complete the 'Received By" field upon pick-up of the samples (for direct pick-up) or upon receipt at the laboratory.

The ARCOC will be filled out completely and legibly. Corrections will be made by drawing a line through and initialing and dating the error with indelible ink, and then entering the correct information. Erasures and "white out" are not permitted. All transfers between personnel will be recorded in the "Relinquished by" and "Received by" spaces, along with date and time. All information except signatures shall be printed. Sample containers will be prelabeled as supplied by the contract laboratory. The label will be preprinted with the laboratory name, address and phone number; the Tests Required and any preservative added by the laboratory. The sample crew chief will complete the following fields as the containers are filled:

- Project Sample Number,
- Date/Time Collected, and
- Collected by (sampler's initials).

ARCOCs and other shipping/sample documentation accompanying the shipment will be enclosed in a waterproof plastic bag and placed in the sample shipping containers (coolers). Coolers must be sealed with custody seals (only for indirect delivery) in such a manner that the custody seal would be broken if the cooler were opened prior to laboratory acceptance. The laboratory will be notified of the sample shipment and follow-up will be conducted to ensure samples were received.

5.2 LABORATORY OPERATIONS

5.2.1 Duties and Responsibilities of Sample Custodians

Maintaining chain-of-custody within the laboratory is the primary duty of the laboratory sample custodian. The duties and responsibilities of the sample custodian shall include but not be limited to:

a) Receiving samples by signing the ARCOC, thereby verifying laboratory receipt.

b) Notifying the sample crew chief if expected samples do not arrive as scheduled and initiate search with responsible shipping party.

c) Inspecting sample shipping containers for presence/absence and condition of: custody seals, locks, "evidence tape", etc. container breakage and/or container integrity.

d) Recording condition of both shipping containers and sample containers (bottles, jars, cans, etc.) in appropriate logbooks or on appropriate forms.

e) Signing appropriate documents shipped with samples (i.e. airbills, delivery logs, etc.)

f) Verifying and recording agreement or non-agreement of information on sample documents (i.e., sample tags, labels, ARCOCs, etc.) in appropriate logbooks or on appropriate forms. If there is non-agreement, record the problems, contact the PQAM for direction and notify appropriate laboratory personnel. Any corrective action directions shall be documented in the laboratory file.

g) Initiating paperwork for sample analyses on appropriate laboratory documents as required for the analysis.

h) Marking or labeling samples with laboratory sample numbers and cross-referencing laboratory numbers to field identifications and sample labels.

i) Completing entry of information into the Laboratory Information Management System (LIMS).

j) Placing samples, sample extracts, and spent samples in appropriate storage and/or secure areas.

k) Controlling access to samples in storage.

l) Monitoring Chain-of-Custody of samples in the laboratory.

m) Returning hazardous sample residues to MIMC for disposal.

5.2.2 Sample Receipt

The sample custodian or person designated by the sample custodian will receive the samples for the laboratory by signing and dating the ARCOC. The laboratory will maintain a bound notebook, the Master Custody Logbook, in which laboratory numbers are recorded sequentially. A laboratory number will be assigned to the set of samples and recorded on both the ARCOC and in the Master Custody Logbook. All of the following information is recorded in the logbook:

- Laboratory number
- Number of samples received
- Project number
- Date sampled
- Date received
- ARCOC (present or absent)

Samples will be unpacked and any unusual conditions noted under Laboratory Remarks on the ARCOC which may include, but are not limited to comments such as "broken", "no preservatives on label," and "leaking." Sequential laboratory identifications are assigned to each unique project sample identification number by the laboratory. The information on the bottle labels is verified against the information on the ARCOC. If there are no discrepancies the bottles will be labeled with the laboratory ID number. If there are discrepancies, the laboratory will notify the PQAM or sample crew chief.

The person logging in the samples will then complete a sample receipt checklist using information from the ARCOC to complete the notes section. The presence or absence of chain-of-custody forms and seals on indirect shipments will be noted on the sample receipt checklist in the appropriate spaces. The conditions of the samples will also be noted on the sample receipt checklist with any discrepancies or problems recorded under notes. The date of sample collection, date of receipt and holding times for requested analyses will be compared and problems or discrepancies noted. The presence or absence of chain-of-custody tapes on sample containers will be recorded, when samples have not been transported directly to the laboratory by the laboratory pick-up service. Discrepancies between sample labels and the ARCOCs will be described. The sample receipt checklist will be completed by signing and recording the date and time. Samples will be stored in a secure area. All discrepancies will immediately be reported to the Project Data Base Manager for resolution. Analyses will not proceed until the Data Base Manager or Project Quality Assurance Manager grant approval.

Samples received when the sample custodian and other designated recipients are absent should be placed in a secure refrigerated location. The person receiving the shipping container

Workbooks will be reviewed each month by the laboratory QA personnel, signed, and dated with the statement "read and understood by."

6.0 SAMPLE ANALYSIS AND CALIBRATION PROCEDURES

6.1 TOTAL ORGANIC CARBON

Total organic carbon analyses shall be performed using a modification of U.S. Environmental Protection Agency Method SW-846-9060, Revision 0, 1986 . The analysis shall employ the technique of catalytic combustion. The sample shall be combusted at two temperatures to differentiate the inorganic and organic carbon. The expected detection limit of this method is 0.1 % (dry weight basis).

6.2 DIOXINS/FURANS

6.2.1 Analytical Method and Practical Quantitation Limits

Composite samples will be extracted, cleaned-up, and analyzed by U.S. Environmental Protection Agency Method SW-846-8290, Revision 0, 1990. Practical Quantitation Limits (PQL) for dioxins and furans are as follows:

DIOXIN/FURAN PRACTICAL QUANTITATION LIMITS

CONGENER SERIES	PQL	
	WATER (pg/liter) (ppq)	SOIL/SEDIMENT (pg/g or ng/kg) (ppt)
TETRA	20	2
PENTA	20	2
HEXA	100	10
HEPTA	100	10
OCTA	200	20

Note: Assumes one liter water sample and 10 gram soil/sediment sample with a final extract volume of 100 ul. This is the nominal concentration factor expected and PQLs will be higher if high organic content prevents achieving a final extract volume of 100 ul.

Samples containing reportable quantities (see Section 7.0) shall be confirmed on a second column analysis.

6.2.2. Calibration

The laboratory shall perform all calibrations and meet all associated quality control limits as required by the method. These are summarized below:

00194

1. Static resolving power checks at the beginning and end of each 12-hour shift demonstrating static resolving power of 10,000 (10 percent valley definition).

2. Verify ion abundance ratios, signal/noise ratios, minimum levels and absolute retention times as well as gas chromatograph retention time windows prior to initial or routine calibration.

3. Initial calibration at five concentration levels for 17 unlabeled target compounds, nine isotope labeled internal standards and two isotope leveled recovery standards. The % RSD for the RRFs of the 17 target compounds shall not exceed + 20 % and those for the nine internal standards shall not exceed $\pm$ 30 %.

4. Demonstrate isomer specificity by verifying that the height of the valley between the most closely eluted isomers and the 2,3,7,8-TCDD and TCDF isomers is less than 25%. This must be performed at the beginning of each 12-hour shift for calibration or analyses.

5. Perform routine calibration verification at the beginning of each 12-hour shift to demonstrate acceptable ion abundance ratios, signal/noise ratios, response factor reproducibility, and absolute retention times of the $^{13}C_{12}$-1,2,3,4-TCDD and the $^{13}C_{12}$-1,2,3,7,8,9-HxCDD isomers.

6. Calculate concentrations of unlabeled compounds by isotope dilution using the average RRF of the initial calibration.

7. Redo initial calibration when %D exceeds $\pm$20% for any of unlabelled standards.

6.3 VOLATILE ORGANIC COMPOUNDS

6.3.1 Analytical Method and Practical quantitation Limits

Volatile organics sample preparation and analyses shall be performed according to the EPA-SW-846-8260 method. Practical quantitation limits for volatile organics compounds are listed in Table 6-1.

6.3.2 Calibration

The laboratory shall perform all calibrations and meet all associated quality control limits as required by the method. These are summarized below:

1. Three internal standards.

2. A single level continuing calibration (CCAL) to show minimum response factors for System Performance Check Compounds (SPCCs) and that RFs for Calibration Check Compounds (CCCs) do not differ more than ±25% from the five point curve.

3. All ICALs and CCALs must pass RT check.

00196

TABLE 6-1

ANALYTICAL METHODS AND DETECTION LIMITS

Measurement Purpose	Measurement Group/Analyte	Method Reference	Practical Quantitation Limit (PQL) Solid	Aqueous
Solids = Soils/sediment/sludge		Aqueous = Groundwater or supernatent		
	VOLATILE ORGANIC PRIORITY POLLUTANTS	EPA-SW-846-8260	mg/kg	µg/l
	Chloroform (3)		0.005	5
	Benzene		0.005	5

7.0 DATA REPORTING AND VALIDATION

7.1 REPORTING AND DELIVERABLES

Dioxins/Furans

For each composite sample, results must be reported for the 17 specific congeners listed in the method when detected above the Practical quantitation Limits (PQL) given earlier. Results for other congeners detected above the PQL in each congener series (tetra through octa) shall be reported as total series values (e.g., other tetra TCDDs, other tetra TCDFs, etc.). Target compounds meeting identification criteria but falling below the PQL will not be reported as the accuracy is too unreliable to support risk assessment. Results shall be reported for environmental samples and laboratory method blanks.

The laboratory shall also provide documentation showing compliance with method quality assurance and quality control procedures; and corrective actions as described in Section 11.

When corrective action is required for failure of QC tests only the data passing QC shall be reported, but the set narrative should address these QC issues. When the initial analysis contains target compounds above the calibration range or is affected by interference, the internal standard recoveries can be reported from the undiluted analysis. Results shall be reported from the analysis which the analyst considers to be most accurate when multiple analysis are performed (initial analysis, second column, dilution, extract re-analysis, or sample rerun). The justification for the selection shall be discussed in the set narrative. Target compounds reported outside the calibration range in a diluted analysis shall be reported with an appropriate flag indicating whether they are above or below the calibration range. Diluted or re-extracted samples shall be reported from the combined analyses which provide the most accurate result.

Total Organic Carbon

Results must be reported for environmental, duplicate and spike samples. Spike samples shall be reported as concentration and as % recovery. Duplicates shall be reported as concentration and RPD.

Volatile Organic Compounds

For each composite sample, results must be reported for the listed compounds when detected above the Practical quantitation Limits (PQL) given earlier. Target compounds meeting identification criteria but falling below the PQL will not be reported as the accuracy is too unreliable to support risk assessment. Results shall be reported for environmental samples and laboratory method blanks. Surrogate recovery and internal standard areas will be reported with Sample, Matrix Spike, and Matrix Spike Duplicate (S/MS/MSD) results. All applicable Initial and Continuing Calibration data, including GC/MS Tuning and Mass Calibration (Bromofluorobenzene - BFB) will also be provided with the sample data package. Collection time, analysis time, and actual holding time will be given for each group measurement on each sample.

The laboratory shall also provide documentation showing compliance with method quality assurance and quality control procedures; and corrective actions as described in Section 11.

When corrective action is required for failure of QC tests only the data passing QC shall be reported, but the set narrative should address these QC issues. When the initial analysis contains target compounds above the calibration range or is affected by interference, the internal standard recoveries can be reported from the undiluted analysis. Results shall be reported from the analysis which the analyst considers to be most accurate when multiple analysis are performed (initial analysis, dilution, extract re-analysis, or sample rerun). The justification for the selection shall be discussed in the set narrative. Target compounds reported outside the calibration range in a diluted analysis shall be reported with an appropriate flag indicating whether they are above or below the calibration range. Diluted or re-extracted samples shall be reported from the combined analyses which provide the most accurate result.

7.2 Data Validation

Total Organic Carbon

1. Verify that duplicate RPDs are within the $\pm$ 25 % control limit.

2. Verify that spike recovery is within the 75-125% control limit.

3. Verify that any required corrective actions have been performed and are discussed in the set narrative.

Dioxin/Furans

1. Verify that initial calibration relative response factors (RRF) have %RSD less than $\pm$ 20 % for the 17 labeled standards and less than $\pm$ 30 % for the nine labeled reference compounds.

2. Verify that the chromatographic resolution between 2,3,7,8-TCDD and any other unlabeled TCDD isomer is $\leq$ 25%.

3. Verify the mass spectrometer resolution exceeds 10,000 by examining the peak profile.

4. Verify that the routine calibration % D does not exceed 20% for any of the 17 unlabeled standards and that all target compound ion sets monitored meet relative abundance criteria.

5. Verify that a column performance and resolution check standard were run at the beginning and the end of the 12 hour shift

6. Verify that the recovery of all labeled internal standards is within the 25-150% control limit for all environmental and control samples.

7. Verify that the method blank is free of contamination.

8. Verify that any required corrective actions have been performed and are discussed in the set narrative.

Volatile Organics

1. Verify all required data package components are present (digitized or hardcopy)

2. Verify all holding times are met.

3. Verify all relative abundances from mass spectrum list are within limits for all calibration tunes.

4. Verify %D for all Calibration Check Compounds are below indicated values for each CCAL.

5. Verify that all target compounds, internal standards, and surrogate compounds are assigned correctly using Relative Retention Time (RRT) and Peak No. checks.

6. Verify that the method blank is free of contamination.

7. Verify that all sample retention times (RT) are within ± 30 seconds of the RT in the relevant CCAL.

8. Verify that all internal standard areas meet the reproducibility Data Quality Objectives (DQO) in comparison with CCAL Internal standards, and that all surrogates meet recovery DQOs.

9. Verify MS/MSD precision and accuracy DQOs are met.

10. Verify that any required corrective actions have been performed and are discussed in the set narrative.

8.0 INTERNAL QUALITY CONTROL

Appropriate internal quality control mechanisms will be applied to all aspects of the project sampling, analysis and data reporting endeavors. The following internal QA mechanisms will be utilized in the project.

Mechanism	Definition/Purpose
Field duplicate	One of a pair of non aqueous samples which have been thoroughly homogenized in the field or laboratory, split and placed in separate sample containers (prepared after cooling for volatile analytes). **This provides a measure of precision of the sampling and analysis procedure;** alternatively, the split samples can be used for interlaboratory comparison (dioxins/furans in soils/sediments only).
Method blank	Analytical control sample consisting of all reagents and standards that is exposed to the complete sample preparation procedure beginning with sample preparation and ending with sample analysis. **This measures contamination introduced in the analysis laboratory** (dioxins/furans only).
Laboratory	Laboratory split of a single sample (TOC only). **This provides a measure of precision attainable by the performing laboratory.**
Performance check	A sample containing known concentration(s) of analyte(s). May be submitted blind or known. **This provides a measure of overall bias. Submitted blind as ongoing check of laboratory accuracy and as a known for laboratory selection or problem resolution.**
Quality control sample	One of the above.
External standard	Known standards used to calibrate instrument response. **This provides data for quantitation.**
Internal standard	Known standard(s) added to every standard, QC sample and environmental sample after preparation and prior to analysis. **This provides data to allow for correction of variable transmission of multiple analytes in a multi-component analysis and for variable transmission of analytes for multiple analyses** (dioxins/furans only).
Surrogates	Labeled counterparts of target compounds (referred to as internal standards in Method 8290). Added to every standard, QC sample and environmental sample in known quantities prior to sample preparation. **This provides a measure of the sample preparation efficiency which is related to sensitivity.**
Laboratory Selection	A systematic process of laboratory selection using systems criteria to assess the available instrumentation, site visits, performance check samples and performance incentives/penalties to select analysis laboratories. **This activity will assure the availability of optimum laboratory service for the project.**

Data Validation — A systematic process of data checking beginning with sample collection and continuing through sample handling, analysis, data reduction, reporting and interpretation. **This minimizes clerical and omission errors while verifying that all QA objectives are satisfied.**

Standard frequency for the QC samples listed above will be one per set for each media sampled or a minimum of 5%, whichever is larger. Data validation as described in Section 7.0 will be used for project quality control of all measurements.

9.0 SYSTEM AND PERFORMANCE AUDITS

System audits are qualitative evaluations of all components of field and laboratory measurement systems to determine their proper selection and use. A complete systems audit is not practical for a project of this size.

9.1 Performance Audits

The performance audit is a quantitative evaluation of the measurement systems used in the project. It involves testing the measurement systems with samples of known composition to evaluate precision and accuracy. The use of the daily standards listed in Section 6.0 provides an on-going performance evaluation of all project measurement systems. The quality control samples described in Section 8.0 (blanks, field duplicates, lab duplicates, matrix spikes and surrogates) provide a performance audit of all measurements. In addition, a dioxin/furan performance check sample will be submitted to the laboratory with the samples to verify the accuracy of their results.

9.2 Laboratory Selection Process

Selection of a qualified laboratory is essential to provide acceptable data quality. Not all laboratories offering the required analyses are fully qualified to perform the services. The laboratory will be selected on the basis of a combination the following:

1. General Qualifications

    a. Instrumentation in operation for a minimum of 2 months.

    c. Sample preparation equipment operational for a minimum of 1 month.

    d. Member of CLP or some certification program. certification: certification means New Jersey, California or other state programs or demonstrated ability to analyze/produce measurements and reports.

    e. Computerized laboratory data and sample tracking system.

    f. Demonstrated ability to produce required reporting and deliverables.

    j. Adequate experienced personnel supplemented by an in-house training program.

2. Passing results for performance check samples for all methods/compounds involved; alternately submit data from on-going performance evaluation samples analyzed within the last three months.

3. Agree to a systems audit/site visit.

10.0 PROCEDURES FOR ASSESSMENT OF DATA QUALITY

Data quality assessment will be the responsibility of the Project QA Manager (PQAM). Data quality of individual samples will be assessed by the use of precision and accuracy obtained through duplicate analyses, a spiked performance evaluation sample, and internal standard recovery. Bias due to sample contamination will be evaluated by including method blanks in all measurements, and minimized by strict adherence to control limits for blank results.

The data quality assessment will be performed as part of the data validation described in Section 7.0. The primary attributes used to assess data quality will be:

1) adherence to procedures (holding times, calibration requirements, etc.);

2) precision of duplicate samples and duplicate spiked samples;

3) accuracy of target compound and surrogate spiked sample results;

4) completeness of quality control objectives (as discussed in Section 3); and

5) the evaluation of performance check sample results.

Holding times must meet the requirements listed in Section 4.2.

Calibration requirements must meet the criteria listed in Section 6.2 and the referenced methods. Precision, accuracy, and completeness must meet the data quality objectives given in Section 3.2.

11.0 CORRECTIVE ACTIONS

11.1 TOTAL ORGANIC CARBON

The laboratory shall rerun (sample preparation and analysis) any samples for which the accuracy of the spike sample or the precision of the duplicate sample is outside the control limits. A second result outside control limits shall be considered a matrix and require no further action.

11.2 DIOXIN/FURAN ANALYSES

All corrective actions relating to calibration and instrument performance verification as listed in Method EPA-SW-846-8290 and Section 6.2 shall be performed.

All samples extracted with method blanks that have any of the 17 individual target compound reported as contaminants at concentrations above 0.5 times the PQL shall be rerun (re-extracted and re-analyzed).

When initial analyses contain target compounds that exceed the upper calibration level or have interference that reduce data quality, the extract shall be diluted and re-analyzed. The dilution shall be selected to bring the lower (tetra and penta) series in calibration insofar as possible.

When internal standard (surrogate) recoveries for tetra through hexa TCDDs or TCDF species are outside the control limits, the sample extract shall be re-analyzed. If the re-analysis passes QC, report only the second analysis. If the re-analysis fails QC, the sample must be rerun. If the rerun fails QC, report a sample matrix effect in the set narrative. If the rerun passes QC, report only the second analysis.

11.3 VOLATILE ORGANICS

All corrective actions relating to calibration and instrument performance verification as listed in Method EPA-SW-846-8260 and Section 6.3 shall be performed.

When an internal standard test or surrogate recovery test is failed for any sample, that sample set shall be rerun if no group matrix effect is indicated.

When MS/MSD precision and accuracy test failed, rerun least compliant spike if no group matrix effect indicated.

When a compound is above the calibration range, sample shall be rerun using a smaller sample size. The sample size shall be selected so that the maximum number of compounds possible are in the calibration range. Only one rerun is required.

When method blank contains target compounds in excess of PQL, blank must be rerun.

12.0 QUALITY ASSURANCE REPORTS

The PQAM will prepare a QA report for the project. The report will summarize the data quality as demonstrated by the data validation performed and certify its use for the intended purpose of risk assessment. Any qualification of the data resulting from QA deficiencies will be thoroughly discussed.

APPENDIX A

SELECTION PROCESS FOR CONSTITUENTS OF CONCERN

ECOLOGICAL RISK ASSESSMENT

The first step in performing an ecological risk assessment is compilation and evaluation of analytical and toxicological data. Appendix A and associated tables includes a review of analytical data generated during sampling events from 1986-1992 at Hall's Bayou Ranch Sludge Disposal Facility. The tables also include soil and groundwater Media Specific Concentrations Criteria, background data, and method practical quantitation limits. The objective of this data review is to provide the basis for the selection of indicator chemicals or constituents of concern. These chemicals and constituents will be included in the Quality Assurance Project Plan for Sampling and Analysis of Hall's Bayou Ranch Sludge Management Facility. Exposure of environmental receptors of concern to chemicals or constituents of concern will be quantitatively or qualitatively evaluated in the Ecological Risk Assessment to the extent practicable. Based on the literature, soil, sediment and water are considered the primary sources of exposure for all ecological receptors. The process used to conduct the Ecological Risk Assessment is illustrated in Figure A-1. The data evaluation procedures used in this Appendix follow the procedures outlined in Risk Assessment Guidance for Superfund Volume 1 "RAGS" Human Health Evaluation Manual (EPA/540/1-89/002, December, 1989) and U.S. EPA, Peer Review Workshop Report on a Framework for Ecological Risk Assessment, EPA/625/3-91/022, 1992.

The constituents analyzed in sludges at the Hall's Bayou Ranch are identified on the Appendix IX list (40 CFR 261, 264). A summary of sampling results was provided in the Closure Plan dated January 7, 1994.

Data Evaluation

Data were obtained from Appendix 3 and 4 of the Closure Plan for Hall's Bayou Ranch Sludge Disposal Facility compiled by Advanced Sciences, Inc. in July, 1992. The following steps were followed in accordance with EPA and TNRCC methodology as part of the data evaluation process:

- selection of media (soil, sediment, surface water, and groundwater) at risk;
- comparison of data with respect to practical quantitation limits (PQLs) with tables contained within SW 846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods;
- comparison of data with respect to blanks and background soil data;
- comparison of data to Media Specific Concentrations (MSCs) published in the Texas Register;and
- selection of a list of constituents for use in the risk assessment.

Groundwater at Hall's Bayou Ranch contains total dissolved solids ranging from 11,000 to 73,000 mg/L. This high concentration of dissolved solids renders the groundwater unfit for human or animal consumption, thus groundwater was eliminated as a media for concern. In

addition, the concentrations of parameters in the sludge at the site were compared to groundwater protection criteria which have been adjusted by multiplying by one hundred.

Evaluation of Practical Quantitation Limits, Blanks and Background Data-Risk Criteria 1

Samples have been obtained of the sludges, effluent and groundwater at the Hall's Bayou Sludge Disposal Facility. Tables A-1 through A-5 list the analytical parameters (compound) from the Appendix IX list for sludges, number of samples for which parameter analyzed, range of PQLs for each sample, number of samples in which parameter detected, the maximum detected, the TNRCC MSCs for residential use, practical quantitation limits from the SW 846 methods, and the background concentration for each parameter.

In accordance with TNRCC guidelines published in the Risk Reduction Rules (Texas Register, June 15, 1993), analytical data (reported concentrations and quantitation limits) were compared to the background concentrations and to the method PQLs. Constituents for which either the sample quantitation limit or the reported concentrations exceeded the method PQL or the background concentration were identified. These constituents which do not meet Risk Criteria 1 are listed in Table A-6. The TNRCC has not published criteria for dioxins and furans; all parameters with reported concentrations for dioxins and furans are retained as sampling parameters for further toxicological evaluation.

Trip, field and laboratory method blank samples were analyzed to provide a measure of contamination which may have been introduced during field collection, transportation, extraction and analysis of samples. Field and trip blanks did not detect any constituents. No compounds were detected in volatile, semivolatile, dioxin/furan or pesticide blanks.

Background measurements were performed on one soil sample, BG-001, for selected parameters of the Appendix IX list. Of the organics, alpha-hexachlorocyclohexane (a-BHC) was eliminated from consideration based on its detection in the background sample.

Three semivolatile compounds, aniline, phenacetin, and o-toluidine, were eliminated from consideration as posing an ecological risk (Table A-7). PQLs were not defined for these parameters for soil in SW-846-8270, however PQLs were identified for groundwater. The groundwater PQLs were multiplied by 66(normal soil weight 30 g and GPC cleanup) to obtain soil PQLs.

Concentrations of background levels of arsenic, chromium, copper, lead, nickel and zinc in soil in the United States (U.S.G.S., 1984[1]) were compared to the concentrations at Hall's Bayou Ranch (Table A-8). It was determined that the concentrations of metals at this facility are within the normal ranges for metals in soil in the United States. Based on this information, no metal parameters were retained for further risk assessment.

---

[1]Shacklette, H.T., Boerngene, J.D., Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. U.S. Geological Survey Professional Paper, 1270. Washington, D.C.; U.S. Government Printing Office, 1984.

Screening of Media Specific Concentrations-Risk Criteria 2

Constituents which exceeded background or PQL levels were evaluated by comparison of the reported concentrations with Media Specific Concentrations (MSC) for protection of groundwater and soil for residential use. Eight parameters identified in Table A-6 did not have MSC values published. Using structure-activity relationships, these parameters were assigned MSC values of related compounds (Table A-7). Based on the comparison of concentrations with MSC values, these compounds were eliminated from further risk assessment activities. In addition, all other volatile and semivolatile organics (except benzene and chloroform) were eliminated from consideration as causing an ecological risk based on soil SAI-Residential MSC values.

The groundwater protection criteria for g-BHC (Lindane) is specified as 2.00×10^{-2}; adjustment of this number to 2.00×10^{0} (for naturally occurring total dissolved solids) eliminates lindane as a criteria compound. This same adjustment eliminates acrylonitrile, benzene, chloroform, bis(2-chloroethyl)ether, and a-BHC from the health based screening process for groundwater.

Selection of Constituents of Concern

The Appendix IX List of constituents serves as the primary list evaluated in the screening process. The Toxicity Characteristic Leaching Procedure list was used to define a non-hazardous classification for sludges at the facility and was not used to evaluated exposure concentrations, to determine the fate and transport of an indicator chemical, or to evaluate risk posed by the site. Only limited hazardous constituents were detected in the sludge samples above background or TNRCC Risk Reduction Levels. Selection of indicator chemicals was based on the following factors:

- processes and operations associated with sludges disposed at the facility;
- positive detection of the chemical in more than one sample;
- exceedance of the chemical concentration in the sludge with respect to TNRCC Risk Reduction Rules (Criteria 1 and 2), typical background levels and method practical quantitation limits.

The following chemicals were retained as sampling parameters and for evaluation as chemicals of concern for the ecological risk assessments; based on the evaluations outlined above these chemicals are believed to be appropriate indicators of contamination in water, soil and sediment for the Hall's Bayou Ranch Sludge Disposal Facility.

Volatile Organics	Semivolatile Organics	Pesticides/PCBs/ Herbicides	Metals	Dioxins/Furans
Benzene Chloroform	None	None	None	2378-TCDD 1234678-HpCDD 2378-TCDF 123478-HxCDF Total HxCDD Total HpCDD Total PECDF Total HxCDF

TABLE A-1

SCREENING OF VOLATILE ORGANIC COMPOUNDS - SLUDGE SAMPLES
(1986 - 1992)
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP - Residential[a] (mg/kg)	Soil SAI - Residential[a] (mg/kg)	PQL[b] (mg/kg)	Background (mg/kg)
Acetone	15	<0.010 - <1.20	5	0.596	3.65×10^{2}	3.82×10^{3}	0.100	<0.010
Acetonitrile	10	<0.040 - <0.400	0	ND	2.19×10^{1}	1.65×10^{3}	0.100	<0.040
Acrolein	16	<0.020 - <1.20	0	ND	7.30×10^{1}	1.56×10^{3}	0.875	<0.020
Acrylonitrile	24	<0.010 - <1.50	1	0.12	1.58×10^{-2}	1.15×10^{-1}	0.625	<0.020
Benzene	29	<0.005 - <0.060	20	4.5	5.00×10^{-1}	1.33×10^{0}	0.005	<0.020
Bromodichloromethane	15	<0.005 - <0.620	0	ND	1.00×10^{1}	7.19×10^{-1}	0.005	<0.010
Bromoform	15	<0.010 - <1.20	0	ND	1.00×10^{1}	8.11×10^{1}	0.005	<0.010
Bromomethane	15	<0.016 - <0.620	0	ND	5.11×10^{0}	2.44×10^{1}	0.010	<0.020
2-Butanone	28	<0.010 - <20.0	13	0.212	1.83×10^{2}	7.58×10^{3}	0.100	<0.020
Carbon disulfide	25	<0.002 - <0.620	8	0.180	3.65×10^{2}	2.45×10^{1}	0.100	<0.010
Carbon tetrachloride	29	<0.005 - <0.620	2	0.005	5.00×10^{-1}	4.14×10^{-1}	0.005	<0.010
Chlorobenzene	27	<0.005 - <0.620	1	0.005	1.00×10^{1}	2.56×10^{2}	0.005	<0.010
2-Chloro-1,3-butadiene	10	<0.010 - <0.100	0	ND	NE	NE	0.005	<0.010
Chloroethane	15	<0.020 - <1.20	0	ND	7.30×10^{1}	4.99×10^{3}	0.010	<0.020
Chloroform	29	<0.002 - <0.040	18	1.4	1.00×10^{1}	4.37×10^{-1}	0.005	<0.010
Chloromethane	15	<0.020 - <1.20	0	ND	NE	NE	0.010	<0.010
3-Chloropropene	5	<0.032 - <1.20	0	ND	NE	NE	0.005	NA
Dibromochloromethane	15	<0.010 - <0.620	0	ND	1.00×10^{1}	7.62×10^{1}	0.005	<0.010
1,2-Dibromo-3-chloropropane	4	<0.032 - <4.20	0	ND	2.00×10^{-2}	4.57×10^{-1}	0.100	NA
1,2-Dibromoethane	5	<0.016 - <0.620	0	ND	5.00×10^{-3}	7.09×10^{-3}	0.005	NA

00209

TABLE A-1 (Continued)

SCREENING OF VOLATILE ORGANIC COMPOUNDS - SLUDGE SAMPLES
(1986 - 1992)
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP - Residential[a] (mg/kg)	Soil SAI - Residential[a] (mg/kg)	PQL[b] (mg/kg)	Background (mg/kg)
Dibromomethane	5	<0.032 - <1.20	0	ND	NE	NE	0.005	NA
trans-1,4-dichloro-2-butene	6	<0.010 - <1.20	0	ND	NE	NE	0.100	NA
Dichlorodifluoromethane	10	<0.010 - <0.100	0	ND	7.30×10^{2}	5.00×10^{1}	0.005	<0.010
1,1-Dichloroethane	16	<0.010 - <0.620	1	0.120	3.65×10^{2}	7.30×10^{3}	0.005	<0.010
1,1-Dichloroethene	26	<0.005 - <0.100	1	0.005	7.00×10^{-1}	7.15×10^{-1}	0.005	<0.010
1,2-Dichloroethane	29	<0.005 - <0.620	1	0.005	5.00×10^{-1}	4.17×10^{-1}	0.005	<0.010
trans-1,2-Dichloroethene	16	<0.010 - <0.620	1	0.009	1.00×10^{1}	2.65×10^{2}	0.005	<0.010
1,2-Dichloropropane	17	<0.005 - <0.620	1	0.005	5.00×10^{-1}	6.88×10^{-1}	0.005	<0.010
cis-1,3-Dichloropropene	15	<0.010 - <0.620	0	ND	NE	NE	0.005	<0.010
trans-1,3-Dichloropropene	15	<0.010 - <0.620	0	ND	NE	NE	0.005	<0.010
1,4-Dioxane	1	<0.020	0	ND	7.74×10^{-1}	1.55×10^{1}	ND	NA
Ethyl Benzene	16	<0.005 - <0.620	10	0.520	7.00×10^{1}	1.14×10^{4}	0.005	<0.010
Ethyl Cyanide (Propionitrile)	1	<0.020	0	ND	NE	NE	0.100	NA
Ethyl Methacrylate	17	<0.020 - <1.20	1	0.005	NE	NE	0.005	<0.020
2-Hexanone	15	<0.032 - <1.20	0	ND	NE	NE	0.050	<0.040
Iodomethane	16	<0.032 - <1.20	1	0.005	NE	NE	0.005	<0.040
Isobutyl alchohol	1	<0.020	0	ND	1.10×10^{3}	8.23×10^{4}	0.100	NA
Methacrylonitrile	1	<0.005	0	ND	NE	NE	0.100	NA
Methylene chloride	21	<0.010 - <1.200	9	0.053	5.00×10^{-1}	1.07×10^{1}	0.005	<0.010

TABLE A-1 (Continued)

SCREENING OF VOLATILE ORGANIC COMPOUNDS - SLUDGE SAMPLES
(1986 - 1992)
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP - Residential[a] (mg/kg)	Soil SAI - Residential[a] (mg/kg)	PQL[b] (mg/kg)	Background (mg/kg)
Methyl methacrylate	1	<0.010	0	ND	2.92×10^{2}	6.74×10^{2}	0.050	NA
4-Methyl-2-pentanone	15	<0.032 - <1.20	0	ND	1.83×10^{2}	1.37×10^{4}	0.050	<0.020
Pentachloroethane	4	<0.010 - <1.30	0	ND	NE	NE	0.010	NA
Pyridine	24	<0.010 - <5.00	2	0.010	3.65×10^{0}	2.74×10^{2}	NA	NA
Styrene	15	<0.010 - <0.620	0	ND	1.00×10^{1}	2.13×10^{1}	0.005	<0.010
1,1,1,2-Tetrachloroethane	14	<0.005 - <0.620	2	0.005	4.26×10^{-1}	8.00×10^{0}	0.005	NA
1,1,2,2-Tetrachloroethane	24	<0.005 - <0.620	2	0.010	4.26×10^{-1}	8.00×10^{0}	0.005	<0.010
Tetrachloroethene	28	<0.005 - <0.620	1	0.005	5.00×10^{-1}	7.93×10^{1}	0.005	<0.010
Toluene	25	<0.010 - <0.005	16	6.60	1.00×10^{2}	3.58×10^{3}	0.005	<0.010
1,1,1-Trichloroethane	24	<0.005 - <0.620	1	0.002	2.00×10^{1}	9.63×10^{3}	0.005	<0.010
1,1,2-Trichloroethane	23	<0.005 - <0.620	0	ND	5.00×10^{-1}	1.27×10^{1}	0.005	<0.010
Trichloroethene	26	<0.005 - <0.620	1	0.005	5.00×10^{-1}	2.40×10^{0}	0.005	<0.010
Trichlorofluoromethane	15	<0.016 - <0.620	0	ND	1.10×10^{3}	8.73×10^{0}	0.005	NA
1,2,3-Trichloropropane	5	<0.032 - <1.20	0	ND	2.19×10^{1}	1.65×10^{3}	0.005	NA
Vinyl acetate	15	<0.020 - <1.20	0	ND	3.65×10^{3}	2.74×10^{5}	0.050	<0.020
Vinyl chloride	29	<0.010 - <1.20	4	0.020	2.00×10^{-1}	1.99×10^{-2}	0.010	<0.020
Xylenes	15	<0.005 - <0.620	7	3.76	1.00×10^{3}	5.47×10^{3}	0.005	<0.020

Notes:

TNRCC Standards do not exist for sludges.
Samples reflected in this table were collected from barges, Ponds 4, B6, 22, 30.
Background value obtained from sample BG-001 collected 2/11/92.

00211

TABLE A-1 (Continued)

SCREENING OF VOLATILE ORGANIC COMPOUNDS - SLUDGE SAMPLES
(1986 - 1992)
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

NA = Not Available/Not Analyzed.
ND = Not detected above quantitation limit.
NE = Not established.
(a) = TNRCC Risk Reduction Rules Media Specific Concentrations for Residential Soils.
GWP = Ground Water Protection Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
SAI = Soil/Air and Ingestion Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
▒ = Shaded Areas Indicate Samples Exceeding TNRCC MSCs.
(b) = Practical Quantitation Limits obtained from SW846: 8240 and 8030 (Acrolein and Acrylonitrile).

Tables\VolaOrg

February 21, 1994

TABLE A-2
SCREENING OF SEMI-VOLATILE ORGANIC COMPOUNDS - SLUDGE SAMPLES
(1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP-Residential[a] mg/kg	Soil SAI - Residential[a] mg/kg	PQL[b] (mg/kg)	Back-ground (mg/kg)
Acenaphthene	14	<0.010 - <1.30	3	0.470	2.19×10^{2}	1.34×10^{4}	0.660	<0.050
Acenaphthylene	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Acetophenone	14	<0.010 - <1.30	0	ND	3.65×10^{2}	2.26×10^{4}	NA	<0.050
2-Acetylaminofluorene	4	<0.010 - <1.30	0	ND	NE	NE	NA	NA
4-Aminobiphenyl	13	<0.050 - <1.30	0	ND	NE	NE	NA	<0.050
Aniline	15	<0.010 - <1.30	3	0.150	1.49×10^{0}	4.18×10^{-2}	NA	<0.050
Aramite	4	<0.020 - <2.70	0	ND	NE	NE	NA	NA
Anthracene	14	<0.010 - <1.30	5	3.64	1.10×10^{3}	5.91×10^{4}	0.660	<0.050
Benzo(a)anthracene	14	<0.010 - <1.30	1	0.207	NE	NE	0.660	<0.050
Benzo(b)fluoranthene	14	<0.010 - <1.30	1	0.374	NE	NE	0.660	<0.050
Benzo(k)fluoranthene	14	<0.010 - <1.30	0	0.376	NE	NE	0.660	<0.050
Benzo(g,h,i)perylene	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Benzo(a)pyrene	14	<0.010 - <1.30	1	0.126	NE	NE	0.660	<0.050
Benzyl alcohol	14	<1.050 - <1.30	1	0.004	NE	NE	1.300	<0.050
Bis(2-chloroethoxy)methane	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Bis(2-chloroethyl)ether	24	<0.020 - <2.70	2	0.020	7.74×10^{-3}	2.20×10^{-1}	0.660	<0.050
Bis(2-chloroisopropyl)ether	15	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Bis(2-ethylhexyl)phthalate	14	<0.010 - <1.30	1	0.046	6.08×10^{-1}	4.57×10^{1}	0.660	<0.050
4-Bromophenyl phenyl ether	13	<1.050 - <1.30	ND	ND	NE	NE	0.660	<0.050
Butyl benzyl phthalate	14	<0.010 - <1.30	ND	ND	NE	NE	0.660	<0.050
2-sec-Butyl-4,6-dinitrophenol	0				3.65×10^{0}	2.74×10^{2}	NA	NA

TABLE A-2 (Continued)

SCREENING OF SEMI-VOLATILE ORGANIC COMPOUNDS FOR SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP-Residential[a] mg/kg	Soil SAI - Residential[a] mg/kg	PQL[b] (mg/kg)	Back-ground (mg/kg)
4-Chloroaniline	14	<0.010 - <1.30	0	ND	NE	NE	1.300	<0.050
Chlorobenzilate	4	<0.010 - <1.30	0	ND	7.30×10^1	5.49×10^3	NA	NA
p-Chloro-m-cresol	14	<0.010 - <5.00	0	ND	NE	NE	1.300	<0.200
2-Chloronaphthalene	13	<0.010 - <1.30	0	ND	2.92×10^2	2.20×10^4	0.660	<0.050
2-Chlorophenol	14	<0.010 - <5.00	0	ND	1.83×10^1	1.37×10^3	0.660	<0.200
4-Chlorophenyl phenyl ether	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Chrysene	14	<0.010 - <1.30	1	0.213	NE	NE	0.660	<0.050
m-Cresol	23	<0.610 - <20.0	11	1.20	1.83×10^2	3.91×10^3	0.660	<0.200
o-Cresol	10	<0.200 - <5.00	0	ND	1.83×10^2	3.91×10^3	NA	<0.200
p-Cresol	22	<0.610 - <20.0	9	1.20	1.83×10^2	3.91×10^3	0.660	<0.200
Diallate	3	<1.00 - <1.30	0	ND	NE	NE	NA	NA
Di-n-butylphthalate	14	<0.010 - <1.30	1	0.043	3.65×10^2	2.74×10^4	NA	<0.050
Dibenz(a,h)anthracene	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Dibenzofuran	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
1,2-Dichlorobenzene	23	<0.010 - <1.30	2	0.010	6.00×10^1	6.69×10^3	0.660	<0.050
1,3-Dichlorobenzene	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
1,4-Dichlorobenzene	27	<0.010 - <1.30	2	0.010	7.50×10^0	8.64×10^1	0.660	<0.050
3,3'-Dichlorobenzidine	14	<0.010 - <1.30	0	ND	NE	NE	1.300	<0.050
2,4-Dichlorophenol	14	<1.00 - <5.00	1	0.006	1.10×10^1	8.23×10^2	0.660	<0.200
2,6-Dichlorophenol	14	<0.010 - <2.70	0	ND	NE	NE	NA	<0.050
Diethyl phthalate	14	<0.010 - <1.30	0	ND	2.92×10^3	2.20×10^5	0.660	<0.050
O,O-Diethyl-O-2-pyrazinyl phosphorothioate	4	<0.010 - <1.30	0	ND	NA	NA	NA	NA
Dimethoate	3	<1.00 - <1.30	0	ND	7.30×10^1	5.49×10^3	NA	NA
Dimethylaminoazobenzene	14	<0.010 - <4.00	0	ND	NE	NE	NA	<0.160

TABLE A-2 (Continued)

SCREENING OF SEMI-VOLATILE ORGANIC COMPOUNDS FOR SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP-Residential[a] mg/kg	Soil SAI - Residential[a] mg/kg	PQL[b] (mg/kg)	Back-ground (mg/kg)
7,12-Dimethylbenz(a)anthracene	14	<0.010 - <4.00	0	ND	NE	NE	NA	<0.160
3,3'-Dimethylbenzidine	4	<0.020 - <2.70	0	ND	NE	NE	NA	NA
a,a-Dimethylphenethylamine	14	<0.020 - <4.00	0	ND	NE	NE	NA	<0.160
2,4-Dimethylphenol	14	<0.010 - <5.00	4	0.250	7.30×10^{1}	5.49×10^{3}	0.660	<0.200
Dimethyl phthalate	14	<3.00 - <4.00	0	ND	NE	NE	0.660	<0.050
m-Dinitrobenzene	4	<0.020 - <2.70	0	ND	3.65×10^{-1}	2.74×10^{1}	NA	NA
4,6-Dinitro-o-cresol	13	<0.400 - <10.0	0	ND	NE	NE	3.300	<0.400
2,4-Dinitrophenol	14	<0.010 - <10.0	0	ND	7.30×10^{0}	5.49×10^{2}	3/300	<0.400
2,4-Dinitrotoluene	25	<0.010 - <1.30	1	0.010	NE	NE	0.660	<0.050
2,6-Dinitrotoluene	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Di-n-octyl phthalate	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Diphenylamine	13	<0.050 - <4.00	0	ND	9.13×10^{1}	2.56×10^{2}	NA	<0.050
Disulfoton	0				1.46×10^{-1}	1.10×10^{1}	NA	NA
Ethyl methanesulfonate	14	<0.010 - <4.00	0	ND	NE	NE	NA	<0.160
Famphur	0				NE	NE	NA	NA
Fluoranthene	14	<0.010 - <1.30	1	0.630	1.46×10^{2}	1.10×10^{4}	0.660	<0.050
Fluorene	14	<0.010 - <1.30	3	1.10	1.46×10^{2}	9.60×10^{3}	0.660	<0.050
Hexachlorobenzene	26	<0.010 - <1.30	0	ND	1.00×10^{-1}	4.00×10^{-1}	0.660	<0.050
Hexachlorocyclopentadiene	15	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Hexachloroethane	27	<0.010 - <1.30	2	0.010	6.08×10^{0}	4.57×10^{2}	0.660	<0.050
Hexachlorobutadiene	26	<0.010 - <1.30	1	0.010	1.09×10^{0}	8.21×10^{1}	0.660	<0.050
Hexachlorophene	0				NE	NE	NA	NA
Hexachloroprene	4	<0.010 - <1.30	0	ND	NE	NE	NA	NA
Indeno(1,2,3-cd)pyrene	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050

TABLE A-2 (Continued)

SCREENING OF SEMI-VOLATILE ORGANIC COMPOUNDS FOR SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP-Residential[a] mg/kg	Soil SAI - Residential[a] mg/kg	PQL[b] (mg/kg)	Back-ground (mg/kg)
Isodrin	0				NE	NE	NA	NA
Isophorone	14	<0.010 - <1.30	0	ND	NE	NE	0.660	<0.050
Isosafrole	5	<0.020 - <2.50	0	ND	NE	NE	NA	NA
Kepone	0				NE	NE	NA	NA
Methapyrilene	4	<0.020 - <2.70	0	ND	NE	NE	NA	NA
3-Methylcholanthrene	14	<0.010 - <4.00	0	ND	NE	NE	NA	<0.160
Methyl methanesulfonate	14	<0.010 - <4.00	0	ND	NE	NE	NA	<0.160
2-Methylnaphthalene	14	<0.010 - <1.30	9	10.790	NE	NE	0.660	<0.050
Methyl Parathion	0				NE	NE	NA	NA
Naphthalene	14	<0.050	6	3.47	1.46×10^{2}	4.91×10^{3}	0.660	<0.050
1,4-Naphthoquinone	4	<0.020 - <2.70	0	ND	NE	NE	NA	NA
1-Naphthylamine	14	<0.020 - <2.70	0	ND	NE	NE	NA	<0.050
2-Naphthylamine	14	<0.020 - <2.70	0	ND	NE	NE	NA	<0.050
2-Nitroaniline	14	<0.010 - <1.30	0	ND	NE	NE	3.300	NA
3-Nitroaniline	14	<0.020 - <2.70	0	ND	NE	NE	3.300	NA
4-Nitroaniline	4	<0.020 - <2.70	0	ND	NE	NE	NA	NA
Nitrobenzene	28	<0.010 - <1.30	2	0.010	1.83×10^{0}	6.48×10^{1}	0.660	<0.050
2-Nitrophenol	14	<0.010 - <5.00	0	ND	NE	NE	0.660	<0.200
4-Nitrophenol	17	<1.00 - <5.00	2	0.010	NE	NE	3.300	<0.200
4-Nitroquinoline-1-oxide	0				NE	NE	NA	NA
n-Nitrosodi-n-butylamine	14	<0.010 - <1.30	0	ND	NE	NE	NA	<0.050
n-Nitrosodiethylamine	4	<0.010 - <1.30	0	ND	5.68×10^{-5}	4.27×10^{-3}	NA	NA
n-Nitrosodimethylamine	13	<0.010 - <1.30	0	ND	1.67×10^{-4}	1.26×10^{-2}	NA	NA
n-Nitrosodiphenylamine	13	<0.050 - <1.30	0	ND	NE	NE	0.660	<0.050

SCREENING OF SEMI-VOLATILE ORGANIC COMPOUNDS FOR SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP-Residential[a] mg/kg	Soil SAI - Residential[a] mg/kg	PQL[b] (mg/kg)	Back-ground (mg/kg)
n-Nitrosodi-n-propylamine	14	<0.010 - <1.30	0	ND	1.22×10^{-3}	9.15×10^{-2}	0.660	<0.050
n-Nitrosomethylethylamine	0	<0.010 - <1.30	4	ND	3.87×10^{-4}	2.91×10^{-2}	NA	NA
n-Nitrosomorpholine	4	<0.010 - <1.30	0	ND	NE	NE	NA	NA
n-Nitrosopiperidine	14	<0.010 - <1.30	0	ND	NE	NE	NA	<0.050
n-Nitrosopyrrolidine	5	<0.010 - <1.30	0	ND	4.06×10^{-3}	3.05×10^{-1}	NA	NA
5-Nitro-o-toluidine	4	<0.020 - <2.70	0	ND	NE	NE	NA	NA
Parathion	0			NE	NE	NE	NA	NA
Phenacetin	16	<0.050 - <4.00	1	0.900	NE	NE	NA	<0.160
Pentachlorobenzene	4	<0.010 - <1.30	0	ND	NE	NE	NA	NA
Pentachloronitrobenzene	14	<0.010 - <4.00	0	ND	3.28×10^{-1}	2.46×10^{1}	NA	<0.160
Pentachlorophenol	27	<0.020 - <5.00	1	0.020	1.00×10^{-1}	5.34×10^{0}	3.300	<0.200
Phenanthrene	14	<0.010 - <0.300	8	3.09	NE	NE	0.660	<0.050
Phenol	23	<0.016 - <0.500	11	12.0	2.19×10^{3}	1.65×10^{5}	0.660	<0.200
2-Picoline	14	<0.010 - <4.00	0	ND	NE	NE	NA	<0.160
p-Phenylenediamine	4	<0.010 - <1.30	0	ND	NE	NE	NA	NA
Phorate	0				NE	NE	NA	NA
Pronamide	14	<0.010 - <13.0	0	ND	2.74×10^{2}	2.06×10^{4}	NA	<0.160
Pyrene	14	<0.010 - <1.30	4	1.49	1.10×10^{2}	8.20×10^{3}	0.660	<0.050
Safrole	4	<0.010 - <1.30	0	ND	NE	NE	NA	NA
1,2,4,5-Tetrachlorobenzene	4	<0.010 - <1.30	0	ND	1.10×10^{0}	8.23×10^{1}	NA	NA
2,3,4,6-Tetrachlorobenzene	0				1.10×10^{2}	8.23×10^{3}	NA	NA
Tetraethyldithiopyrophosphate	0				1.83×10^{0}	1.37×10^{2}	NA	NA
o-Toluidine	4		4	0.520	NE	NE	NA	NA
1,2,4-Trichlorobenzene	14	<0.010 - <1.30	0	ND	7.00×10^{0}	6.78×10^{2}	0.660	NA

TABLE A-2 (Continued)

SCREENING OF SEMI-VOLATILE ORGANIC COMPOUNDS FOR SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	# Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP-Residential[a] mg/kg	Soil SAI - Residential[a] mg/kg	PQL[b] (mg/kg)	Back-ground (mg/kg)
2,3,4,6-Tetrachlorophenol	23	<0.020 - <2.70	1	0.020	1.10×10^{2}	8.28×10^{3}	NA	NA
2,4,5-Trichlorophenol	27	<0.020 - <400.0	2	0.020	3.65×10^{2}	8.08×10^{3}	0.660	<0.200
O,O,O-Triethylphosphorothioate	0				NE	NE	NA	NA
sym-Trinitrobenzene	0				1.83×10^{-1}	1.37×10^{1}	NA	NA
2,4,6-Trichlorophenol	25	<0.020 - <5.00	2	0.003	7.74×10^{-1}	5.82×10^{1}	0.660	<0.200

Notes:

TNRCC Standards do not exist for sludges.
Samples reflected in this table were collected from barges, Ponds 4, B6, 22, 30.
Background value obtained from sample BG-001 collected 2/11/92.
* di-n-butyl phthalate also detected in method blank
NA = Not available; not analyzed.
ND = Not detected above detection limit.
NE = Not established.
(a) = TNRCC Risk Reduction Rules Media Specific Concentrations for Residential Soils.
GWP = Ground Water Protection Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
SAI = Soil/Air and Ingestion Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
▒ = Shaded Areas Indicate Samples Exceeding TNRCC MSCs.
(b) = Practical Quantitation Limits obtained from SW 846: 8270.

TABLE A-3

SCREENING OF PESTICIDE/HERBICIDE/PCBs DATA - SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	No. of Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP - Residential [a] (mg/kg)	Soil SAI - Residential[a] (mg/kg)	Background (mg/kg)	PQL[b] (mg/kg)
Chlordane	23	<0.0002 - <0.100	2	0.0007	2.00×10^{-1}	4.93×10^{-1}	<0.005	0.0047
Endrin	28	<0.00005 - <0.080	0	ND	2.00×10^{-1}	8.23×10^{-1}	<0.0005	0.0020
Endrin Aldehyde	10	<0.00005 - <0.080	0	ND	NE	NE	<0.0005	0.0077
Methoxychlor	30	<0.00003 - <10.0	0	ND	4.00×10^{0}	1.37×10^{-3}	<0.0005	0.059
Toxaphene	18	<0.001 - <0.800	0	ND	3.00×10^{-1}	5.82×10^{-1}	<0.020	0.080
Heptachlor	5	<0.00005 - <0.040	0	ND	4.00×10^{-2}	1.42×10^{-1}	<0.0005	0.0010
Heptachlor epoxide	10	<0.00005 - <0.0035	0	ND	2.00×10^{-2}	7.04×10^{-2}	<0.0005	0.0028
Aldrin	10	<0.00005 - <0.040	0	ND	5.01×10^{-4}	3.77×10^{-2}	<0.0005	0.0013
A-BHC	10	<0.0005 - <0.040	5	0.00300	1.35×10^{-3}	1.02×10^{-1}	0.00350	0.0010
B-BHC	10	<0.0005 - <0.040	6	0.0129	4.73×10^{-2}	3.56×10^{0}	0.0012	0.0020
D-BHC	10	<0.0005 - <0.040	0	ND	NE	NE	<0.0005	0.0030
G-BHC (Lindane)	10	<0.00003 - <0.40	1	0.040	2.00×10^{-2}	8.23×10^{1}	<0.0005	0.0013
4,4' - DDD	10	<0.0005 - <0.080	0	ND	3.55×10^{-2}	2.67×10^{0}	<0.0005	0.0037
4,4' - DDE	10	<0.0005 - <0.080	0	ND	2.50×10^{-2}	1.88×10^{0}	<0.0005	0.0013
4,4' - DDT	10	<0.0005 - <0.080	0	ND	2.50×10^{-2}	1.88×10^{0}	<0.0005	0.0040
Dieldrin	10	<0.0005 - <0.080	0	ND	5.32×10^{-4}	4.00×10^{-2}	<0.0005	0.0007
Endosulfan I	10	<0.005 - <0.040	0	ND	1.83×10^{-1}	1.37×10^{1}	<0.0005	0.0047
Endosulfan II	10	<0.0005 - <0.080	0	ND	NE	NE	<0.0005	0.0013
Endosulfan Sulfate	10	<0.0005 - <0.010	0	ND	NE	NE	<0.0005	0.022
PCB-1016	10	<0.020 - <0.165	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	NE
PCB-1221	10	<0.020 - <0.165	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	NE

TABLE A-3 (Continued)

SCREENING OF PESTICIDE/HERBICIDE/PCBs DATA - SLUDGE SAMPLES (1986 - 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Compound	No. of Samples	Range of Practical Quantitation Limits (mg/kg)	# Samples Detecting Compound	Max. Detected (mg/kg)	Soil GWP - Residential [a] (mg/kg)	Soil SAI - Residential[a] (mg/kg)	Background (mg/kg)	PQL[b] (mg/kg)
PCB-1232	10	<0.020 - <0.335	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	NE
PCB-1242	10	<0.020 - <0.165	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	0.022
PCB-1248	10	<0.020 - <0.165	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	NE
PCB-1254	10	<0.020 - <0.165	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	NE
PCB-1260	10	<0.020 - <0.165	0	ND	5.00×10^{-2}	8.32×10^{-2}	<0.020	NE
2,4-D	15	<0.0001 - <1.0	0	ND	7.00×10^{0}	2.74×10^{3}	NA	0.24
2,4,5-TP	16	<0.00001 - <0.100	0	ND	5.00×10^{0}	2.20×10^{3}	NA	0.034
2,4,5-T	6	<0.00001 - <0.150	0	ND	3.65×10^{1}	2.74×10^{3}	NA	0.040

Notes:

TNRCC Standards do not exist for sludges.
Samples reflected in this table were collected from barges, Ponds 4, B6, 22, 30.
Background value obtained from sample BG-001 collected 2/11/92.
ND = Not detected above quantitation limit.
NA = Not Available/Not Analyzed
NE = Not established.
(a) = TNRCC Risk Reduction Rules Media Specific Concentration for Residential Soils.
GWP = Ground Water Protection Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
SAI = Soil/Air and Ingestion Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
= Shaded Areas Indicate Samples Exceeding TNRCC MSCs.
(b) = Practical Quantitation Limits obtained from SW 846: 8080 and 8150 (2,4-D, 2,4,5-TP, 2,4,5-T).

TABLE A-4

SCREENING OF METALS DATA - SLUDGE SAMPLES
(1986 - 1992)
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Metal	No. of Samples	Range of Practical Quantitation Limits	# Samples Detecting Metals	Max. Detected (mg/kg)	Soil GWP - Residential [a] (mg/kg)	Soil SAI - Residential [a] (mg/kg)	Background (mg/kg)	PQL[b] (mg/kg)
Antimony	10	<0.050	0	ND	6.00×10^{-1}	1.10×10^{2}	<0.50	6.0
Arsenic	10	<0.050	9	6.98	5.00×10^{0}	3.66×10^{-1}	4.38	1.0
Beryllium	10	<0.050	0	ND	4.00×10^{-1}	1.49×10^{-1}	<0.50	0.5
Cadmium	10	<0.050	0	ND	5.00×10^{-1}	1.37×10^{2}	<0.50	0.5
Chromium	10	None	10	30.5	1.00×10^{1}	3.91×10^{2}	5.80	1.0
Copper	10	None	10	15.0	NE	NE	3.62	2.5
Lead	10	None	10	13.40	1.50×10^{0}	5.00×10^{2}	12.50	0.3
Mercury	10	<0.050	0	ND	2.00×10^{-1}	8.23×10^{1}	<0.050	0.02
Nickel	10	None	10	34.5	1.00×10^{1}	1.56×10^{3}	3.98	4.0
Selenium	10	<0.5	0	ND	5.00×10^{0}	1.37×10^{3}	<0.5	0.5
Silver	10	<0.5	0	ND	1.83×10^{1}	1.37×10^{3}	<0.5	1.0
Thallium	10	<0.5	0	ND	NE	NE	<0.5	1.0
Zinc	10	None	10	42.4	NE	NE	13.8	2.0

00221

Notes:

TNRCC Standards do not exist for sludges.
Samples reflected in this table were collected from barges, Ponds 4, B6, 22, 30.
Background value obtained from sample BG-001 collected 2/11/92.
ND = Not detected above quantitation limit.
NE = Not Established.
(a) = TNRCC Risk Reduction Rules Media Specific Concentrations for Residential Soils.
GWP = Ground Water Protection Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
SAI = Soil/Air and Ingestion Standard for Residential use as established by the Texas Natural Resource Conservation Commission Risk Reduction Rules.
= Shaded Areas Indicate Samples Exceeding TNRCC MSCs.
(b) = Practical Quantitation Limits, obtained by converting Contract Required Detection Limits for water (using 100 ml) to detection limits for soil (using 1 g).

TABLE A-5

SCREENING OF DIOXIN AND FURAN DATA - SLUDGE SAMPLES
(February, 1992)

HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Parameter	Number of Samples	Number of Samples Detecting Parameter	Maximum Detected (ppb)
2378-TCDD	13	7	0.30
12378-PeCDD	13	0	ND
123478-PeCDD	13	0	ND
123678-HxCDD	13	0	ND
123789-HxCDD	13	0	ND
1234678-HpCDD	13	2	0.02
OCDD	13	12	1.4
2378-TCDF	13	12	0.75
12378-PeCDF	13	0	EMPC
23478-PeCDF	13	0	EMPC
123478-HxCDF	13	1	0.02
123678-HxCDF	13	1	0.02
234678-HxCDF	13	0	ND
123789-HxCDF	13	0	ND
1234678-HpCDF	13	0	ND
1234789-HpCDF	13	0	ND
OCDF	13	0	ND

00222

TABLE A-5 (Continued)

SCREENING OF DIOXIN AND FURAN DATA - SLUDGE SAMPLES
(February, 1992)
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

Parameter	Number of Samples	Number of Samples Detecting Parameter	Maximum Detected (ppb)
Total TCDD	13	7	0.3
Total PECDD	13	0	EMPC
Total HxCDD	13	0	EMPC
Total HpCDD	13	3	0.09
Total TCDF	13	12	1.5
Total PECDF	13	2	0.10
Total HxCDF	13	1	0.02
Total HpCDF	13	0	EMPC

00223

Notes:

TNRCC Standards do not exist for sludges.
TNRCC Media specific concentrations or background not available for dioxins and furans.
Samples reflected in this table were collected from barges, Ponds 4, B6, 22, 30.
ND = Not detected above quantitation limit.
EMPC = Estimated Maximum Possible Concentration
Analyte may be present but chemical interference prevented quantification.
PPB = Parts Per Billion

TABLE A-6

RISK ASSESSMENT CRITERIA 1

PARAMETERS WITH QUANTITATION LIMITS EXCEEDING METHOD PQL AND PARAMETERS WITH POSITIVE DETECTION IN ONE OR MORE SAMPLES WHICH EXCEED METHOD PQL[a]

Volatile Organics	Semivolatile Organics	Dioxins/Furans
Acetone	Aniline	2378-TCDD
Acrylonitrile	Anthracene	1234678-HpCDD
Benzene	Fluorene	OCDD
2-Butanone	2-Methylnaphthalene	2378-TCDF
Carbon disulfide	2-Methylphenol (m-Cresol)	123478-HxCDF
Chloroform	4-Methylphenol (p-Cresol)	123678-HxCDF
Chloromethane	Naphthalene	Total TCDD
3-Chloropropene	Phenacetin	Total HpCDD
1,2-Dibromoethane	Phenanthrene	Total TCDF
Dibromomethane	Phenol	Total PECDF
1,1-Dichloroethane	Pyrene	Total HxCDF
Ethyl benzene	o-Toluidine	
Methylene chloride		
Pyridine		
Toluene		
Trichlorofluoromethane		
1,2,3-Trichloropropane		
Xylenes		

(a) g-BHC, arsenic chromium, copper, lead, nickel and zinc were eliminated from concern based on detection below typical background levels.

TABLE A-7
ASSIGNMENT OF MEDIA SPECIFIC CONCENTRATIONS
AND EXTRAPOLATED PQLS

Compound	Structurally Related Compound	Soil GWP-Residential	Soil SAI-Residential	Extrapolated PQL [a] (mg/kg)
Aniline				0.660
Chloromethane	Bromomethane	5.11×10^{0}	2.44×10^{1}	
3-Chloropropene	1,1-Dichloroethene	7.00×10^{-1}	7.15×10^{-1}	
1,2-Dibromoethane	1,2-Dichloroethane	5.00×10^{-1}	4.17×10^{-1}	
Dibromomethane	Methylene chloride	5.00×10^{-1}	1.07×10^{1}	
2-Methylnaphthalene	Naphthalene	1.46×10^{2}	4.91×10^{3}	
Phenacetin	Pronamide	2.74×10^{2}	2.06×10^{4}	1.300
Phenanthrene	Anthracene	1.10×10^{3}	5.91×10^{4}	
o-Toluidine	Toluene	1.00×10^{2}	3.58×10^{3}	0.660

(a) = Extrapolated from aqueous PQLS in SW 846: 8270 by multiplying by factor of 66 for low level soils with GPC cleanup.

TABLE A-8

COMPARISON OF USGS SOIL BACKGROUND LEVELS FOR METALS TO CONCENTRATIONS AT HALL'S BAYOU RANCH

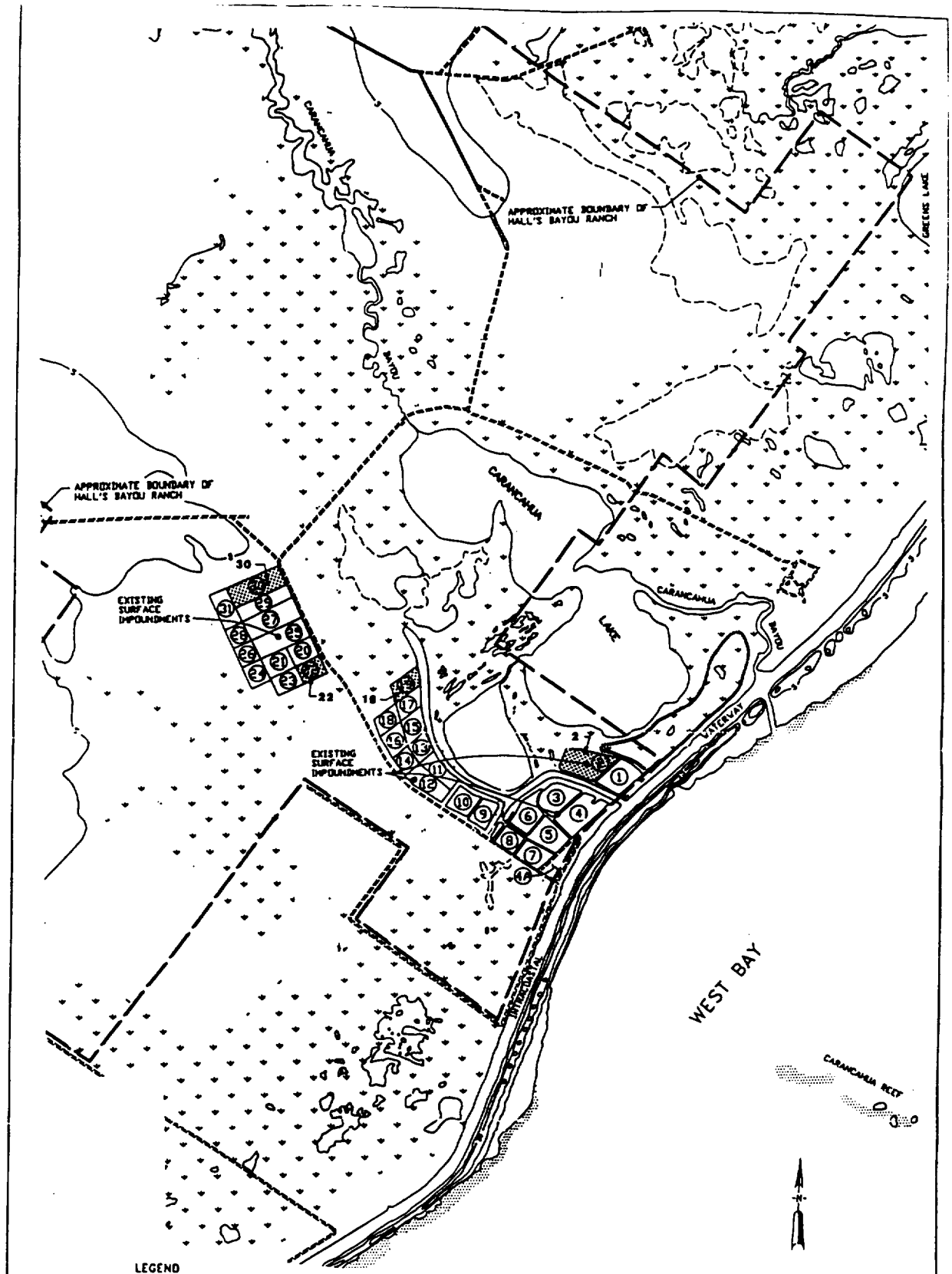
Paramater	USGS Range (mg/kg)	USGS Mean (mg/kg)	Hall's Bayou (mg/kg)	Essential Element
Arsenic	0.1 - 97	5.5	6.98	
Chromium	3 - 2000	41	30.5	
Copper	2 - 300	21	15	Yes
Lead	10 - 700	17	13.40	
Nickel	0.5 -700	19	34.5	Yes
Zinc		90	42.4	Yes

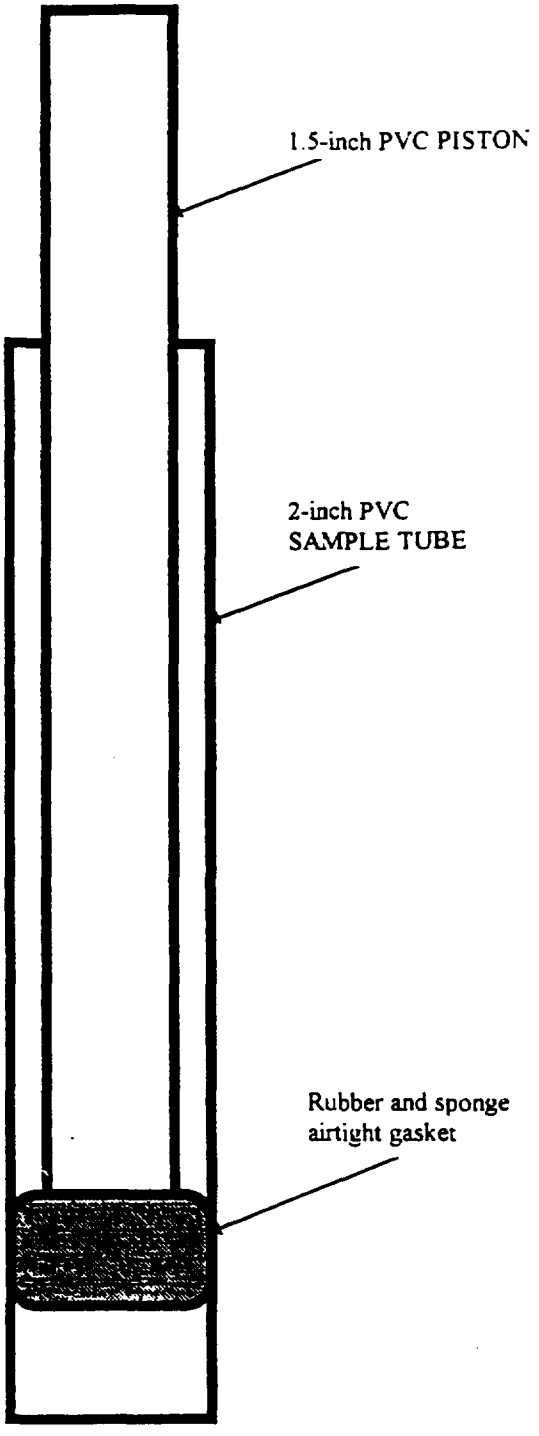
TABLE A-9

RISK ASSESSMENT CRITERION 2
PARAMETERS WHICH EXCEED RISK CRITERIA 1 AND
ONE OR MORE SAMPLES EXCEEDING EITHER HEALTH-BASED CRITERIA
(SOIL SAI-RESIDENTIAL) OR GROUNDWATER PROTECTION CRITERIA (SOIL GWP-RESIDENTIAL)[a]

Volatile Organics	Semivolatile Organics
Benzene Chloroform	None

(a) g-BHC, arsenic, chromium, copper, nickel, and zinc were eliminated from concern based on detection below typical background levels.


APPROXIMATE BOUNDARY OF HALL'S BAYOU RANCH
APPROXIMATE BOUNDARY OF HALL'S BAYOU RANCH
EXISTING SURFACE IMPOUNDMENTS
EXISTING SURFACE IMPOUNDMENTS
CARANCAHUA
CARANCAHUA
CARANCAHUA
LAKE
BAYOU
BAYOU
GREENS LAKE
INTRACOASTAL WATERWAY
WEST BAY
CARANCAHUA REEF
N
LEGEND
IMPOUNDMENT NUMBER
MARSHLANDS
PONDS TO BE SAMPLED
0 1000 2000
SCALE: 1" = 2000'
CONTOUR INTERVAL: 5 FEET
2/23/94
FIGURE 1
SAMPLE SITE LOCATIONS
McGINNES INDUSTRIAL MAINTENANCE CORPORATION



00228

2/23/94

FIGURE 2
PVC–PISTON SLUDGE SAMPLER

McGINNES INDUSTRIAL
MAINTENANCE CORPORATION

MCFIG1.DWG/5

APPENDIX C

Sample Designation Group MFHL82

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 2-6-1998

Subject: **Contract Laboratory Program Data Review**

From: M. Humphrey 2/6/98
Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC

To: B. Kirchner ,6SF-RA

Site: MCGINNES INDUSTRIAL

Case#: 25919

SDG#: MFHL82

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

( ) Acceptable : No problems with data package.

(X) Provisional: Data is acceptable for regional use.
Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. ElFeky, Region 6 Data Coordinator
Files (2)

00001

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: February 5, 1998

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom Chiang, ESAT Team Manager, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-8118A, ESAT File No. I2167
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case #25919
SDG #MFHL82
Site MCGINNES INDUSTRIAL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

A. Hard copy and CCS reviews detected the following contractually noncompliant item. The determination date for the interelement correction factors (IEC) preceded the anlaysis dates by more than 12 calender months (ILM04.0, Exhibit B, B-36, O and Exhibit E, E-27, #11). The results were not technically affected because the analysis dates were only a few days outside the 12 month limit.

B. CCS review did not detect the following contractually noncompliant item detected by hard copy review. The laboratory did not use the least dilution necessary to bring some analytes within the valid analytical range, which resulted in diluted concentrations below the CRDL's (ILM04.0, Exhibit D, D-1). The sample results were not technically affected because the diluted concentrations were at least 25X greater than the IDL's.

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 264 results were reviewed for this data package. The package is technically provisional because of the following problems.

A. The reviewer qualified 29 percent of the results because of technical problems.

00002

MEMORANDUM, continued

Attached is the data review summary for Case #25919
SDG #MFHL82
Site MCGINNES INDUSTRIAL

B. Six cyanide results were unusable because the laboratory reported a cyanide matrix spike recovery below 30 percent.

C. The lead, selenium, and cyanide matrix spike recoveries were below the QC limits.

D. Technical holding time criteria were exceeded for the cyanide samples.

E. Seven lead analyses had negative instrument readings greater than 2X the CRDL.

F. One arsenic analysis had inconsistent instrument readings.

G. One sample was not preserved for the metals or cyanide analyses.

III. OTHER AREAS OF CONCERN:

A. The samples were in transit for up to nine days, and the coolers arrived at slightly elevated temperatures (6.3°C and 9.0°C). In the reviewer's opinion, the sample results were not affected by the elevated temperatures. However, the excessive transit time contributed to the cyanide sample analyses exceeding the technical holding time limit by up to two days.

B. The sampler failed to preserve sample MFH-L82 for the metals and cyanide analyses causing the qualification of results for this sample.

C. The laboratory stated Airbill 1343375 was submitted instead of Airbill 2423944935, which was recorded on Traffic Report 368265.

00003

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25919 SITE MCGINNES INDUSTRIAL
LABORATORY SENTIN NO. OF SAMPLES 11
CONTRACT # 68-D5-0167 MATRIX water
SDG # MFHL82 REVIEWER (IF NOT ESD) ESAT
SOW# ILM04.0 REVIEWER'S NAME Linda Hoffman
ACCT # 8FAXJN25 SF # FAXUZZ COMPLETION DATE February 5, 1998

SAMPLE NO.: MFH-L76, MFH-L82, MFH-L83, MFH-L84, MFH-L85, MFH-L86, MFH-L87, MFH-L88, MFH-L89, MFH-L90, MFH-L93

DATA ASSESSMENT SUMMARY

	ICP	HG	CYANIDE
1. HOLDING TIMES	M	M	M
2. CALIBRATIONS	M	O	O
3. BLANKS	O	O	O
4. MATRIX SPIKES	M	O	M
5. DUPLICATE ANALYSIS	M	O	O
6. ICP QC	M		
7. FAA QC			
8. LCS	O	O	O
9. SAMPLE VERIFICATION	O	O	O
10. OTHER QC	M	O	O
11. OVERALL ASSESSMENT	M	M	M

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
N/A = Not applicable.

ACTION ITEMS: The laboratory over-diluted samples for three magnesium and four potassium analyses.

AREAS OF CONCERN: The IEC determination date exceeded the analysis date by more than 12 calender months. The matrix spike recoveries for aluminum, lead, selenium, and cyanide were below 75%. The differences for aluminum and iron exceeded 20% for laboratory duplicates and 35% for field duplicates. The aluminum, magnesium, and potassium serial dilution percent differences were greater than 10%. One arsenic analysis had a coefficient of variation greater than 20%. Seven lead analyses had high negative readings. The nickel CRDL standard recoveries were greater than 150%. The technical holding time was exceeded for cyanide samples. One sample was not preserved.

NOTABLE PERFORMANCE: The laboratory submitted the package to the Region three days early.

00004

Case 25919 SDG MFHL82 Site MCGINNES INDUSTRIAL Lab SENTIN

COMMENTS: The package consisted of data for 11 water samples for total metals and cyanide analyses by ILM04.0. The sampler designated samples MFH-L85 and MFH-L86 as field duplicates, samples MFH-L76, MFH-L83, MFH-L84, and MFH-L93 as rinsate samples, and sample MFH-L90 as the QC sample. The laboratory met the 35-day turnaround time requirement but was contractually noncompliant for the following items.

- The samples were not analyzed within 12 months of IEC determination.
- The laboratory diluted some calcium, magnesium, potassium, and sodium samples because the linear ranges were exceeded. Dilution of three magnesium and four potassium samples resulted in diluted analyte concentrations below the CRDL's.

Eighteen percent of the reported results were above the CRDL's. Most samples contained very high concentrations of sodium (up to 14,200,000 μg/L). The laboratory reported an incorrect potassium result for sample MFH-L85, so the reviewer reported the correct result on the Data Summary Table.

Six cyanide results were unusable because the laboratory reported a cyanide matrix spike recovery that was less than 30 percent. The data package is technically provisional because of problems with holding times, sample preservation, matrix spike recoveries, laboratory and field duplicate differences, serial dilution differences, inconsistent and negative ICP readings, and poor instrument performance near the CRDL. The technical usability of all reported results is indicated in the Data Summary Table.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is included as part of this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Provisional. Contractual holding time criteria were met. The samples were in transit for up to nine days. The excessive transit time contributed to cyanide sample analyses exceeding the technical holding time limit. The reviewer qualified cyanide results for samples MFH-L76, MFH-L83, MFH-L84, MFH-L87, and MFH-L93 as estimated

1. **Holding Times, continued:**

and biased low because of excessive technical holding times. The other affected results were not qualified because these results were unusable for matrix related problems (see Section 4).

The laboratory reported cooler temperature of 6.3 and 9.0°C and a pH of 7.0 for sample MFH-L82. The slightly elevated cooler temperatures did not affect the results. However, the reviewer qualified all metals analytes for sample MFH-L82 as estimated and biased low because of the 7.0 pH. The cyanide analysis was also affected. However, the cyanide result was not qualified because the result was unusable for matrix related problems (see Section 4).

2. **Calibrations:** Provisional. All calibrations met contractual requirements. The CRDL standard recoveries for nickel ranged from 227 to 235 percent. As a result of poor instrument performance near the nickel CRDL, the reviewer qualified all detected nickel results as estimated and biased high.

3. **Blanks:** Acceptable. Preparation and calibration blanks met contractual requirements although the laboratory reported 13 analytes in the blanks. Blank concentrations only affected results below the CRDL's.

Rinsate: The rinsate samples contained 12 analytes at concentrations below the CRDL's and sodium above the CRDL in rinsate sample MFH-L83. The cadmium and selenium and some calcium, iron, magnesium, manganese, potassium, sodium, and zinc concentrations were due to calibration blank concentrations of these analytes. ESAT does not have information identifying the samples associated with the rinsate samples, so no evaluation for potential effects can be performed.

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Provisional. The laboratory reported matrix spike recoveries below the QC limits for aluminum, arsenic, lead, selenium, and cyanide. The arsenic recovery was only marginally low, so the arsenic results were not qualified. The reviewer qualified the aluminum, lead, selenium, and the detected cyanide result as estimated and biased low because of the low recoveries. The undetected cyanide results were unusable because the laboratory reported a cyanide matrix spike recovery below 30 percent.

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery, continued:**

The rinsate samples were not included in this evaluation because the associated matrix effects are not expected in such samples.

5. **Duplicate Analysis:** Provisional. The laboratory reported duplicate differences outside the QC limits for aluminum and iron, so the reviewer qualified the detected results for these analytes as estimated.

6. **ICP Quality Control:**

Serial Dilution: Provisional. The laboratory reported outlying serial dilution differences for aluminum, calcium, magnesium, potassium, and sodium. The calcium and sodium differences were only marginally high, so the reviewer did not qualify the calcium and sodium results. The reviewer qualified the aluminum, magnesium, and potassium results as estimated because of the high differences. The serial dilution results for aluminum and potassium were lower than the undiluted results, and the serial dilution result for magnesium was higher than the undiluted result. This indicated matrix interferences enhanced the signals for aluminum and potassium and depressed the signal for magnesium. Therefore, the reviewer also qualified the aluminum and potassium sample results as high biased and the magnesium sample result as low biased.

The rinsate samples were not included in this evaluation because the associated matrix effects are not expected in such samples.

Interference Check Sample: Acceptable. Acceptable ICS results indicated satisfactory interelement and background correction.

Coefficient of Variation: Provisional. The reviewer qualified the arsenic result for sample MFH-L85 as estimated because replicate ICP readings were inconsistent.

Negative Instrument Readings: Provisional. Negative lead instrument readings (greater than 2.5X the CRDL) indicated matrix related problems. As a result, the reviewer qualified the lead results for samples MFH-L82, MFH-L85, MFH-L86, MFH-L87, MFH-L88, MFH-L89, and MFH-L90 as estimated and biased low.

7. **Furnace Atomic Absorption Quality Control:** Not Applicable.

8. **Laboratory Control Sample:** Acceptable. Acceptable LCS results indicated satisfactory sample preparation and analysis.

9. **Sample Verification:** The reviewer detected a few reporting errors, and the laboratory was contacted for correction (see FAX Record Log).

10. **Other QC:**

Field Duplicate: Provisional. Field duplicate differences were greater than 35 percent for aluminum and iron, so the reviewer qualified as estimated the detected results for aluminum and iron.

11. **Overall Assessment:** The data package is technically provisional because of the following problems.

The reviewer qualified the aluminum, lead, magnesium, potassium, selenium, and cyanide results for seven samples because of matrix related problems.

The reviewer qualified all detected nickel results because of poor instrument performance near the nickel CRDL.

The reviewer qualified one arsenic result because of inconsistent instrument readings.

The reviewer qualified all detected aluminum and iron results because of poor laboratory and field precision.

The reviewer qualified five cyanide results because the technical holding time was exceeded.

The reviewer qualified 23 analytes for one sample because of a sample preservation problem.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

U Undetected at the laboratory reported detection limit (IDL).

L Reported concentration is between the IDL and the CRDL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.

^ High bias. Actual concentration may be lower than the concentration reported.

v Low bias. Actual concentration may be higher than the concentration reported.

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL82 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: WATER Units: ug/L

EPA TR #=>	MFH-L76	FLAG	MFH-L82	FLAG	MFH-L83	FLAG	MFH-L84	FLAG	MFH-L85	FLAG	COMMENTS
ALUMINUM	11.4	U	565	Jv^v	11.4	U	11.4	U	3250	Jv^	
ANTIMONY	4.8	U	4.8	UJv	4.8	U	4.8	U	4.8	U	
ARSENIC	4.1	U	4.1	UJv	4.1	U	4.1	U	11.7	J	
BARIUM	0.60	U	56.2	LJv	0.60	U	0.60	U	85.7	L	
BERYLLIUM	0.10	U	0.10	UJv	0.10	U	0.10	U	0.10	U	
CADMIUM	0.30	U	0.92	LUCJv	0.34	LUC	0.30	U	0.36	L	
CALCIUM	71.8	LUC	940000	Jv	1010	L	196	LUC	209000		
CHROMIUM	0.70	U	0.70	UJv	2.3	L	0.70	U	2.9	L	
COBALT	1.1	U	14.0	LJv	1.1	U	1.1	U	13.5	L	
COPPER	1.1	U	3.7	LJv	3.2	L	1.2	L	12.0	L	
IRON	11.8	U	332	Jv	28.3	LUCJ	18.9	LJ	2930	J	
LEAD	1.8	U	1.8	UJv	1.8	U	1.8	U	1.8	UJv	
MAGNESIUM	37.8	LUC	2330000	Jv	1050	L	59.2	LUC	528000	Jv	
MANGANESE	0.76	LUC	9400	Jv	9.6	L	0.73	LUC	3200		
MERCURY	0.10	U	0.10	UJv	0.10	U	0.10	U	0.10	U	
NICKEL	1.3	U	2.2	LJ^v	1.3	U	1.3	U	8.9	LJ^	
POTASSIUM	42.4	LUC	361000	LJ^v	199	L	75.2	LUC	170000	LJ^	
SELENIUM	2.5	LUC	2.3	UJv	2.3	U	2.3	LUC	2.3	UJv	
SILVER	0.80	U	1.2	LJv	0.80	U	0.80	U	0.80	U	
SODIUM	416	LUC	14200000	Jv	5250		380	LUC	5940000		
THALLIUM	2.9	U	3.9	LJv	2.9	U	2.9	U	2.9	U	
VANADIUM	1.4	U	2.0	LJv	1.4	U	1.4	U	8.4	L	
ZINC	4.2	LUC	18.4	LJv	26.8		8.6	L	30.5		
CYANIDE	0.40	UJv	0.40	UR	0.40	UJv	0.40	UJv	0.40	UR	

00010

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL82 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: WATER Units: ug/L

EPA TR #=>	MFH-L86	FLAG	MFH-L87	FLAG	MFH-L88	FLAG	MFH-L89	FLAG	MFH-L90	FLAG	COMMENTS
ALUMINUM	4820	Jv^	135	LUCJv^	552	Jv^	149	LJv^	7220	Jv^	
ANTIMONY	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U	
ARSENIC	4.2	L	4.1	U	4.1	U	4.1	U	5.7	L	
BARIUM	93.4	L	54.8	L	76.1	L	67.0	L	111	L	
BERYLLIUM	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	
CADMIUM	0.31	L	0.39	L	2.0	L	0.50	U	0.93	LUC	
CALCIUM	219000		1920000		652000		446000		795000		
CHROMIUM	3.9	L	0.70	U	0.70	U	0.70	U	6.3	L	
COBALT	14.5	L	9.8	L	3.2	L	1.1	U	7.8	L	
COPPER	10.7	L	3.2	L	4.1	L	2.9	L	11.3	L	
IRON	4180	J	487	J	464	J	162	J	6160	J	
LEAD	1.8	UJv	1.8	UJv	1.8	UJv	1.8	UJv	1.8	UJv	
MAGNESIUM	545000	Jv	2040000	Jv	788000	LJv	346000	Jv	801000	LJv	
MANGANESE	3420		24000		3510		1010		5420		
MERCURY	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	
NICKEL	9.6	LJ^	4.3	LJ^	3.5	LJ^	1.3	U	7.5	LJ^	
POTASSIUM	176000	LJ^	69900	LJ^	38600	J^	8270	J^	30500	J^	
SELENIUM	2.3	UJv	2.3	UJv	3.3	LUCJv	2.3	UJv	2.3	UJv	
SILVER	0.80	U	2.6	L	0.80	U	0.80	U	0.80	U	
SODIUM	6130000		10600000		4990000		3620000		4940000		
THALLIUM	2.9	U	2.9	U	5.4	L	2.9	U	3.5	L	
VANADIUM	10.7	L	1.4	U	3.0	L	2.9	L	14.2	L	
ZINC	31.5		26.4		11.5	L	15.0	L	26.5		
CYANIDE	0.40	UR	1.2	LJv	0.40	UR	0.40	UR	0.40	UR	

00011

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL82 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: WATER Units: ug/L

EPA TR #=>	MFH-L93	FLAG	FLAG	FLAG	FLAG	FLAG	COMMENTS
ALUMINUM	11.4 U						
ANTIMONY	4.8 U						
ARSENIC	5.2 L						
BARIUM	0.60 U						
BERYLLIUM	0.10 U						
CADMIUM	0.30 U						
CALCIUM	193 LUC						
CHROMIUM	1.4 L						
COBALT	1.1 U						
COPPER	6.8 L						
IRON	18.5 LJ						
LEAD	1.8 U						
MAGNESIUM	233 LUC						
MANGANESE	5.9 L						
MERCURY	0.10 U						
NICKEL	1.3 U						
POTASSIUM	154 LJ^						
SELENIUM	2.3 U						
SILVER	0.80 U						
SODIUM	2150 LUC						
THALLIUM	2.9 U						
VANADIUM	1.4 U						
ZINC	10.2 L						
CYANIDE	0.40 UJv						

00012

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25919 SDG No. MFHL82 SDG Nos. To Follow _____ SAS No. _____ Date Rec 01/20/98

EPA Lab ID: SENTIN

Lab Location: Huntsville, AL

Region: 6 Audit No.: 25919/MFHL82

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

7. Remark #7 was not completed.

9-12. Traffic Report 368294 was not submitted.

13. On Form DC-1, the laboratory stated that Airbill 1343375283 was submitted instead of Airbill 2423944935 as listed on Traffic Report 368264.

16/17. The laboratory did not complete this section.

The laboratory was contacted concerning these issues.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?		X	
8. Accurate?			X
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?			X
10. Dated?			X
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?			X
12. Dated?			X
AIRBILLS/AIRBILL STICKER			
13. Present?		X	
14. Signed?			X
15. Dated?			X
SAMPLE TAGS			
16. Does DC-1 list tags as being included?			X
17. Present?			X
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: _____ Linda Hoffman /ESAT Data Reviewer Date 01/31/98

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

00013

In Reference to
Case 25919/SDG MFHL82
Page 1 of 2 pages
ESAT File No: I2167

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: February 5, 1998

Laboratory Name: SENTIN

Lab Contact: Melvin Kilgore

Region: 6

Regional Contact: Linda Hoffman (ESAT)

FAX Initiated by: Region

In reference to data for the following sample number(s):

All samples in this SDG.

Summary of Questions/Issues:

1. The SDG number was not recorded below the Lab Receipt Date on the traffic reports (ILM04.0, Exhibit B, Section II, B-6, 2nd paragraph from bottom page). Please acknowledge and note for future cases.

2. The cooler temperature was not recorded on a case narrative (ILM04.0, Exhibit A, Task I, A-6, last paragraph of #5). Please acknowledge this requirement and note for future cases.

3. Traffic Report 368294 was not submitted with the data package. Please submit this traffic report at this time.

4. On Form DC-1 (p. 173), remark #7 was not completed. Please complete this section and resubmit page 173.

5. On Form 1 (p. 6), an incorrect potassium result was recorded for sample MFH-L85. Please correct page 6 by changing the potassium result from 14.2U to 170000B and resubmit.

6. The least dilution was not used for the magnesium in samples MFH-L88, MFH-L90, and MFH-L90D and potassium in samples MFH-L86, MFH-L87, MFH-L82, and MFH-L85 which resulted in diluted analyte concentrations below the CRDL's (ILM04.0, Exhibit D, D-1, 3rd paragraph). Please explain this contractual deviation.

00014

The EPA expects the laboratory to look into the above items and submit the data within seven days to:

Attn: Mahmoud El-Feky - U.S. EPA
10625 Fallstone Road
Houston, TX 77099

Signature

02/05/98
Date

Distribution: (1) Lab Copy, (2) Region Copy

Original SDG MI-HCYO #1D

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No. 6	Sampling Co. TNRCC	4. Date Shipped	Carrier AIRBORNE EXPRESS
Regional Information		Sampler (Name) WESLEY NEWBERRY		Airbill Number 2423937331	
Non-Superfund Program		Sampler Signature		5. Ship To SENTINEL, INC 2800 BOB WALLACE AVE, SUITE L3 HUNTSVILLE, AL 35805 ATTN: BEVERLY KILGORE	
Site Name MCGINNIS		3. Purpose: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD			
City, State GALVESTON, TX	Site Spill ID				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MFHL41	5	LOW	GRAB	6		X						6-164972	SE-14	12/11/97 1330	FFR19	SP	—
MFHL52	5	LOW	GRAB	6		X	X					6-163917-18	SE-01	12/11/97 1600	FFR30	SP	—
MFHL54	5	LOW	COMP	6		X	X					6-163931, 38	SE-03	12/11/97 1620	FFR32	SP	—
MFHL84	4	LOW	GRAB	6		X	X					6-164820-21	ER-02	12/11/97 1450	FFR56	MC	R

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Yes	2 of 2		Stephanie Pague	

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Cedeberg	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-13 REV.

000116

250201

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Inorganic CLP Analysis)

Case No.: 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	AIRBORNE EXPRESS

Regional Information	Sampler (Name)	Airbill Number
	MARSHALL CEPILOTE	2423944935

Non-Superfund Program	Sampler Signature	5. Ship To
	Marshall Cepilote	SENTINEL, INC. 2800 BOB WALLACE AVE., SUITE L3 HUNTSVILLE, AL 35805 ATTN: BEVERLY KILGORE

Site Name	3. Purpose*	Early Action	Long-Term Action
MCGINNIS	Lead: [X] SF [ ] PRP [ ] ST [ ] FED	[ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI	[ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD
City, State: GALVESTON, TX	Site Spill ID:		

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MFHL88	2	LOW	GRAB	2,3		X	X					6-163957 - 958	GW-01	12/10/97 11:25	FFR64	MC	—
MFHL89	2	LOW	GRAB	2,3		X	X					6-163974 - 975	GW-02	12/10/97 17:00	FFR61	MC	—
MFHL87	2	LOW	GRAB	2,3		X	X					6-164951 - 952	GW-06	12/10/97 15:12	FFR59	MC	—
MFHL74	4	LOW	GRAB	2,3		X	X					6-162353 - 354	ER-04	12/10/97 16:55	FFR48	WN	R

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
N	2 of 2	MFHL90		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-13 REV

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

00017

269265

#4

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Inorganic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No. 6	Sampling Co. TNRCC	4. Date Shipped 12/11/97	Carrier AIRBORNE EXP.
Regional Information		Sampler (Name) MARSHALL CEDILOTE		Airbill Number 2423944832	
Non-Superfund Program		Sampler Signature Marshall Cedilote		5. Ship To SENTINEL, INC. 2800 BOB WALLACE AVE, SUITE L3 HUNTSVILLE, AL 35805 ATTN: BEVERLY KILGORE	
Site Name MCGINNIS		3. Purpose* Lead: [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD			
City, State GALVESTON, TX	Site Spill ID				

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MFHL90	2	LOW	GRAB	2,3		X	X					6-164904-07	GW-03	12/10/97 1245	FFR62	MC	—
~~—~~													~~GW-04~~	~~12/10/97 1605~~		MC	— 12/10/97 DLS.
MFHL86	2	LOW	GRAB	2,3		X	X					6-164938-39	GW-05	12/10/97 1607	FFR58	WN	D (MFHL85)
MFHL82	2	LOW	GRAB	2,3		X	X					6-164964-65	GW-07	12/10/97 1537	FFR54	MC	—
MFHL83	~~2~~ 1	LOW	GRAB	2,3		X	X					6-164989-90	ER-01	12/10/97 0905	FFR55	MC	R
MFHL93	~~2~~ 1	LOW	GRAB	2,3		X	X					6-162347-48	ER-03	12/10/97 1020	FFR65	MC	R
MFHL85	2	LOW	GRAB	2,3		X	X					6-164918-19	GW-04	12/10/97 1605	FFR57	WN	—

00018

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
(N)	1 of 1	MFHL90		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Poque	12/11/97 0800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-112-13 REV

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

1 of 3

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL76

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 10142S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11.4	U	N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	0.60	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	71.8	B	E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.1	U		P
7440-50-8	Copper	1.1	U		P
7439-89-6	Iron	11.8	U	*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	37.8	B	E	P
7439-96-5	Manganese	0.76	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	42.4	B	E	P
7782-49-2	Selenium	2.5	B	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	416	B	E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	1.4	U		P
7440-66-6	Zinc	4.2	B		P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL82

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08986S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	565		N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	56.2	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.92	B		P
7440-70-2	Calcium	940000		E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	14.0	B		P
7440-50-8	Copper	3.7	B		P
7439-89-6	Iron	332		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	2330000		E	P
7439-96-5	Manganese	9400			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	361000	B	E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	1.2	B		P
7440-23-5	Sodium	14200000		E	P
7440-28-0	Thallium	3.9	B		P
7440-62-2	Vanadium	2.0	B		P
7440-66-6	Zinc	18.4	B		P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL83

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08987S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11.4	U	N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	0.60	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.34	B		P
7440-70-2	Calcium	1010	B	E	P
7440-47-3	Chromium	2.3	B		P
7440-48-4	Cobalt	1.1	U		P
7440-50-8	Copper	3.2	B		P
7439-89-6	Iron	28.3	B	*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	1050	B	E	P
7439-96-5	Manganese	9.6	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	199	B	E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	5250		E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	1.4	U		P
7440-66-6	Zinc	26.8			P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts: 4

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL84

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08988S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11.4	U	N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	0.60	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	196	B	E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.1	U		P
7440-50-8	Copper	1.2	B		P
7439-89-6	Iron	18.9	B	*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	59.2	B	E	P
7439-96-5	Manganese	0.73	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	75.2	B	E	P
7782-49-2	Selenium	2.3	B	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	380	B	E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	1.4	U		P
7440-66-6	Zinc	8.6	B		P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

MFHL85

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08989S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3250		N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	11.7		N	P
7440-39-3	Barium	85.7	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.36	B		P
7440-70-2	Calcium	209000		E	P
7440-47-3	Chromium	2.9	B		P
7440-48-4	Cobalt	13.5	B		P
7440-50-8	Copper	12.0	B		P
7439-89-6	Iron	2930		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	528000		E	P
7439-96-5	Manganese	3200			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	8.9	B		P
7440-09-7	Potassium	14.2	U	E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	5940000		E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	8.4	B		P
7440-66-6	Zinc	30.5			P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL86

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08990S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4820		N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.2	B	N	P
7440-39-3	Barium	93.4	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.31	B		P
7440-70-2	Calcium	219000		E	P
7440-47-3	Chromium	3.9	B		P
7440-48-4	Cobalt	14.5	B		P
7440-50-8	Copper	10.7	B		P
7439-89-6	Iron	4180		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	545000		E	P
7439-96-5	Manganese	3420			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	9.6	B		P
7440-09-7	Potassium	176000	B	E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	6130000		E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	10.7	B		P
7440-66-6	Zinc	31.5			P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL87

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 10123S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	135	B	N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	54.8	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.39	B		P
7440-70-2	Calcium	1920000		E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	9.8	B		P
7440-50-8	Copper	3.2	B		P
7439-89-6	Iron	487		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	2040000		E	P
7439-96-5	Manganese	24000			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.3	B		P
7440-09-7	Potassium	69900	B	E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	2.6	B		P
7440-23-5	Sodium	10600000		E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	1.4	U		P
7440-66-6	Zinc	26.4			P
	Cyanide	1.2	B	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL88

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 10124S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	552		N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	76.1	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	2.0	B		P
7440-70-2	Calcium	652000		E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	4.1	B		P
7439-89-6	Iron	464		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	788000	B	E	P
7439-96-5	Manganese	3510			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.5	B		P
7440-09-7	Potassium	38600		E	P
7782-49-2	Selenium	3.3	B	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	4990000		E	P
7440-28-0	Thallium	5.4	B		P
7440-62-2	Vanadium	3.0	B		P
7440-66-6	Zinc	11.5	B		P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL89

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 10125S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	149	B	N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	4.1	U	N	P
7440-39-3	Barium	67.0	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	B		P
7440-70-2	Calcium	446000		E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.1	U		P
7440-50-8	Copper	2.9	B		P
7439-89-6	Iron	162		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	346000		E	P
7439-96-5	Manganese	1010			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	8270		E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	3620000		E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	2.9	B		P
7440-66-6	Zinc	15.0	B		P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts: 10

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL90

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08991S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7220		N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	5.7	B	N	P
7440-39-3	Barium	111	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.93	B		P
7440-70-2	Calcium	795000		E	P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	11.3	B		P
7439-89-6	Iron	6160		*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	801000	B	E	P
7439-96-5	Manganese	5420			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.5	B		P
7440-09-7	Potassium	30500		E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	4940000		E	P
7440-28-0	Thallium	3.5	B		P
7440-62-2	Vanadium	14.2	B		P
7440-66-6	Zinc	26.5			P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

11

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL93

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL82

Matrix (soil/water): WATER Lab Sample ID: 08992S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11.4	U	N*E	P
7440-36-0	Antimony	4.8	U		P
7440-38-2	Arsenic	5.2	B	N	P
7440-39-3	Barium	0.60	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	193	B	E	P
7440-47-3	Chromium	1.4	B		P
7440-48-4	Cobalt	1.1	U		P
7440-50-8	Copper	6.8	B		P
7439-89-6	Iron	18.5	B	*	P
7439-92-1	Lead	1.8	U	N	P
7439-95-4	Magnesium	233	B	E	P
7439-96-5	Manganese	5.9	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	154	B	E	P
7782-49-2	Selenium	2.3	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	2150	B	E	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	1.4	U		P
7440-66-6	Zinc	10.2	B		P
	Cyanide	0.40	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APPENDIX D

Sample Designation Group MFHL40

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 2-12-1998

Subject: **Contract Laboratory Program Data Review**

From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC M. Humphrey 2/12/98

To: B. Kirchner ,6SF-RA

Site: MCGINNES INDUSTRIAL

Case#: 25919

SDG#: MFHL40

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

( ) Acceptable : No problems with data package.

(X) Provisional: Data is acceptable for regional use.
Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. ElFeky, Region 6 Data Coordinator
Files (2)

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: February 10, 1998

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom Chiang, ESAT Team Manager, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-8117A, ESAT File No. I2166
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case #25919
SDG #MFHL40
Site MCGINNES INDUSTRIAL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

Hard copy and CCS reviews detected the following contractually noncompliant item.

The determination date for the interelement correction factors (IEC) preceded the analysis dates by more than 12 calender months (ILM04.0; Exhibit B, B-36, O and Exhibit E, E-27, #11). The results were not technically affected because the analysis dates were only a few days outside the 12 month limit.

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 472 results were reviewed for this data package. The package is technically provisional because of the following problems.

A. The reviewer qualified 35 percent of the results because of technical problems.

B. The antimony matrix spike recovery was below the QC limit.

C. The chromium serial dilution difference was above the QC limit.

D. One selenium and three arsenic analyses had inconsistent instrument readings.

00002

MEMORANDUM, continued

Attached is the data review summary for Case #25919
SDG #MFHL40
Site MCGINNES INDUSTRIAL

III. OTHER AREAS OF CONCERN:

A. Nine samples were in transit for 10 days, and 11 samples were in transit for 4 days. The coolers arrived at the laboratory at 6.3°C and 9.0°C. Since neither the transit time nor the cooler temperatures were excessive for soil samples, the results were not technically affected.

B. The sampler designated samples MFH-L43 and MFH-L48 as field duplicates, but these samples did not require the same analyses.

C. The sampler failed to list sample MFH-L34 on the Traffic Report/Chain-of-Custody Record.

00003

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Inorganic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TURCC	12/11/97	AIRBORNE EXPRESS

Regional Information	Sampler (Name)	Airbill Number
	MARSHALL CEDILOTE	2423944935

Non-Superfund Program	Sampler Signature
	Marshall Cedilote

Site Name: McGINNIS

City, State: GALVESTON, TX

Site Spill ID:

3. Purpose*

Lead	Early Action	Long-Term Action
[X] SF	[ ] CLEM	[ ] FS
[ ] PRP	[ ] PA	[ ] RD
[ ] ST	[ ] REM	[ ] RA
[ ] FED	[ ] RI	[X] SI
	[ ] SI	[ ] O&M
	[ ] ESI	[ ] NPLD

5. Ship To
SENTINEL, INC.
2800 BOB WALLACE AVE., SUITE L3
HUNTSVILLE, AL 35805
ATTN: BEVERLY KILGORE

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MFHL48	5	Low	GRAB	2		X						6-164912	SE-09	12/9/97 13:49	FFR26	MC	—
MFHL43	5	Low	GRAB	2,3		X	X					6-164924 - 925	SE-10	12/9/97 14:01	FFR21	MC	D - MFHL48
MFHL42	5	Low	GRAB	2,3		X	X					6-164984 - 985	SE-15	12/9/97 11:26	FFR20	MC	—
MFHL37	5	Low	GRAB	2		X						6-164995	SE-16	12/9/97 13:43	FFR15	MC	—
MFHL38	5	Low	GRAB	2,3		X	X					6-164826 - 827	SE-17	12/9/97 11:13	FFR16	MC	—
MFHL39	5	Low	GRAB	2,3		X	X					6-164832 - 833	SE-18	12/9/97 10:32	FFR17	MC	—
MFHL91	5	Low	GRAB	2,3		X	X					6-163936 - 937	SE-22	12/9/97 13:03	FFR63	MC	—
MFHL92	5	Low	GRAB	2,3		X	X					6-163943 - 944	SE-23	12/9/97 12:44	FFR64	MC	—

00004

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 2	FFR20		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
John Cedilote	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25919 SITE MCGINNES INDUSTRIAL
LABORATORY SENTIN NO. OF SAMPLES 20
CONTRACT # 68-D5-0167 MATRIX soil
SDG # MFHL40 REVIEWER (IF NOT ESD) ESAT
SOW# ILM04.0 REVIEWER'S NAME Linda Hoffman
ACCT # 8FAXJN25 SF # FAXUZZ COMPLETION DATE February 10, 1998

SAMPLE NO.:					
	MFH-L34	MFH-L40	MFH-L44	MFH-L48	MFH-L52
	MFH-L37	MFH-L41	MFH-L45	MFH-L49	MFH-L54
	MFH-L38	MFH-L42	MFH-L46	MFH-L50	MFH-L91
	MFH-L39	MFH-L43	MFH-L47	MFH-L51	MFH-L92

DATA ASSESSMENT SUMMARY

	ICP	HG	CYANIDE
1. HOLDING TIMES	O	O	O
2. CALIBRATIONS	M	O	O
3. BLANKS	O	O	O
4. MATRIX SPIKES	M	O	O
5. DUPLICATE ANALYSIS	O	O	O
6. ICP QC	M		
7. FAA QC			
8. LCS	O	O	O
9. SAMPLE VERIFICATION	O	O	O
10. OTHER QC	O	O	O
11. OVERALL ASSESSMENT	M	O	O

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
N/A = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: The analysis date exceeded the IEC determination date by more than 12 calender months. The antimony matrix spike recovery was below 75 percent. The calcium, chromium, magnesium, manganese, potassium, and zinc serial dilution percent differences were greater than 10 percent. One selenium and three arsenic analyses had coefficients of variation greater than 20 percent. The nickel CRDL standard recoveries were greater than 150 percent.

NOTABLE PERFORMANCE: The laboratory submitted the package to the Region three days early.

Case 25919 SDG MFHL40 Site MCGINNES INDUSTRIAL Lab SENTIN

COMMENTS: The package consisted of data for 12 soil samples for total metals and cyanide analyses and 8 soil samples for total metals analyses only. The laboratory performed these analyses following the ILM04.0 SOW. The sampler designated samples MFH-L43/MFH-L48 and MFH-L44/MFH-L45 as field duplicate pairs and sample MFH-L84 (SDG MFHL82) as a rinsate sample. The sampler listed an organic sample number as the QC sample, so the laboratory performed QC analyses on sample MFH-L49. The laboratory met the 35-day turnaround time requirement but did not analyze the samples within 12 months of IEC determintion. Fifty-four percent of the reported results were above the CRDL's.

The data package is technically provisional because of problems with a matrix spike recovery, serial dilution differences, inconsistent ICP readings, and poor instrument performance near the CRDL. The technical usability of all reported results is indicated in the Data Summary Table.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is included as part of this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. Contractual holding time criteria were met. Technical holding time criteria have not yet been established for soil samples. The laboratory reported cooler temperatures of 6.3°C and 9.0°C. Since the temperatures were not excessive, the sample results were not technically affected.

2. **Calibrations:** Provisional. All calibrations met contractual requirements. The CRDL standard recoveries for nickel ranged from 166 to 237 percent. As a result of poor instrument performance near the nickel CRDL, the reviewer qualified all the nickel results as estimated and biased high.

3. **Blanks:** Acceptable. Preparation and calibration blanks met contractual requirements although the laboratory reported 15 analytes in the blanks. Blank concentrations only affected results below the CRDL's.

   Rinsate: Rinsate sample MFH-L84, in SDG MFHL82, contained

00006

3. **Blanks, continued:**

calcium, copper, iron, magnesium, manganese, potassium, selenium, sodium, and zinc at concentrations below the CRDL's. The calcium, magnesium, manganese, potassium, selenium, and sodium concentrations were due to calibration blank concentrations of these analytes. ESAT does not have information identifying the samples associated with the rinsate sample, so no evaluation for potential effects can be performed.

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Provisional. The laboratory reported matrix spike recoveries outside the QC limits for antimony, arsenic, and lead. Since the arsenic recovery was only marginally high and the lead recovery was only marginally low, the arsenic and lead results were not qualified. The reviewer qualified the antimony results as estimated and biased low because of a low matrix spike recovery.

5. **Duplicate Analysis:** Acceptable. The laboratory reported duplicate differences outside the QC limits for aluminum, calcium, chromium, and iron. The reviewer did not qualify any results because the duplicate differences met technical QC criteria or were only marginally high.

6. **ICP Quality Control:**

Serial Dilution: Provisional. The serial dilution differences for calcium, chromium, magnesium, manganese, potassium, and zinc failed to meet QC criteria, so the reviewer qualified the sample results for these analytes as estimated. The serial dilution results were higher than the undiluted results, indicating that matrix interferences depressed the signals for these analytes. Therefore, the reviewer also qualified the calcium, chromium, magnesium, manganese, potassium, and zinc sample results as low biased.

Interference Check Sample: Acceptable. Acceptable ICS results indicated satisfactory interelement and background correction.

Coefficient of Variation: Provisional. The reviewer qualified the following results as estimated because replicate ICP readings were inconsistent:

arsenic for samples MFH-L38, MFH-L43, and MFH-L45 and

selenium for sample MFH-L47.

7. **Furnace Atomic Absorption Quality Control:** Not Applicable.

8. **Laboratory Control Sample:** Acceptable. Acceptable LCS results indicated satisfactory sample preparation and analysis.

9. **Sample Verification:** The reviewer detected a few minor reporting errors, and the laboratory was contacted for correction (see FAX Record Log).

   The laboratory reanalyzed the matrix spike sample and resubmitted the data. The resubmitted data has already been incorporated into the data package. The page numbers assigned by the laboratory to the resubmitted pages contained some errors that the reviewer corrected.

10. **Other QC:**

    Field Duplicate: Acceptable. Field duplicate differences indicated acceptable laboratory and field precision. The sampler did not request cyanide on sample MFH-L48 but requested that analysis for it's field duplicate, sample MFH-L43. Therefore, the cyanide precision could not be determined for this field duplicate pair.

11. **Overall Assessment:** The data package is technically provisional because of the following problems.

    The reviewer qualified the sample results for antimony, calcium, chromium, magnesium, manganese, potassium, and zinc because of matrix related problems.

    The reviewer qualified all nickel results because of poor instrument performance near the nickel CRDL.

    The reviewer qualified one selenium and three arsenic results because of inconsistent instrument readings.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

U Undetected at the laboratory reported detection limit (IDL).

L Reported concentration is between the IDL and the CRDL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.

^ High bias. Actual concentration may be lower than the concentration reported.

v Low bias. Actual concentration may be higher than the concentration reported.

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL40 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFH-L34	FLAG	MFH-L37	FLAG	MFH-L38	FLAG	MFH-L39	FLAG	MFH-L40	FLAG	COMMENTS
ALUMINUM	9480		8880		7340		10400		29900		
ANTIMONY	1.4	UJv	1.2	UJv	1.3	UJv	1.5	UJv	1.9	UJv	
ARSENIC	3.4		5.7		2.6	J	8.4		9.3		
BARIUM	77.4		203		49.0	L	85.1		36.1	L	
BERYLLIUM	0.50	L	0.63	L	0.33	L	0.59	L	1.6	L	
CADMIUM	0.28	L	0.37	L	0.21	L	0.60	L	0.78	L	
CALCIUM	8650	Jv	7960	Jv	3420	Jv	8860	Jv	1940	LJv	
CHROMIUM	9.9	Jv	10.4	Jv	7.8	Jv	46.7	Jv	25.9	Jv	
COBALT	4.8	L	4.6	L	4.0	L	6.7	L	17.5	L	
COPPER	6.8	L	7.0		3.9	L	29.7		13.3		
IRON	9800		12800		7390		11200		26300		
LEAD	10.5		10.0		6.5		42.5		23.4		
MAGNESIUM	3300	Jv	2750	Jv	2320	Jv	4100	Jv	7930	Jv	
MANGANESE	260	Jv	132	Jv	142	Jv	227	Jv	150	Jv	
MERCURY	0.07	U	0.06	U	0.07	U	0.07	U	0.10	U	
NICKEL	7.6	LJ^	8.4	LJ^	5.3	LJ^	8.9	LJ^	26.3	J^	
POTASSIUM	2740	Jv	2710	Jv	1970	Jv	3010	Jv	7340	Jv	
SELENIUM	0.65	U	0.58	U	0.61	U	0.71	U	0.91	U	
SILVER	0.41	L	0.60	L	.30	L	1.0	L	1.2	L	
SODIUM	5260		3510		3270		5320		9990		
THALLIUM	0.82	U	0.73	U	0.76	U	0.90	U	1.2	U	
VANADIUM	15.7		30.3		12.3	L	18.3		43.4		
ZINC	26.2	Jv	22.5	Jv	20.0	Jv	78.8	Jv	79.0	Jv	
CYANIDE	0.03	U	---		0.03	U	0.09	LUC	---		
% SOLIDS	67.3		76.0		72.9		61.5		50.3		

00010

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL40 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFH-L41	FLAG	MFH-L42	FLAG	MFH-L43	FLAG	MFH-L44	FLAG	MFH-L45	FLAG	COMMENTS
ALUMINUM	27700		9000		16300		16600		10800		
ANTIMONY	2.0	UJv	1.3	UJv	1.4	UJv	1.3	UJv	1.6	LUCJv	
ARSENIC	6.5		2.8		4.6	J	3.9		3.7	J	
BARIUM	48.5	L	25.0	L	105		119		143		
BERYLLIUM	1.4	L	0.51	L	0.74	L	0.79	L	0.69	L	
CADMIUM	0.58	L	0.33	L	0.50	L	0.39	L	0.38	L	
CALCIUM	1790	LJv	6410	Jv	21600	Jv	26700	Jv	41200	Jv	
CHROMIUM	25.4	Jv	8.8	Jv	14.6	Jv	14.4	Jv	10.2	Jv	
COBALT	7.4	L	3.7	L	5.7	L	6.9	L	7.2	L	
COPPER	16.2		4.6	L	11.4		8.6		9.1		
IRON	21600		8810		14800		14100		12100		
LEAD	23.1		7.7		11.4		13.5		16.7		
MAGNESIUM	7670	Jv	2970	Jv	4390	Jv	4450	Jv	4420	Jv	
MANGANESE	101	Jv	78.1	Jv	242	Jv	430	Jv	657	Jv	
MERCURY	0.10	U	0.07	U	0.07	U	0.07	U	0.06	U	
NICKEL	15.5	LJ^	6.6	LJ^	10.4	LJ^	10.2	LJ^	8.9	LJ^	
POTASSIUM	7220	Jv	2620	Jv	3910	Jv	3350	Jv	2590	Jv	
SELENIUM	1.4	LUC	0.63	U	0.88	L	0.62	U	0.62	U	
SILVER	0.91	L	0.28	L	0.71	L	0.63	L	0.50	L	
SODIUM	11100		4050		4950		1970		1720		
THALLIUM	1.2	U	0.79	U	0.87	U	0.79	U	0.78	U	
VANADIUM	43.8		13.9		24.9		24.8		22.5		
ZINC	69.7	Jv	25.3	Jv	34.3	Jv	33.0	Jv	30.1	Jv	
CYANIDE	---		0.03	U	0.03	U	---		---		
% SOLIDS	48.2		73.0		65.2		70.3		71.3		

00011

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL40 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFH-L46	FLAG	MFH-L47	FLAG	MFH-L48	FLAG	MFH-L49	FLAG	MFH-L50	FLAG	COMMENTS
ALUMINUM	11800		19000		12700		11900		14700		
ANTIMONY	2.0	UJv	1.4	UJv	1.4	UJv	1.3	UJv	1.6	UJv	
ARSENIC	2.9	L	3.7		2.1	L	2.1	L	2.5	L	
BARIUM	166		124		99.4		83.3		197		
BERYLLIUM	0.35	L	0.75	L	0.70	L	0.55	L	0.39	L	
CADMIUM	0.91	L	0.62	L	0.40	L	0.22	L	0.98	L	
CALCIUM	127000	Jv	21800	Jv	15200	Jv	15500	Jv	111000	Jv	
CHROMIUM	109	Jv	20.7	Jv	12.1	Jv	11.9	Jv	69.4	Jv	
COBALT	4.2	L	7.8	L	5.6	L	4.7	L	3.9	L	
COPPER	44.1		13.6		12.6		7.8		41.1		
IRON	7050		20300		12500		10400		7500		
LEAD	42.6		13.0		11.0		9.3		51.5		
MAGNESIUM	4860	Jv	4330	Jv	4080	Jv	3370	Jv	3110	Jv	
MANGANESE	426	Jv	445	Jv	241	Jv	202	Jv	541	Jv	
MERCURY	0.10	U	0.07	U	0.07	U	0.06	U	0.08	U	
NICKEL	24.3	J^	13.9	J^	10.3	LJ^	8.6	LJ^	14.0	J^	
POTASSIUM	1790	LJv	4380	Jv	3550	Jv	2850	Jv	1540	LJv	
SELENIUM	1.1	LUC	0.99	LUCJ	0.69	U	0.70	LUC	0.78	U	
SILVER	0.33	L	0.96	L	0.61	L	0.41	L	0.30	L	
SODIUM	2620		4820		5050		1210	L	1590	L	
THALLIUM	1.2	U	0.82	U	0.87	U	0.77	U	0.99	U	
VANADIUM	15.0	L	29.0		21.8		18.4		11.6	L	
ZINC	146	Jv	72.6	Jv	34.1	Jv	28.7	Jv	150	Jv	
CYANIDE	---		---		---		0.03	U	0.28	LUC	
% SOLIDS	47.3		67.3		65.6		73.2		56.4		

00012

DATA SUMMARY

Case No.: 25919 SDG. No.: MFHL40 Reviewer: L. Hoffman

Laboratory: SENTIN Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFH-LS1	FLAG	MFH-LS2	FLAG	MFH-LS4	FLAG	MFH-L91	FLAG	MFH-L92	FLAG	COMMENTS
ALUMINUM	18400		17500		17900		4140		14800		
ANTIMONY	1.2	UJv	1.3	UJv	1.2	UJv	1.2	UJv	1.5	UJv	
ARSENIC	3.2		1.2	L	3.9		1.0	L	3.1		
BARIUM	181		29.7	L	27.7	L	12.9	L	66.6		
BERYLLIUM	0.75	L	1.0	L	0.87	L	0.22	L	0.90	L	
CADMIUM	0.41	L	0.30	L	0.46	L	0.11	L	0.44	L	
CALCIUM	23900	Jv	1590	Jv	1250	LJv	647	LJv	5290	Jv	
CHROMIUM	14.0	Jv	16.2	Jv	16.4	Jv	4.9	Jv	27.8	Jv	
COBALT	5.3	L	4.2	L	7.4	L	1.8	L	5.4	L	
COPPER	7.7		9.2		7.3		6.3		15.4		
IRON	13100		11900		14700		4000		12900		
LEAD	10.5		13.9		10.7		4.1		16.4		
MAGNESIUM	5880	Jv	4340	Jv	4440	Jv	1220	LJv	4610	Jv	
MANGANESE	201	Jv	150	Jv	81.4	Jv	34.5	Jv	142	Jv	
MERCURY	0.06	U	0.07	U	0.06	U	0.06	U	0.08	U	
NICKEL	9.5	LJ^	10.0	LJ^	12.9	J^	2.7	LJ^	10.2	LJ^	
POTASSIUM	2540	Jv	4480	Jv	4880	Jv	1130	LJv	3510	Jv	
SELENIUM	0.56	U	0.62	U	0.58	U	0.57	U	1.1	LUC	
SILVER	0.54	L	0.47	L	0.63	L	0.20	U	0.68	L	
SODIUM	1660		5480		4060		1490		4700		
THALLIUM	0.71	U	0.79	U	0.73	U	0.72	U	0.88	U	
VANADIUM	30.1		25.1		28.6		7.6	L	22.1		
ZINC	25.1	Jv	33.9	Jv	42.7	Jv	10.4	Jv	43.7	Jv	
CYANIDE	0.02	U	0.03	U	0.03	U	0.03	U	0.03	U	
% SOLIDS	78.1		70.2		75.5		78.4		63.4		

00013

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25919 SDG No. MFHL40 SDG Nos. To Follow _____ SAS No. _____ Date Rec 01/20/98

EPA Lab ID: SENTIN

Lab Location: Huntsville, AL

Region: 6 Audit No.: 25919/MFHL40

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

8. An incorrect airbill number was listed.

13. Airbill 2423944935 listed on Traffic Report 368264 was not submitted.

The laboratory was contacted concerning these issues.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?		X	
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?		X	
14. Signed?			X
15. Dated?			X
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: _____ Linda Hoffman /ESAT Data Reviewer Date 01/26/98

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

00014

In Reference to
Case 25919/SDG MFHL40
Page 1 of 1 page
ESAT File No: I2166

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: January 26, 1997

Laboratory Name: SENTIN

Lab Contact: Melvin Kilgore

Region: 6

Regional Contact: Linda Hoffman (ESAT)

Call Initiated by: Region

In reference to data for the following sample number(s):

MFH-L49S

Summary of Questions/Issues Discussed:

Please provide information on the matrix spike solution to help the reviewer verify the possible causes for the extremely low (<5%) matrix spike recoveries for most ICP analytes.

Summary of Resolutions:

After reviewing the results, Mr. Kilgore determined the matrix spike solution was omitted from the matrix spike sample. He offered to reanalyze the matrix spike sample and submit the data by February 3, 1998.

Signature

01/26/98
Date

Distribution: (1) Lab Copy, (2) Region Copy

00015

In Reference to
Case 25919/SDG MFHL40
Page 1 of 3 pages
ESAT File No: I2166

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: February 10, 1998

Laboratory Name: SENTIN

Lab Contact: Melvin Kilgore

Region: 6

Regional Contact: Linda Hoffman (ESAT)

FAX Initiated by: Region

In reference to data for the following sample number(s):

All samples in this SDG.

Summary of Questions/Issues:

Original data

1. Improper scratch-outs were made on pages 162 - 164, 187, 190, 192, 194, 200, and 201 (ILM04.0, Exhibit F, F-5, 2.5.8). Please acknowledge this requirement and note for future cases.

2. The SDG number was not recorded below the Lab Receipt Date on the traffic reports (ILM04.0, Exhibit B, Section II, B-6, 2nd paragraph from bottom page). Please acknowledge and note for future cases.

3. The cooler temperature was not recorded on a case narrative (ILM04.0, Exhibit A, Task I, A-6, last paragraph of #5). Please acknowledge and note for future cases.

4. Airbill 1343375283 (p. 172), submitted and recorded on Form DC-1 (p. 186), does not agree with Airbill number/Sticker 2423944935 recorded on Traffic Report 368264 (p. 170). In addition, Airbill/Sticker 2423944935 was not submitted. Please explain and submit Airbill 2423944935 if necessary.

5. On Form 14, antimony was not X'd for the last CRI, ICSA, ICSAB, CCV, and CCB (analysis time 0515-0542) before the antimony analysis was terminated. Please correct Form 14 (p. 51) by X'ing the above QC samples that are associated

with the antimony analyses for samples MFH-L44 through MFH-L47, MFH-L50, and MFH-L51 (the samples between the last acceptable CCV analyses).

6. The antimony CCV's 2 (from p. 78) and 3 (from p. 89) were not recorded on Form 2A, the final CRI (from p. 86) was not recorded on Form 2B (p. 27), and the final ICSAB (from p. 88) was not recorded on Form 4 (p. 33). Please correct and resubmit Forms 2A, 2B, 3, and 4.

Reanalysis data

1. The PBS from 1/2/98 was omitted from the resubmitted Form 3's. Please add the PBS from 1/2/98 to Form 3 and resubmit.

2. The copper, lead, manganese, vanadium, and zinc ICV and CCV's were not recorded on the Form 2A's (pp. 25A, 26A, and 27A) or X'd on the Form 14's (PP. 53A and 54A). Please make the appropriate corrections to Forms 2A and 14 and resubmit.

3. The updated Forms 10, 11A, 11B, and 12 were not submitted. Please submit Forms 10, 11A, 11B, and 12.

4. The mercury and cyanide LCSS, which were correctly recorded on page 39 of the original data package, were recorded a second time on Form 7 (p. 47A). Please correct page 47A by removing the mercury and cyanide LCSS results and resubmit.

5. The results reported on Forms 5A (p.45A) and 7 (p. 47A) appear to have been calculated based on the 1/2/98 preparation date sample weights instead of the sample weights from preparation date 1/28/98. Please correct and resubmit pages 45A and 47A.

6. The instrument ID was not recorded on the ICP raw data analyzed on 2/3/98 (ILM04.0, Exhibit B, B-9, Section II, C.2.d and B-11, #7). Please record the instrument ID, on the first page of the raw data and resubmit.

7. From the raw data (p. 116A), the iron CCV2 on Form 2A (p. 24A) should be 2477.56, not 2363.5. Please correct and resubmit page 24A.

8. On the resubmitted Form 14 (p. 49A), the PBS and LCSS for ICP digested on 1/2/98 were not X'd. Please correct page 49A by X'ing the ICP analytes for the PBS and LCSS analyzed on 1/2/98 and resubmit these pages.

00017

In Reference to
Case 25919/SDG MFHL40
Page 3 of 3 pages
ESAT File No: I2166

The EPA expects the laboratory to look into the above items and submit the data within seven days to:

Attn: Mahmoud El-Feky - U.S. EPA
10625 Fallstone Road
Houston, TX 77099

Signature

02/10/98
Date

Distribution: (1) Lab Copy, (2) Region Copy

00018

4110

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Inorganic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC		AIRBORNE EXPRESS

Regional Information

Sampler (Name): WESLEY NEWBERRY

Airbill Number: 2423937331

Non-Superfund Program

Sampler Signature:

3. Purpose: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

Site Name: MCGINNIS

5. Ship To: SENTINEL, INC
2800 BOB WALLACE AVE, SUITE L3
HUNTSVILLE, AL 35805
ATTN: BEVERLY KILGORE

City, State: GALVESTON, TX

Site Spill ID

6. Matrix (Enter in Column A): 1. Surface Water; 2. Ground Water; 3. Leachate; 4. Field QC; 5. Soil/Sediment; 6. Oil (High only); 7. Waste (High only); 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl; 2. HNO3; 3. NaOH; 4. H_2SO_4; 5. $K_2CR_2O_7$; 6. Ice only; 7. Other (specify in Column D); N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
MFHL41	5	LOW	GRAB	6		X						6-164972	SE-14	12/11/97 1330	FFR19	SP	—
MFHL52	5	LOW	GRAB	6		X	X					6-163917-18	SE-01	12/11/97 1600	FFR30	SP	—
MFHL54	5	LOW	COMP	6		X	X					6-163931, 38	SE-03	12/11/97 1620	FFR32	SP	—
MFHL84	4	LOW	GRAB	6		X	X					6-164820-21	ER-02	12/11/97 1750	FFR56	MC	R

Shipment for Case Complete? (Y/N): Yes

Page: 2 of 2

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures: Stephanie Pogue

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Cedeño	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A2-012-13 REV

61000

368294

#1A

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Inorganic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC		AIRBORNE EXPRESS

Regional Information

Sampler (Name): WESLEY NEWBERRY

Airbill Number: 2423937331

Non-Superfund Program

Sampler Signature:

Site Name: McGINNIS

City, State: GALVESTON, TX

Site Spill ID

3. Purpose*
- Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED
- Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI
- Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

5. Ship To: SENTINEL, INC.
2800 BOB WALLACE AVE., SUITE L3
HUNTSVILLE, AL 35805
ATTN: BEVERLY KILGORE

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
~~MFHL49~~	~~5~~	~~LOW~~	~~GRAB~~	~~6~~		~~X~~	~~X~~					~~6-163951-52~~	~~SE-04~~	~~12/11/97 1050~~	~~FFR27~~	~~WN~~	~~—~~
MFHL49	5	LOW	COMP	6		X	X					6-163951-52	SE-04	12/11/97 1050	FFR27	WN	—
MFHL50	5	LOW	COMP	6		X	X					6-163963-64	SE-05	12/11/97 1130	FFR28	WN	—
MFHL51	5	LOW	GRAB	6		X	X					6-163969-70	SE-06	12/11/97 1115	FFR29	WN	—
~~MFHL46~~	~~5~~	~~LOW~~	~~GRAB~~	~~6~~		~~X~~	~~X~~					~~6-163780-81~~	~~SE-07~~	~~12/11/97 1145~~	~~FFR24~~	~~WN~~	~~—~~
MFHL46	5	LOW	GRAB	6		X						6-163980	SE-07	12/11/97 1145	FFR24	WN	—
MFHL47	5	LOW	GRAB	6		X						6-163994	SE-08	12/11/97 1235	FFR25	SP	—
MFHL45	5	LOW	GRAB	6		X						6-164946	SE-12	12/11/97 1220	FFR23	WN	D(MFHL44)
MFHL44	5	LOW	GRAB	6		X						6-164932	SE-11	12/11/97 1215	FFR22	WN	—
MFHL40	5	LOW	GRAB	6		X						6-164959	SE-13	12/11/97 1315	FFR18	SP	—

~~VBS 12/4/97~~ VBS 12/11/97

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Yes	1 of 2		Stephanie Pozzy	

02000

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Cobb	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL34

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10114S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 67.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9480		*	P
7440-36-0	Antimony	1.4	U	N	P
7440-38-2	Arsenic	3.4		N	P
7440-39-3	Barium	77.4			P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.28	B		P
7440-70-2	Calcium	8650		*E	P
7440-47-3	Chromium	9.9		*E	P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	6.8	B		P
7439-89-6	Iron	9800		*	P
7439-92-1	Lead	10.5		N	P
7439-95-4	Magnesium	3300		E	P
7439-96-5	Manganese	260		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	7.6	B		P
7440-09-7	Potassium	2740		E	P
7782-49-2	Selenium	0.65	U		P
7440-22-4	Silver	0.41	B		P
7440-23-5	Sodium	5260			P
7440-28-0	Thallium	0.82	U		P
7440-62-2	Vanadium	15.7			P
7440-66-6	Zinc	26.2		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL37

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10115S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 76.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8880		*	P
7440-36-0	Antimony	1.2	U	N	P
7440-38-2	Arsenic	5.7		N	P
7440-39-3	Barium	203			P
7440-41-7	Beryllium	0.63	B		P
7440-43-9	Cadmium	0.37	B		P
7440-70-2	Calcium	7960		*E	P
7440-47-3	Chromium	10.4		*E	P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	7.0			P
7439-89-6	Iron	12800		*	P
7439-92-1	Lead	10.0		N	P
7439-95-4	Magnesium	2750		E	P
7439-96-5	Manganese	132		E	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	8.4	B		P
7440-09-7	Potassium	2710		E	P
7782-49-2	Selenium	0.58	U		P
7440-22-4	Silver	0.60	B		P
7440-23-5	Sodium	3510			P
7440-28-0	Thallium	0.73	U		P
7440-62-2	Vanadium	30.3			P
7440-66-6	Zinc	22.5		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

02/10/9

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL38

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10116S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 72.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7340		*	P
7440-36-0	Antimony	1.3	U	N	P
7440-38-2	Arsenic	2.6		N	P
7440-39-3	Barium	49.0	B		P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	0.21	B		P
7440-70-2	Calcium	3420		*E	P
7440-47-3	Chromium	7.8		*E	P
7440-48-4	Cobalt	4.0	B		P
7440-50-8	Copper	3.9	B		P
7439-89-6	Iron	7390		*	P
7439-92-1	Lead	6.5		N	P
7439-95-4	Magnesium	2320		E	P
7439-96-5	Manganese	142		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	5.3	B		P
7440-09-7	Potassium	1970		E	P
7782-49-2	Selenium	0.61	U		P
7440-22-4	Silver	0.30	B		P
7440-23-5	Sodium	3270			P
7440-28-0	Thallium	0.76	U		P
7440-62-2	Vanadium	12.3	B		P
7440-66-6	Zinc	20.0		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL39

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10117S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 61.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10400		*	P
7440-36-0	Antimony	1.5	U	N	P
7440-38-2	Arsenic	8.4		N	P
7440-39-3	Barium	85.1			P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	0.60	B		P
7440-70-2	Calcium	8860		*E	P
7440-47-3	Chromium	46.7		*E	P
7440-48-4	Cobalt	6.7	B		P
7440-50-8	Copper	29.7			P
7439-89-6	Iron	11200		*	P
7439-92-1	Lead	42.5		N	P
7439-95-4	Magnesium	4100		E	P
7439-96-5	Manganese	227		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	8.9	B		P
7440-09-7	Potassium	3010		E	P
7782-49-2	Selenium	0.71	U		P
7440-22-4	Silver	1.0	B		P
7440-23-5	Sodium	5320			P
7440-28-0	Thallium	0.90	U		P
7440-62-2	Vanadium	18.3			P
7440-66-6	Zinc	78.8		E	P
	Cyanide	0.09	B		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

02/10/

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL40

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08993S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 50.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29900		*	P
7440-36-0	Antimony	1.9	U	N	P
7440-38-2	Arsenic	9.3		N	P
7440-39-3	Barium	36.1	B		P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	0.78	B		P
7440-70-2	Calcium	1940	B	*E	P
7440-47-3	Chromium	25.9		*E	P
7440-48-4	Cobalt	17.5	B		P
7440-50-8	Copper	13.3			P
7439-89-6	Iron	26300		*	P
7439-92-1	Lead	23.4		N	P
7439-95-4	Magnesium	7930		E	P
7439-96-5	Manganese	150		E	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	26.3			P
7440-09-7	Potassium	7340		E	P
7782-49-2	Selenium	0.91	U		P
7440-22-4	Silver	1.2	B		P
7440-23-5	Sodium	9990			P
7440-28-0	Thallium	1.2	U		P
7440-62-2	Vanadium	43.4			P
7440-66-6	Zinc	79.0		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL41

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08994S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 48.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27700		*	P
7440-36-0	Antimony	2.0	U	N	P
7440-38-2	Arsenic	6.5		N	P
7440-39-3	Barium	48.5	B		P
7440-41-7	Beryllium	1.4	B		P
7440-43-9	Cadmium	0.58	B		P
7440-70-2	Calcium	1790	B	*E	P
7440-47-3	Chromium	25.4		*E	P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	16.2			P
7439-89-6	Iron	21600		*	P
7439-92-1	Lead	23.1		N	P
7439-95-4	Magnesium	7670		E	P
7439-96-5	Manganese	101		E	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	15.5	B		P
7440-09-7	Potassium	7220		E	P
7782-49-2	Selenium	1.4	B		P
7440-22-4	Silver	0.91	B		P
7440-23-5	Sodium	11100			P
7440-28-0	Thallium	1.2	U		P
7440-62-2	Vanadium	43.8			P
7440-66-6	Zinc	69.7		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

07/10/98

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL42

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10118S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 73.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9000		*	P
7440-36-0	Antimony	1.3	U	N	P
7440-38-2	Arsenic	2.8		N	P
7440-39-3	Barium	25.0	B		P
7440-41-7	Beryllium	0.51	B		P
7440-43-9	Cadmium	0.33	B		P
7440-70-2	Calcium	6410		*E	P
7440-47-3	Chromium	8.8		*E	P
7440-48-4	Cobalt	3.7	B		P
7440-50-8	Copper	4.6	B		P
7439-89-6	Iron	8810		*	P
7439-92-1	Lead	7.7		N	P
7439-95-4	Magnesium	2970		E	P
7439-96-5	Manganese	78.1		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	6.6	B		P
7440-09-7	Potassium	2620		E	P
7782-49-2	Selenium	0.63	U		P
7440-22-4	Silver	0.28	B		P
7440-23-5	Sodium	4050			P
7440-28-0	Thallium	0.79	U		P
7440-62-2	Vanadium	13.9			P
7440-66-6	Zinc	25.3		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

9

1/10/98

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL43

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10119S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 65.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16300		*	P
7440-36-0	Antimony	1.4	U	N	P
7440-38-2	Arsenic	4.6		N	P
7440-39-3	Barium	105			P
7440-41-7	Beryllium	0.74	B		P
7440-43-9	Cadmium	0.50	B		P
7440-70-2	Calcium	21600		*E	P
7440-47-3	Chromium	14.6		*E	P
7440-48-4	Cobalt	5.7	B		P
7440-50-8	Copper	11.4			P
7439-89-6	Iron	14800		*	P
7439-92-1	Lead	11.4		N	P
7439-95-4	Magnesium	4390		E	P
7439-96-5	Manganese	242		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	10.4	B		P
7440-09-7	Potassium	3910		E	P
7782-49-2	Selenium	0.88	B		P
7440-22-4	Silver	0.71	B		P
7440-23-5	Sodium	4950			P
7440-28-0	Thallium	0.87	U		P
7440-62-2	Vanadium	24.9			P
7440-66-6	Zinc	34.3		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

07/10/98

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL44

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08995S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 70.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16600		*	P
7440-36-0	Antimony	1.3	U	N	P
7440-38-2	Arsenic	3.9		N	P
7440-39-3	Barium	119			P
7440-41-7	Beryllium	0.79	B		P
7440-43-9	Cadmium	0.39	B		P
7440-70-2	Calcium	26700		*E	P
7440-47-3	Chromium	14.4		*E	P
7440-48-4	Cobalt	6.9	B		P
7440-50-8	Copper	8.6			P
7439-89-6	Iron	14100		*	P
7439-92-1	Lead	13.5		N	P
7439-95-4	Magnesium	4450		E	P
7439-96-5	Manganese	430		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	10.2	B		P
7440-09-7	Potassium	3350		E	P
7782-49-2	Selenium	0.62	U		P
7440-22-4	Silver	0.63	B		P
7440-23-5	Sodium	1970			P
7440-28-0	Thallium	0.79	U		P
7440-62-2	Vanadium	24.8			P
7440-66-6	Zinc	33.0		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL45

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08996S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 71.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10800		*	P
7440-36-0	Antimony	1.6	B	N	P
7440-38-2	Arsenic	3.7		N	P
7440-39-3	Barium	143			P
7440-41-7	Beryllium	0.69	B		P
7440-43-9	Cadmium	0.38	B		P
7440-70-2	Calcium	41200		*E	P
7440-47-3	Chromium	10.2		*E	P
7440-48-4	Cobalt	7.2	B		P
7440-50-8	Copper	9.1			P
7439-89-6	Iron	12100		*	P
7439-92-1	Lead	16.7		N	P
7439-95-4	Magnesium	4420		E	P
7439-96-5	Manganese	657		E	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	8.9	B		P
7440-09-7	Potassium	2590		E	P
7782-49-2	Selenium	0.62	U		P
7440-22-4	Silver	0.50	B		P
7440-23-5	Sodium	1720			P
7440-28-0	Thallium	0.78	U		P
7440-62-2	Vanadium	22.5			P
7440-66-6	Zinc	30.1		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL46

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08997S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 47.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11800		*	P
7440-36-0	Antimony	2.0	U	N	P
7440-38-2	Arsenic	2.9	B	N	P
7440-39-3	Barium	166			P
7440-41-7	Beryllium	0.35	B		P
7440-43-9	Cadmium	0.91	B		P
7440-70-2	Calcium	127000		*E	P
7440-47-3	Chromium	109		*E	P
7440-48-4	Cobalt	4.2	B		P
7440-50-8	Copper	44.1			P
7439-89-6	Iron	7050		*	P
7439-92-1	Lead	42.6		N	P
7439-95-4	Magnesium	4860		E	P
7439-96-5	Manganese	426		E	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	24.3			P
7440-09-7	Potassium	1790	B	E	P
7782-49-2	Selenium	1.1	B		P
7440-22-4	Silver	0.33	B		P
7440-23-5	Sodium	2620			P
7440-28-0	Thallium	1.2	U		P
7440-62-2	Vanadium	15.0	B		P
7440-66-6	Zinc	146		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

13

02/10/98

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL47

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08998S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 67.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19000		*	P
7440-36-0	Antimony	1.4	U	N	P
7440-38-2	Arsenic	3.7		N	P
7440-39-3	Barium	124			P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	0.62	B		P
7440-70-2	Calcium	21800		*E	P
7440-47-3	Chromium	20.7		*E	P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	13.6			P
7439-89-6	Iron	20300		*	P
7439-92-1	Lead	13.0		N	P
7439-95-4	Magnesium	4330		E	P
7439-96-5	Manganese	445		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	13.9			P
7440-09-7	Potassium	4380		E	P
7782-49-2	Selenium	0.99	B		P
7440-22-4	Silver	0.96	B		P
7440-23-5	Sodium	4820			P
7440-28-0	Thallium	0.82	U		P
7440-62-2	Vanadium	29.0			P
7440-66-6	Zinc	72.6		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL48

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10120S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 65.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12700		*	P
7440-36-0	Antimony	1.4	U	N	P
7440-38-2	Arsenic	2.1	B	N	P
7440-39-3	Barium	99.4			P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	0.40	B		P
7440-70-2	Calcium	15200		*E	P
7440-47-3	Chromium	12.1		*E	P
7440-48-4	Cobalt	5.6	B		P
7440-50-8	Copper	12.6			P
7439-89-6	Iron	12500		*	P
7439-92-1	Lead	11.0		N	P
7439-95-4	Magnesium	4080		E	P
7439-96-5	Manganese	241		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	10.3	B		P
7440-09-7	Potassium	3550		E	P
7782-49-2	Selenium	0.69	U		P
7440-22-4	Silver	0.61	B		P
7440-23-5	Sodium	5050			P
7440-28-0	Thallium	0.87	U		P
7440-62-2	Vanadium	21.8			P
7440-66-6	Zinc	34.1		E	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

07/10/99

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFHL49

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 08999S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 73.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11900		*	P
7440-36-0	Antimony	1.3	U	N	P
7440-38-2	Arsenic	2.1	B	N	P
7440-39-3	Barium	83.3			P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	0.22	B		P
7440-70-2	Calcium	15500		*E	P
7440-47-3	Chromium	11.9		*E	P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	7.8			P
7439-89-6	Iron	10400		*	P
7439-92-1	Lead	9.3		N	P
7439-95-4	Magnesium	3370		E	P
7439-96-5	Manganese	202		E	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	8.6	B		P
7440-09-7	Potassium	2850		E	P
7782-49-2	Selenium	0.70	B		P
7440-22-4	Silver	0.41	B		P
7440-23-5	Sodium	1210	B		P
7440-28-0	Thallium	0.77	U		P
7440-62-2	Vanadium	18.4			P
7440-66-6	Zinc	28.7		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL50

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 09000S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 56.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14700		*	P
7440-36-0	Antimony	1.6	U	N	P
7440-38-2	Arsenic	2.5	B	N	P
7440-39-3	Barium	197			P
7440-41-7	Beryllium	0.39	B		P
7440-43-9	Cadmium	0.98	B		P
7440-70-2	Calcium	111000		*E	P
7440-47-3	Chromium	69.4		*E	P
7440-48-4	Cobalt	3.9	B		P
7440-50-8	Copper	41.1			P
7439-89-6	Iron	7500		*	P
7439-92-1	Lead	51.5		N	P
7439-95-4	Magnesium	3110		E	P
7439-96-5	Manganese	541		E	P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	14.0			P
7440-09-7	Potassium	1540	B	E	P
7782-49-2	Selenium	0.78	U		P
7440-22-4	Silver	0.30	B		P
7440-23-5	Sodium	1590	B		P
7440-28-0	Thallium	0.99	U		P
7440-62-2	Vanadium	11.6	B		P
7440-66-6	Zinc	150		E	P
	Cyanide	0.28	B		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

02/10/98

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL51

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 09001S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 78.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18400		*	P
7440-36-0	Antimony	1.2	U	N	P
7440-38-2	Arsenic	3.2		N	P
7440-39-3	Barium	181			P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	0.41	B		P
7440-70-2	Calcium	23900		*E	P
7440-47-3	Chromium	14.0		*E	P
7440-48-4	Cobalt	5.3	B		P
7440-50-8	Copper	7.7			P
7439-89-6	Iron	13100		*	P
7439-92-1	Lead	10.5		N	P
7439-95-4	Magnesium	5880		E	P
7439-96-5	Manganese	201		E	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	9.5	B		P
7440-09-7	Potassium	2540		E	P
7782-49-2	Selenium	0.56	U		P
7440-22-4	Silver	0.54	B		P
7440-23-5	Sodium	1660			P
7440-28-0	Thallium	0.71	U		P
7440-62-2	Vanadium	30.1			P
7440-66-6	Zinc	25.1		E	P
	Cyanide	0.02	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL52

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 09002S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 70.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17500		*	P
7440-36-0	Antimony	1.3	U	N	P
7440-38-2	Arsenic	1.2	B	N	P
7440-39-3	Barium	29.7	B		P
7440-41-7	Beryllium	1.0	B		P
7440-43-9	Cadmium	0.30	B		P
7440-70-2	Calcium	1590		*E	P
7440-47-3	Chromium	16.2		*E	P
7440-48-4	Cobalt	4.2	B		P
7440-50-8	Copper	9.2			P
7439-89-6	Iron	11900		*	P
7439-92-1	Lead	13.9		N	P
7439-95-4	Magnesium	4340		E	P
7439-96-5	Manganese	150		E	P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	10.0	B		P
7440-09-7	Potassium	4480		E	P
7782-49-2	Selenium	0.62	U		P
7440-22-4	Silver	0.47	B		P
7440-23-5	Sodium	5480			P
7440-28-0	Thallium	0.79	U		P
7440-62-2	Vanadium	25.1			P
7440-66-6	Zinc	33.9		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

19

07/10/95

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL54

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 09003S

Level (low/med): LOW Date Received: 12/15/97

% Solids: 75.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900		*	P
7440-36-0	Antimony	1.2	U	N	P
7440-38-2	Arsenic	3.9		N	P
7440-39-3	Barium	27.7	B		P
7440-41-7	Beryllium	0.87	B		P
7440-43-9	Cadmium	0.46	B		P
7440-70-2	Calcium	1250	B	*E	P
7440-47-3	Chromium	16.4		*E	P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	7.3			P
7439-89-6	Iron	14700		*	P
7439-92-1	Lead	10.7		N	P
7439-95-4	Magnesium	4440		E	P
7439-96-5	Manganese	81.4		E	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	4880		E	P
7782-49-2	Selenium	0.58	U		P
7440-22-4	Silver	0.63	B		P
7440-23-5	Sodium	4060			P
7440-28-0	Thallium	0.73	U		P
7440-62-2	Vanadium	28.6			P
7440-66-6	Zinc	42.7		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL91

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10121S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 78.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4140		*	P
7440-36-0	Antimony	1.2	U	N	P
7440-38-2	Arsenic	1.0	B	N	P
7440-39-3	Barium	12.9	B		P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.11	B		P
7440-70-2	Calcium	647	B	*E	P
7440-47-3	Chromium	4.9		*E	P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	6.3			P
7439-89-6	Iron	4000		*	P
7439-92-1	Lead	4.1		N	P
7439-95-4	Magnesium	1220	B	E	P
7439-96-5	Manganese	34.5		E	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	2.7	B		P
7440-09-7	Potassium	1130	B	E	P
7782-49-2	Selenium	0.57	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	1490			P
7440-28-0	Thallium	0.72	U		P
7440-62-2	Vanadium	7.6	B		P
7440-66-6	Zinc	10.4		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

12/10/97

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFHL92

Lab Name: SENTINEL, INC. Contract: 68-D5-0167

Lab Code: SENTIN Case No.: 25919 SAS No.: SDG No.: MFHL40

Matrix (soil/water): SOIL Lab Sample ID: 10122S

Level (low/med): LOW Date Received: 12/19/97

% Solids: 63.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800		*	P
7440-36-0	Antimony	1.5	U	N	P
7440-38-2	Arsenic	3.1		N	P
7440-39-3	Barium	66.6			P
7440-41-7	Beryllium	0.90	B		P
7440-43-9	Cadmium	0.44	B		P
7440-70-2	Calcium	5290		*E	P
7440-47-3	Chromium	27.8		*E	P
7440-48-4	Cobalt	5.4	B		P
7440-50-8	Copper	15.4			P
7439-89-6	Iron	12900		*	P
7439-92-1	Lead	16.4		N	P
7439-95-4	Magnesium	4610		E	P
7439-96-5	Manganese	142		E	P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	10.2	B		P
7440-09-7	Potassium	3510		E	P
7782-49-2	Selenium	1.1	B		P
7440-22-4	Silver	0.68	B		P
7440-23-5	Sodium	4700			P
7440-28-0	Thallium	0.88	U		P
7440-62-2	Vanadium	22.1			P
7440-66-6	Zinc	43.7		E	P
	Cyanide	0.03	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

APPENDIX E

Sample Designation Group FFR12

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 1-29-1998

Subject: **Contract Laboratory Program Data Review**

From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC Marvelyn Humphrey 1/29/98

To: B. KIRCHNER, 6SF-RA

Site: MCGINNES INDUSTRIAL

Case#: 25919

SDG#: FF-R12

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

(X) Acceptable : No problems with data package.

( ) Provisional: Data is acceptable for regional use.
Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 LP/TPO
M. ElFeky, Region 6 Data Coordinator
Files (2)

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TX 77074

MEMORANDUM

DATE: January 28, 1998

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C. H. Chiang, ESAT TM, Region VI Tom Chiang 8/1/97

SUBJECT: CLP Data Review

REF: TDF # 6-8106A ESAT # O-1878
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25919
SDG # FFR12
Site McGinnes Industrial

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

The following contractually non-compliant item was detected by the hard copy review and confirmed by the CCS screening report.

The analysis of VOA sample FF-R12 exceeded the contractual holding time limit by 15 days (OLM03.0, D-18/VOA, sec. 8.3). The data usability is not affected.

II. TECHNICAL/USABILITY ASSESSMENT OF THE DATA PACKAGE

A total of 1,125 results were reviewed for this data package. The data package is technically acceptable.

00002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25919
LABORATORY CLAYTN
CONTRACT# 68-D5-0005
SDG# FFR12
SOW# RAS SOW OLM03.2

ACCT# 8FAXJN25 SF# FAXUZZ

SITE McGinnes Industrial
NO. OF SAMPLES 9
MATRIX soil
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Y.M. Liu & M. Fertitta
COMPLETION DATE January 28, 1998

SAMPLE NO.					
	FF-R12	FF-R20	FF-R64		
	FF-R15	FF-R21			
	FF-R16	FF-R26			
	FF-R17	FF-R63			

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	O	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	M	O	O
4. BLANKS	O	O	O
5. SMC/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	O	O
7. OTHER QC	O	O	O
8. INTERNAL STANDARDS	O	O	N/A
9. COMPOUND ID/QUANTITATION	O	O	O
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	M	O	O

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS:

AREA OF CONCERN: Acetone failed the technical %RSD and %D calibration criteria.

NOTABLE PERFORMANCE: The data package was two days early.

00003

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 25919 **SDG** FFR12 **SITE** McGinnes Industrial **LAB** CLAYTN

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	1	8	
BNA	9		
PEST	9		

COMMENTS: The case consisted of 9 soil samples for complete RAS organic analysis. The OTR/COC Records designated sample FF-R20 for MS/MSD analysis and sample FF-R65 (reported with SDG FFR48) as a rinsate. The laboratory analyzed the VOA and BNA soil samples following the low level methods.

The data package arrived 2 days early for the 35-day contractual turnaround time. The laboratory used a one gram aliquot for VOA sample FF-R63 analysis because of matrix interference.

The only TCL analytes reported above the CRQL's were methylene chloride and acetone in eight samples. Except for acetone in samples FF-R21 and FF-R26, these sample concentrations were due to laboratory contamination.

Data are provisional for 8 VOA samples because of problems with calibrations. The technical usability of all reported sample results is appropriately indicated by ESAT's final data qualifiers in the Data Summary Tables. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the audit results were recorded in the Evidence Inventory Checklist.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. All samples met the contractual holding time criteria except for the analysis of VOA sample FF-R12 which exceeded the contractual holding time limit by 15 days. The technical holding time criteria have not been established for soil samples. According to Region 6 guidelines, data qualification was not necessary because no VOA target analytes were detected above the CRQL's in this sample.

CASE 25919 **SDG** FFR12 **SITE** McGinnes Industrial **LAB** CLAYTN

2. Tuning/Performance: Acceptable. The BFB and DFTPP analyses met the GC/MS tuning criteria. The Pest/PCB analyses met the performance guidelines. Several pesticides had overlapping retention time windows. However, the reviewer verified that the sample result usability was not affected.

3. Calibrations: Provisional. All target analytes met the contractual calibration criteria. The reviewer qualified the acetone concentrations as estimated in the following samples because of the technical %RSD and %D deficiencies: FF-R15, FF-R16, FF-R17, FF-R20, FF-R21, FF-R26, FF-R63, and FF-R64.

4. Blanks: Acceptable. The method, storage, and instrument blanks met contractual requirements.

The Pest/PCB method and instrument blanks were free of contamination. The method and storage blanks for VOA and BNA analyses contained bromomethane, methylene chloride, acetone, carbon disulfide, and bis(2-ethylhexyl)phthalate below the contractual upper limits. Bromomethane was not detected in any of the samples. In the reviewer's opinion, the storage blank contamination was most likely introduced during the analysis rather than the storage.

Except for acetone in samples FF-R21 and FF-R26, all the field sample results for methylene chloride, acetone, carbon disulfide, and bis(2-ethylhexyl)phthalate that were "B" flagged by the laboratory should be considered as undetected (U) because the sample concentrations were less than 5X/10X the associated blank concentrations. The reviewer qualified the acetone concentrations in samples FF-R21 and FF-R26 with "B" flag to indicate high bias caused by laboratory contamination.

Field QC: The field blank sample FF-R66 and rinsate sample FF-R55 associated with the samples in this SDG were analyzed and reported with SDG FFR48 (O-1875).

Field blank sample FF-R66 contained acetone below the CRQL. Rinsate sample FF-R55 contained the following analytes at concentrations below the CRQL's: carbon disulfide, 2-butanone, phenolic compounds, and phthalate esters. VOA rinsate sample FF-R55 contained acetone at 12X the CRQL although the concentration was high biased by field blank contamination.

The reviewer cannot assess the effect of the field contamination because the field QC samples (water) and the field samples (soil) had different matrices and reporting units. Furthermore, the information associating the field samples with the rinsates was not available.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25919 **SDG** FFR12 **SITE** McGinnes Industrial **LAB** CLAYTN

5. **System Monitoring Compounds (SMC)/Surrogates:** Acceptable. The SMC and surrogate recoveries met QC criteria.

6. **Matrix Spike/Matrix Spike Duplicate:** Acceptable. The MS recovery for 2,4-dinitrotoluene and the %RPD for acenaphthene exceeded the QC limits. Since these two analytes were not detected in the unspiked sample, results were not qualified. All other MS/MSD results met the QC criteria for %recovery and precision.

7. **Other QC:** Not applicable.

8. **Internal Standards:** Acceptable. The internal standard areas and retention times were within the QC limits for all of the VOA and BNA analyses.

9. **Compound Identity/Quantitation:** Acceptable.

The only TCL analytes reported above the CRQL's were methylene chloride and acetone. Except for acetone in samples FF-R21 and FF-R26, all results for methylene chloride and acetone were due to laboratory contamination. All reported results met the compound identification and quantitation criteria.

The laboratory analyzed VOA sample FF-R63 with reduced sample size (1.0 gm). Based on the supporting data submitted on 1/27/98, which was in response to the 1/23/98 telephone communication (see Telephone Log), the reviewer has determined that the sample size reduction was necessary due to matrix interference.

10. **Performance/Completeness:** Acceptable. The data package was complete with minor deficiencies. The laboratory was contacted for correction and resubmission (see the Telephone and FAX Record Logs). The laboratory resubmission in response to the Telephone Log is placed on the top of the CSF data package. Please replace Form DC-2 and insert pages 1209A and 1220-1222 into the CSF data package.

11. **Overall Assessment:** Data are acceptable for 1 VOA, all BNA, and all Pest/PCB samples.

VOA The acetone results for the following samples are provisional because of problems with calibrations: FF-R15, FF-R16, FF-R17, FF-R20, FF-R21, FF-R26, FF-R63, and FF-R64.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R12	FF-R15	FF-R16	FF-R17	FF-R20	FF-R21	FF-R26
Chloromethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Bromomethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Vinyl chloride	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Chloroethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Methylene chloride	16 U	150 U	54 U	76 U	42 U	45 U	46 U
Acetone	16 U	400 UJ	23 UJ	91 UJ	100 UJ	210 BJ	220 BJ
Carbon disulfide	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,1-Dichloroethene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,1-Dichloroethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,2-Dichloroethene (total)	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Chloroform	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,2-Dichloroethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
2-Butanone	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,1,1-Trichloroethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Carbon tetrachloride	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Bromodichloromethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,2-Dichloropropane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
cis-1,3-Dichloropropene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Trichloroethene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Dibromochloromethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,1,2-Trichloroethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Benzene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
trans-1,3-Dichloropropene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Bromoform	16 U	42 U	13 U	16 U	14 U	14 U	15 U
4-Methyl-2-pentanone	16 U	42 U	13 U	16 U	14 U	14 U	15 U
2-Hexanone	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Tetrachloroethene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
1,1,2,2-Tetrachloroethane	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Toluene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Chlorobenzene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Ethylbenzene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Styrene	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Xylenes (total)	16 U	42 U	13 U	16 U	14 U	14 U	15 U
Sample wt (g):	5.0	5.0	5.0	5.0	5.0	5.0	5.0
%Moisture:	39	76	23	37	29	30	34
Dilution Factor:	1	1	1	1	1	1	1
Level:	Low	Low	Low	Low	Low	Low	Low
Number of TIC's:	4	5	4	5	2	3	4

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R63	FF-R64					
Chloromethane	69 U	14 U					
Bromomethane	69 U	14 U					
Vinyl chloride	69 U	14 U					
Chloroethane	69 U	14 U					
Methylene chloride	270 U	54 U					
Acetone	92 UJ	22 UJ					
Carbon disulfide	69 U	14 U					
1,1-Dichloroethene	69 U	14 U					
1,1-Dichloroethane	69 U	14 U					
1,2-Dichloroethene (total)	69 U	14 U					
Chloroform	69 U	14 U					
1,2-Dichloroethane	69 U	14 U					
2-Butanone	69 U	14 U					
1,1,1-Trichloroethane	69 U	14 U					
Carbon tetrachloride	69 U	14 U					
Bromodichloromethane	69 U	14 U					
1,2-Dichloropropane	69 U	14 U					
cis-1,3-Dichloropropene	69 U	14 U					
Trichloroethene	69 U	14 U					
Dibromochloromethane	69 U	14 U					
1,1,2-Trichloroethane	69 U	14 U					
Benzene	69 U	14 U					
trans-1,3-Dichloropropene	69 U	14 U					
Bromoform	69 U	14 U					
4-Methyl-2-pentanone	69 U	14 U					
2-Hexanone	69 U	14 U					
Tetrachloroethene	69 U	14 U					
1,1,2,2-Tetrachloroethane	69 U	14 U					
Toluene	69 U	14 U					
Chlorobenzene	69 U	14 U					
Ethylbenzene	69 U	14 U					
Styrene	69 U	14 U					
Xylenes (total)	69 U	14 U					
Sample wt (g):	1.0	5.0					
%Moisture:	28	30					
Dilution Factor:	1	1					
Level:	Low	Low					
Number of TIC's:	5	3					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R12	FF-R15	FF-R16	FF-R17	FF-R20	FF-R21	FF-R26
Phenol	28 J	450 U	450 U	480 U	480 U	500 U	490 U
bis(2-Chloroethyl)ether	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2-Chlorophenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
1,3-Dichlorobenzene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
1,4-Dichlorobenzene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
1,2-Dichlorobenzene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2-Methylphenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,2'-Oxybis(1-chloropropane)	520 U	450 U	450 U	480 U	480 U	500 U	490 U
4-Methylphenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
N-Nitroso-di-n-propylamine	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Hexachloroethane	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Nitrobenzene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Isophorone	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2-Nitrophenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,4-Dimethylphenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
bis(2-Chloroethoxy)methane	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,4-Dichlorophenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
1,2,4-Trichlorobenzene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Naphthalene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
4-Chloroaniline	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Hexachlorobutadiene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
4-Chloro-3-methylphenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2-Methylnaphthalene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Hexachlorocyclopentadiene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,4,6-Trichlorophenol	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,4,5-Trichlorophenol	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
2-Chloronaphthalene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2-Nitroaniline	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
Dimethylphthalate	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Acenaphthylene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,6-Dinitrotoluene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
3-Nitroaniline	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
Acenaphthene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,4-Dinitrophenol	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
4-Nitrophenol	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
Dibenzofuran	520 U	450 U	450 U	480 U	480 U	500 U	490 U
2,4-Dinitrotoluene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Diethylphthalate	520 U	450 U	450 U	480 U	480 U	500 U	25 J
4-Chlorophenyl-phenylether	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Fluorene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
4-Nitroaniline	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
4,6-Dinitro-2-methylphenol	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
N-Nitrosodiphenylamine	520 U	450 U	450 U	480 U	480 U	500 U	490 U
4-Bromophenyl-phenylether	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Hexachlorobenzene	520 U	450 U	450 U	480 U	480 U	500 U	490 U

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R12	FF-R15	FF-R16	FF-R17	FF-R20	FF-R21	FF-R26
Pentachlorophenol	1300 U	1100 U	1100 U	1200 U	1200 U	1200 U	1200 U
Phenanthrene	520 U	450 U	450 U	80 J	480 U	500 U	490 U
Anthracene	520 U	450 U	450 U	40 J	480 U	500 U	490 U
Carbazole	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Di-n-butylphthalate	520 U	450 U	450 U	480 U	480 U	500 U	37 J
Fluoranthene	520 U	450 U	450 U	160 J	480 U	500 U	490 U
Pyrene	520 U	450 U	450 U	250 J	480 U	500 U	490 U
Butylbenzylphthalate	520 U	450 U	450 U	480 U	480 U	500 U	490 U
3,3'-Dichlorobenzidine	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Benzo(a)anthracene	520 U	450 U	450 U	68 J	480 U	500 U	490 U
Chrysene	520 U	450 U	450 U	96 J	480 U	500 U	490 U
bis(2-Ethylhexyl)phthalate	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Di-n-octylphthalate	520 U	450 U	450 U	480 U	480 U	500 U	70 J
Benzo(b)fluoranthene	520 U	450 U	450 U	120 J	480 U	500 U	490 U
Benzo(k)fluoranthene	520 U	450 U	450 U	83 J	480 U	500 U	490 U
Benzo(a)pyrene	520 U	450 U	450 U	110 J	480 U	500 U	490 U
Indeno(1,2,3-cd)pyrene	520 U	450 U	450 U	67 J	480 U	500 U	490 U
Dibenz(a,h)anthracene	520 U	450 U	450 U	480 U	480 U	500 U	490 U
Benzo(g,h,i)perylene	520 U	450 U	450 U	130 J	480 U	500 U	490 U
Sample wt (g):	30.0	30.0	30.0	30.0	30.0	30.0	30.0
%Moisture:	37	27	27	32	31	34	33
Dilution Factor:	1	1	1	1	1	1	1
Level:	Low	Low	Low	Low	Low	Low	Low
Number of TIC's:	18	22	14	26	23	14	17

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R63	FF-R64					
Phenol	26 J	31 J					
bis(2-Chloroethyl)ether	440 U	510 U					
2-Chlorophenol	440 U	510 U					
1,3-Dichlorobenzene	440 U	510 U					
1,4-Dichlorobenzene	440 U	510 U					
1,2-Dichlorobenzene	440 U	510 U					
2-Methylphenol	440 U	510 U					
2,2'-Oxybis(1-chloropropane)	440 U	510 U					
4-Methylphenol	440 U	510 U					
N-Nitroso-di-n-propylamine	440 U	510 U					
Hexachloroethane	440 U	510 U					
Nitrobenzene	440 U	510 U					
Isophorone	440 U	510 U					
2-Nitrophenol	440 U	510 U					
2,4-Dimethylphenol	440 U	510 U					
bis(2-Chloroethoxy)methane	440 U	510 U					
2,4-Dichlorophenol	440 U	510 U					
1,2,4-Trichlorobenzene	440 U	510 U					
Naphthalene	440 U	510 U					
4-Chloroaniline	440 U	510 U					
Hexachlorobutadiene	440 U	510 U					
4-Chloro-3-methylphenol	440 U	510 U					
2-Methylnaphthalene	440 U	510 U					
Hexachlorocyclopentadiene	440 U	510 U					
2,4,6-Trichlorophenol	440 U	510 U					
2,4,5-Trichlorophenol	1100 U	1300 U					
2-Chloronaphthalene	440 U	510 U					
2-Nitroaniline	1100 U	1300 U					
Dimethylphthalate	440 U	510 U					
Acenaphthylene	440 U	510 U					
2,6-Dinitrotoluene	440 U	510 U					
3-Nitroaniline	1100 U	1300 U					
Acenaphthene	440 U	510 U					
2,4-Dinitrophenol	1100 U	1300 U					
4-Nitrophenol	1100 U	1300 U					
Dibenzofuran	440 U	510 U					
2,4-Dinitrotoluene	440 U	510 U					
Diethylphthalate	440 U	510 U					
4-Chlorophenyl-phenylether	440 U	510 U					
Fluorene	440 U	510 U					
4-Nitroaniline	1100 U	1300 U					
4,6-Dinitro-2-methylphenol	1100 U	1300 U					
N-Nitrosodiphenylamine	440 U	510 U					
4-Bromophenyl-phenylether	440 U	510 U					
Hexachlorobenzene	440 U	510 U					

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R63	FF-R64					
Pentachlorophenol	1100 U	1300 U					
Phenanthrene	440 U	510 U					
Anthracene	440 U	510 U					
Carbazole	440 U	510 U					
Di-n-butylphthalate	440 U	510 U					
Fluoranthene	440 U	510 U					
Pyrene	440 U	510 U					
Butylbenzylphthalate	440 U	510 U					
3,3'-Dichlorobenzidine	440 U	510 U					
Benzo(a)anthracene	440 U	510 U					
Chrysene	440 U	510 U					
bis(2-Ethylhexyl)phthalate	440 U	510 U					
Di-n-octylphthalate	440 U	510 U					
Benzo(b)fluoranthene	440 U	510 U					
Benzo(k)fluoranthene	440 U	510 U					
Benzo(a)pyrene	440 U	510 U					
Indeno(1,2,3-cd)pyrene	440 U	510 U					
Dibenz(a,h)anthracene	440 U	510 U					
Benzo(g,h,i)perylene	440 U	510 U					
Sample wt (g):	30.0	30.0					
%Moisture:	25	35					
Dilution Factor:	1	1					
Level:	Low	Low					
Number of TIC's:	18	20					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R12	FF-R15	FF-R16	FF-R17	FF-R20	FF-R21	FF-R26
alpha-BHC	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
beta-BHC	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
delta-BHC	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
gamma-BHC (lindane)	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
Heptachlor	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
Aldrin	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
Heptachlor epoxide	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
Endosulfan I	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
Dieldrin	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
4,4'-DDE	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
Endrin	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
Endosulfan II	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
4,4'-DDD	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
Endosulfan sulfate	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
4,4'-DDT	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
Methoxychlor	27 U	23 U	23 U	25 U	25 U	26 U	25 U
Endrin ketone	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
Endrin aldehyde	5.2 U	4.5 U	4.5 U	4.8 U	4.8 U	5 U	4.9 U
alpha-Chlordane	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
gamma-Chlordane	2.7 U	2.3 U	2.3 U	2.5 U	2.5 U	2.6 U	2.5 U
Toxaphene	270 U	230 U	230 U	250 U	250 U	260 U	250 U
Aroclor-1016	52 U	45 U	45 U	48 U	48 U	50 U	49 U
Aroclor-1221	110 U	92 U	92 U	98 U	97 U	100 U	100 U
Aroclor-1232	52 U	45 U	45 U	48 U	48 U	50 U	49 U
Aroclor-1242	52 U	45 U	45 U	48 U	48 U	50 U	49 U
Aroclor-1248	52 U	45 U	45 U	48 U	48 U	50 U	49 U
Aroclor-1254	52 U	45 U	45 U	48 U	48 U	50 U	49 U
Aroclor-1260	52 U	45 U	45 U	48 U	48 U	50 U	49 U
Sample wt (g):	30.0	30.0	30.0	30.0	30.0	30.0	30.0
%Moisture:	37	27	27	32	31	34	33
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR12 Reviewer: Y.M. Liu & M. Fertitta

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

PESTICIDES/PCBs		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R63		FF-R64											
alpha-BHC	2.3	U	2.6	U										
beta-BHC	2.3	U	2.6	U										
delta-BHC	2.3	U	2.6	U										
gamma-BHC (lindane)	2.3	U	2.6	U										
Heptachlor	2.3	U	2.6	U										
Aldrin	2.3	U	2.6	U										
Heptachlor epoxide	2.3	U	2.6	U										
Endosulfan I	2.3	U	2.6	U										
Dieldrin	4.4	U	5.1	U										
4,4'-DDE	4.4	U	5.1	U										
Endrin	4.4	U	5.1	U										
Endosulfan II	4.4	U	5.1	U										
4,4'-DDD	4.4	U	5.1	U										
Endosulfan sulfate	4.4	U	5.1	U										
4,4'-DDT	4.4	U	5.1	U										
Methoxychlor	23	U	26	U										
Endrin ketone	4.4	U	5.1	U										
Endrin aldehyde	4.4	U	5.1	U										
alpha-Chlordane	2.3	U	2.6	U										
gamma-Chlordane	2.3	U	2.6	U										
Toxaphene	230	U	260	U										
Aroclor-1016	44	U	51	U										
Aroclor-1221	89	U	100	U										
Aroclor-1232	44	U	51	U										
Aroclor-1242	44	U	51	U										
Aroclor-1248	44	U	51	U										
Aroclor-1254	44	U	51	U										
Aroclor-1260	44	U	51	U										
Sample wt (g):	30.0		30.0											
%Moisture:	25		35											
Dilution Factor:	1.0		1.0											

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25919 SDG No. FFR12 SDG Nos. To Follow SAS No. Date Rec 01/14/98

EPA Lab ID: CLAYTN

Lab Location: 22345 Roethel Drive Novi MI 48375

Region: 6 Audit No.: 25919/FFR12

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

Item	Description
4	The reviewer assigned a page number of 1223 for the resubmitted supporting data for sample FF-R63 analysis.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Yue-Mei Liu Yue-Mei Liu/ESAT Data Reviewer Date 01/28/98

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

In Reference to Case No(s):
25919 SDG: FFR12 (O-1878)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: January 23, 1998
Laboratory Name: CLAYTN
Lab Contact: Kelly Kolb
Region: 6
Regional Contact: Y. Mei Liu - ESAT

Call initiated by: _____Laboratory ___X___Region

In reference to data for the following sample fraction(s):

Airbill VOA

Summary of Questions/Issues Discussed:

1. VOA sample FF-R63 was analyzed using a one gram aliquot instead of the five gram aliquot. It stated in the SDG Narrative that this was because "QC limits could not be met using a five gram aliquot" (page 1b). Please provide proper evidence to support this dilution decision, such as screening data, original analysis data, analyst explanation, etc.

2. The percent moisture data reported for sample FF-R15 were not consistent between the VOA analysis (76%) and BNA/PEST analyses (27%). Please clarify.

3. Airbill (number 2423945134) was not submitted with data package. Please submit with proper pagination (as page 1209A).

Summary of Resolution:

The laboratory will make every effort to provide the information to Region 6 by 1/27/98.

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Continuation Page 2
Laboratory/Contact CLAYTN/Kelly Kolb
In Reference To Case No. 25919 **SDG No.** FFR12

Please forward the response to:

Mr. Mahmoud El-Feky
U.S. EPA Region 6 Laboratory
10625 Fallstone Road, Houston, TX 77099

If you have any questions, please contact me at (713) 988-5529.

Signature

January 23, 1998
Date

Distribution: (1) Lab Copy (2) Region Copy

00018

In Reference to Case No(s):
25919 SDG: FFR12 (O-1878)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX:	January 28, 1998
Laboratory Name:	CLAYTN
Lab Contact:	Kelly Kolb
Region:	6
Regional Contact:	Y. Mei Liu - ESAT
FAX initiated by:	_____Laboratory __X__Region

In reference to data for the following fractions:

VOA Pest/PCB

Summary of Questions/Issues:

A. VOA

1. VOA analysis for 1,2-dichloroethene: Secondary ion quantitation was performed for 1,2-dichloroethene. Please clarify as required by the OLM03.0, D-41/VOA, Section 11.2.1.7.

2. Sample FF-R63 (instrument HP-2B, 12/16/97, 5:26): Manual integration was performed for bromochloromethane, but the EICP for the manual integration was omitted in the data package. Please submit the contract-required EICP as page 120A.

B. PEST

Forms 7D & 7E: Some of the %D's reported on Forms 7D and 7E had incorrect signs. According to EQ. 9 on page D-26/PEST of OLM03.2, the %D should be a negative value when the calculated concentration is less than the nominal concentration. Please correct and resubmit the Forms 7 (pages 801 through 808).

0009

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact CLAYTN / Kelly Kolb
In Reference To Case No. 25919 **SDG:** FFR12

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-29), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 7 days** to:

Mr. Mahmoud El-Feky
U.S. EPA Region 6 Laboratory
10625 Fallstone Road, Houston, TX 77099

If you have any questions, please contact me at (713) 988-5529.

Signature

January 28, 1998
Date

Distribution: (1) Lab Copy (2) Region Copy

00020

(3)

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information	Sampler (Name)	Airbill Number
	Marshall Cedilote	2423945134

Non-Superfund Program	Sampler Signature	5. Ship To
	Marshall Cedilote	Clayton Environmental Consultants 22345 Roethel Drive Novi, MI 48375

Site Name	3. Purpose*	Early Action	Long-Term Action
MC GINNIS	Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED	[ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI	[ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

City, State	Site Spill ID	ATTN:
GALVESTON, TX		Kelly Kolb

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)	
FFR12	5	Low	Grab	5	X	X	X		6-164834-37	SE-19	12/9/97 1148	MFHL34	MAC	—	
FFR26	5	Low	Grab	5	X	X	X		6-164908-11	SE-09	12/9/97 1359	MFHL48	MAC	—	
FFR21	5	Low	Grab	5	X	X	X		6-164920-23	SE-10	12/9/97 1401	MFHL43	MAC	—	
~~FFR61~~	~~2~~	~~Low~~	~~Grab~~	~~5~~		~~X~~	~~X~~		~~6-163971-73~~	~~GW-02~~	~~12/10/97 1200~~	~~MFHL89~~	~~MAC~~	—	MAC 12/10/97
~~FFR65~~	~~4~~	~~Low~~	~~Grab~~	~~5~~		~~X~~	~~X~~		~~6-162344-46~~	~~ER-03~~	~~12/10/97 1020~~	~~MFHL93~~	~~MAC~~	R	MAC 12/10/97
FFR61	2	Low	Grab	5		X	X		6-163973	GW-02	12/10/97 1200	MFHL89	MAC	—	
FFR65	4	Low	Grab	5		X	X		6-162346	ER-03	12/10/97 1020	MFHL93	MAC	R	

00021

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
(Y)	1 of 1	FFR20 & FFR62		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

368854

(1)

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information	Sampler (Name)	Airbill Number
	Marshall Cedilote	2423945230

Non-Superfund Program	Sampler Signature	5. Ship To
	Marshall Cedilote	Clayton Environmental Consultants 22345 Roethel Drive Novi, MI 48375

Site Name	3. Purpose*	Early Action	Long-Term Action
McGinnes	Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED	[ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI	[ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

City, State	Site Spill ID	ATTN:
Galveston, TX		Kelly Kolb

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only: ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR20	5	Low	Grab	5	X	X	X		6-164980-83	SE-15	12/9/97 1126	MFHL42	MAC	—
FFR15	5	Low	Grab	5	X	X	X		6-164991-94	SE-16	12/9/97 1343	MFHL37	MAC	—
FFR16	5	Low	Grab	5	X	X	X		6-164822-25	SE-17	12/9/97 1113	MFHL38	MAC	—
FFR17	5	Low	Grab	5	X	X	X		6-164828-31	SE-18	12/9/97 1032	MFHL39	MAC	—
FFR63	5	Low	Grab	5	X	X	X		6-163932-35	SE-22	12/9/97 1303	MFHL91	MAC	—
FFR64	5	Low	Grab	5	X	X	X		6-163939-42	SE-23	12/9/97 1244	MFHL92	MAC	—

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
NO	1 of 1	FFR20		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Pogue	12/11/97 0800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

00022

00022

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR12

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-001

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8923

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 39 Date Analyzed: 1/06/98

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16.	U
74-83-9	Bromomethane	16.	U
75-01-4	Vinyl Chloride	16.	U
75-00-3	Chloroethane	16.	U
75-09-2	Methylene Chloride	6.	JB
67-64-1	Acetone	14.	JB
75-15-0	Carbon Disulfide	6.	JB
75-35-4	1,1-Dichloroethene	16.	U
75-34-3	1,1-Dichloroethane	16.	U
540-59-0	1,2-Dichloroethene (total)	16.	U
67-66-3	Chloroform	16.	U
107-06-2	1,2-Dichloroethane	16.	U
78-93-3	2-Butanone	16.	U
71-55-6	1,1,1-Trichloroethane	16.	U
56-23-5	Carbon Tetrachloride	16.	U
75-27-4	Bromodichloromethane	16.	U
78-87-5	1,2-Dichloropropane	16.	U
10061-01-5	cis-1,3-Dichloropropene	16.	U
79-01-6	Trichloroethene	16.	U
124-48-1	Dibromochloromethane	16.	U
79-00-5	1,1,2-Trichloroethane	16.	U
71-43-2	Benzene	16.	U
10061-02-6	trans-1,3-Dichloropropene	16.	U
75-25-2	Bromoform	16.	U
108-10-1	4-Methyl-2-Pentanone	16.	U
591-78-6	2-Hexanone	16.	U
127-18-4	Tetrachloroethene	16.	U
79-34-5	1,1,2,2-Tetrachloroethane	16.	U
108-88-3	Toluene	16.	U
108-90-7	Chlorobenzene	16.	U
100-41-4	Ethylbenzene	16.	U
100-42-5	Styrene	16.	U
1330-20-7	Xylene (total)	16.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR12

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-001

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8923

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 39 Date Analyzed: 1/06/98

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	10.61	11.	J
2.	541-05-9	Cyclotrisiloxane, hexamethyl	15.17	13.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	19.78	14.	JNB
4.		Unknown hydrocarbon	21.41	14.	J
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR15

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-004

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8729

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 76 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	42.	U
74-83-9	Bromomethane	42.	U
75-01-4	Vinyl Chloride	42.	U
75-00-3	Chloroethane	42.	U
75-09-2	Methylene Chloride	150.	B
67-64-1	Acetone	400.	B
75-15-0	Carbon Disulfide	20.	JB
75-35-4	1,1-Dichloroethene	42.	U
75-34-3	1,1-Dichloroethane	42.	U
540-59-0	1,2-Dichloroethene (total)	42.	U
67-66-3	Chloroform	42.	U
107-06-2	1,2-Dichloroethane	42.	U
78-93-3	2-Butanone	42.	U
71-55-6	1,1,1-Trichloroethane	42.	U
56-23-5	Carbon Tetrachloride	42.	U
75-27-4	Bromodichloromethane	42.	U
78-87-5	1,2-Dichloropropane	42.	U
10061-01-5	cis-1,3-Dichloropropene	42.	U
79-01-6	Trichloroethene	42.	U
124-48-1	Dibromochloromethane	42.	U
79-00-5	1,1,2-Trichloroethane	42.	U
71-43-2	Benzene	42.	U
10061-02-6	trans-1,3-Dichloropropene	42.	U
75-25-2	Bromoform	42.	U
108-10-1	4-Methyl-2-Pentanone	42.	U
591-78-6	2-Hexanone	42.	U
127-18-4	Tetrachloroethene	42.	U
79-34-5	1,1,2,2-Tetrachloroethane	42.	U
108-88-3	Toluene	42.	U
108-90-7	Chlorobenzene	42.	U
100-41-4	Ethylbenzene	42.	U
100-42-5	Styrene	42.	U
1330-20-7	Xylene (total)	42.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR15

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-004

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8729

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 76 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76-13-1	Ethane, 1,1,2-trichloro-1,2,	2.86	33.	JN
2.	541-05-9	Cyclotrisiloxane, hexamethyl	12.55	26.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	17.16	460.	JNB
4.		Unknown hydrocarbon	18.51	32.	J
5.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.75	170.	JNB
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR16

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-005

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8722

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 23 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	√13.	U
74-83-9	Bromomethane	13.	U
75-01-4	Vinyl Chloride	13.	U
75-00-3	Chloroethane	13.	U
75-09-2	Methylene Chloride	√54.	B
67-64-1	Acetone	23.	B
75-15-0	Carbon Disulfide	5.	JB
75-35-4	1,1-Dichloroethene	13.	U
75-34-3	1,1-Dichloroethane	13.	U
540-59-0	1,2-Dichloroethene (total)	13.	U
67-66-3	Chloroform	13.	U
107-06-2	1,2-Dichloroethane	13.	U
78-93-3	2-Butanone	13.	U
71-55-6	1,1,1-Trichloroethane	13.	U
56-23-5	Carbon Tetrachloride	13.	U
75-27-4	Bromodichloromethane	13.	U
78-87-5	1,2-Dichloropropane	13.	U
10061-01-5	cis-1,3-Dichloropropene	13.	U
79-01-6	Trichloroethene	13.	U
124-48-1	Dibromochloromethane	13.	U
79-00-5	1,1,2-Trichloroethane	13.	U
71-43-2	Benzene	13.	U
10061-02-6	trans-1,3-Dichloropropene	13.	U
75-25-2	Bromoform	13.	U
108-10-1	4-Methyl-2-Pentanone	13.	U
591-78-6	2-Hexanone	13.	U
127-18-4	Tetrachloroethene	13.	U
79-34-5	1,1,2,2-Tetrachloroethane	13.	U
108-88-3	Toluene	13.	U
108-90-7	Chlorobenzene	13.	U
100-41-4	Ethylbenzene	13.	U
100-42-5	Styrene	13.	U
1330-20-7	Xylene (total)	13.	U

CASE 25919
SDG# FFR12

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. FFR16

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-005

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8722

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 23 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76-13-1	Ethane, 1,1,2-trichloro-1,2,	2.78	11.	JN
2.	541-05-9	Cyclotrisiloxane, hexamethyl	12.48	7.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	17.07	150.	JNB
4.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.67	81.	JNB
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR17

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-006

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8734

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 37 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16.	U
74-83-9	Bromomethane	16.	U
75-01-4	Vinyl Chloride	16.	U
75-00-3	Chloroethane	16.	U
75-09-2	Methylene Chloride	76.	B
67-64-1	Acetone	91.	B
75-15-0	Carbon Disulfide	8.	JB
75-35-4	1,1-Dichloroethene	16.	U
75-34-3	1,1-Dichloroethane	16.	U
540-59-0	1,2-Dichloroethene (total)	16.	U
67-66-3	Chloroform	16.	U
107-06-2	1,2-Dichloroethane	16.	U
78-93-3	2-Butanone	16.	U
71-55-6	1,1,1-Trichloroethane	16.	U
56-23-5	Carbon Tetrachloride	16.	U
75-27-4	Bromodichloromethane	16.	U
78-87-5	1,2-Dichloropropane	16.	U
10061-01-5	cis-1,3-Dichloropropene	16.	U
79-01-6	Trichloroethene	16.	U
124-48-1	Dibromochloromethane	16.	U
79-00-5	1,1,2-Trichloroethane	16.	U
71-43-2	Benzene	16.	U
10061-02-6	trans-1,3-Dichloropropene	16.	U
75-25-2	Bromoform	16.	U
108-10-1	4-Methyl-2-Pentanone	16.	U
591-78-6	2-Hexanone	16.	U
127-18-4	Tetrachloroethene	16.	U
79-34-5	1,1,2,2-Tetrachloroethane	16.	U
108-88-3	Toluene	16.	U
108-90-7	Chlorobenzene	16.	U
100-41-4	Ethylbenzene	16.	U
100-42-5	Styrene	16.	U
1330-20-7	Xylene (total)	16.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR17

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-006

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8734

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 37 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76-13-1	Ethane, 1,1,2-trichloro-1,2,	2.83	10.	JN
2.	110-54-3	Hexane	4.13	13.	JN
3.	541-05-9	Cyclotrisiloxane, hexamethyl	12.54	10.	JNB
4.	556-67-2	Cyclotetrasiloxane, octameth	17.15	570.	JNB
5.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.73	150.	JNB
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8730

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 29 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	42.	B
67-64-1	Acetone	100.	B
75-15-0	Carbon Disulfide	6.	JB
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR20

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8730

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 29 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76-13-1	Ethane, 1,1,2-trichloro-1,2,	2.83	22.	JN
2.	556-67-2	Cyclotetrasiloxane, octameth	17.14	47.	JNB
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR21

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-002

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8727

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 30 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	45.	B
67-64-1	Acetone	210.	B
75-15-0	Carbon Disulfide	6.	JB
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR21

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-002

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8727

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 30 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	110-54-3	Hexane	4.20	13.	JN
2.	556-67-2	Cyclotetrasiloxane, octameth	17.20	200.	JNB
3.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.77	47.	JNB
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR26

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-003

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8728

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 34 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15.	U
74-83-9	Bromomethane	15.	U
75-01-4	Vinyl Chloride	15.	U
75-00-3	Chloroethane	15.	U
75-09-2	Methylene Chloride	46.	B
67-64-1	Acetone	220.	B
75-15-0	Carbon Disulfide	7.	JB
75-35-4	1,1-Dichloroethene	15.	U
75-34-3	1,1-Dichloroethane	15.	U
540-59-0	1,2-Dichloroethene (total)	15.	U
67-66-3	Chloroform	15.	U
107-06-2	1,2-Dichloroethane	15.	U
78-93-3	2-Butanone	15.	U
71-55-6	1,1,1-Trichloroethane	15.	U
56-23-5	Carbon Tetrachloride	15.	U
75-27-4	Bromodichloromethane	15.	U
78-87-5	1,2-Dichloropropane	15.	U
10061-01-5	cis-1,3-Dichloropropene	15.	U
79-01-6	Trichloroethene	15.	U
124-48-1	Dibromochloromethane	15.	U
79-00-5	1,1,2-Trichloroethane	15.	U
71-43-2	Benzene	15.	U
10061-02-6	trans-1,3-Dichloropropene	15.	U
75-25-2	Bromoform	15.	U
108-10-1	4-Methyl-2-Pentanone	15.	U
591-78-6	2-Hexanone	15.	U
127-18-4	Tetrachloroethene	15.	U
79-34-5	1,1,2,2-Tetrachloroethane	15.	U
108-88-3	Toluene	15.	U
108-90-7	Chlorobenzene	15.	U
100-41-4	Ethylbenzene	15.	U
100-42-5	Styrene	15.	U
1330-20-7	Xylene (total)	15.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR26

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-003

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8728

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 34 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	110-54-3	Hexane	4.13	12.	JN
2.	541-05-9	Cyclotrisiloxane, hexamethyl	12.53	8.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	17.16	210.	JNB
4.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.75	120.	JNB
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR63

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-008

Sample wt/vol: 1.00 (g/ml) G Lab File ID: B8725

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 28 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	69.	U
74-83-9	Bromomethane	69.	U
75-01-4	Vinyl Chloride	69.	U
75-00-3	Chloroethane	69.	U
75-09-2	Methylene Chloride	√270.	B
67-64-1	Acetone	92.	B
75-15-0	Carbon Disulfide	33.	JB
75-35-4	1,1-Dichloroethene	69.	U
75-34-3	1,1-Dichloroethane	69.	U
540-59-0	1,2-Dichloroethene (total)	69.	U
67-66-3	Chloroform	69.	U
107-06-2	1,2-Dichloroethane	69.	U
78-93-3	2-Butanone	69.	U
71-55-6	1,1,1-Trichloroethane	69.	U
56-23-5	Carbon Tetrachloride	69.	U
75-27-4	Bromodichloromethane	69.	U
78-87-5	1,2-Dichloropropane	69.	U
10061-01-5	cis-1,3-Dichloropropene	69.	U
79-01-6	Trichloroethene	69.	U
124-48-1	Dibromochloromethane	69.	U
79-00-5	1,1,2-Trichloroethane	69.	U
71-43-2	Benzene	69.	U
10061-02-6	trans-1,3-Dichloropropene	69.	U
75-25-2	Bromoform	69.	U
108-10-1	4-Methyl-2-Pentanone	69.	U
591-78-6	2-Hexanone	69.	U
127-18-4	Tetrachloroethene	69.	U
79-34-5	1,1,2,2-Tetrachloroethane	69.	U
108-88-3	Toluene	69.	U
108-90-7	Chlorobenzene	69.	U
100-41-4	Ethylbenzene	69.	U
100-42-5	Styrene	69.	U
1330-20-7	Xylene (total)	69.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR63

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-008

Sample wt/vol: 1.00 (g/ml) G Lab File ID: B8725

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 28 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76-13-1	Ethane, 1,1,2-trichloro-1,2,	2.82	62.	JN
2.	541-05-9	Cyclotrisiloxane, hexamethyl	12.51	59.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	17.14	1300.	JNB
4.		Unknown hydrocarbon	18.46	35.	J
5.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.73	260.	JNB
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

CASE 25919
SDG NO. FFR12

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FFR64

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-009

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8726

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 30 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	54.	B
67-64-1	Acetone	22.	B
75-15-0	Carbon Disulfide	7.	JB
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR64

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-009

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8726

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 30 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76-13-1	Ethane, 1,1,2-trichloro-1,2,	2.81	13.	JN
2.	556-67-2	Cyclotetrasiloxane, octameth	17.14	120.	JNB
3.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.73	32.	JNB
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKBM

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010a1

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8718

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

% Moisture: not dec. 0 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	12.	
67-64-1	Acetone	12.	
75-15-0	Carbon Disulfide	2.	J
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKBM

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010a1

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8718

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

% Moisture: not dec. 0 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	12.44	130.	JN
2.	556-67-2	Cyclotetrasiloxane, octameth	17.08	2100.	JN
3.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.66	400.	JN
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKBT

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010a2

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8921

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

% Moisture: not dec. 0 Date Analyzed: 1/06/98

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKBT

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010a2

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8921

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

% Moisture: not dec. 0 Date Analyzed: 1/06/98

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	15.16	7.	JN
2.	556-67-2	Cyclotetrasiloxane, octameth	19.77	72.	JN
3.	3789-85-3	Benzoic acid, 2-[(trimethyls	23.46	45.	JN
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007MS

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8733

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 29 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	64.	B
67-64-1	Acetone	80.	B
75-15-0	Carbon Disulfide	6.	JB
75-35-4	1,1-Dichloroethene	69.	
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	51.	
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	53.	
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	54.	
108-90-7	Chlorobenzene	56.	
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FFR20MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007MSD

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8732

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. 29 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	42.	B
67-64-1	Acetone	150.	B
75-15-0	Carbon Disulfide	7.	JB
75-35-4	1,1-Dichloroethene	70.	
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	47.	
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	50.	
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	48.	
108-90-7	Chlorobenzene	50.	
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR12

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1697

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 37 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	28.	J
111-44-4	bis(2-Chloroethyl)ether	520.	U
95-57-8	2-Chlorophenol	520.	U
541-73-1	1,3-Dichlorobenzene	520.	U
106-46-7	1,4-Dichlorobenzene	520.	U
95-50-1	1,2-Dichlorobenzene	520.	U
95-48-7	2-Methylphenol	520.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	520.	U
106-44-5	4-Methylphenol	520.	U
621-64-7	N-Nitroso-di-n-propylamine	520.	U
67-72-1	Hexachloroethane	520.	U
98-95-3	Nitrobenzene	520.	U
78-59-1	Isophorone	520.	U
88-75-5	2-Nitrophenol	520.	U
105-67-9	2,4-Dimethylphenol	520.	U
111-91-1	bis(2-Chloroethoxy)methane	520.	U
120-83-2	2,4-Dichlorophenol	520.	U
120-82-1	1,2,4-Trichlorobenzene	520.	U
91-20-3	Naphthalene	520.	U
106-47-8	4-Chloroaniline	520.	U
87-68-3	Hexachlorobutadiene	520.	U
59-50-7	4-Chloro-3-methylphenol	520.	U
91-57-6	2-Methylnaphthalene	520.	U
77-47-4	Hexachlorocyclopentadiene	520.	U
88-06-2	2,4,6-Trichlorophenol	520.	U
95-95-4	2,4,5-Trichlorophenol	1300.	U
91-58-7	2-Chloronaphthalene	520.	U
88-74-4	2-Nitroaniline	1300.	U
131-11-3	Dimethylphthalate	520.	U
208-96-8	Acenaphthylene	520.	U
606-20-2	2,6-Dinitrotoluene	520.	U
99-09-2	3-Nitroaniline	1300.	U
83-32-9	Acenaphthene	520.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR12

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1697

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 37 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1300.	U
100-02-7	4-Nitrophenol	1300.	U
132-64-9	Dibenzofuran	520.	U
121-14-2	2,4-Dinitrotoluene	520.	U
84-66-2	Diethylphthalate	520.	U
7005-72-3	4-Chlorophenyl-phenylether	520.	U
86-73-7	Fluorene	520.	U
100-01-6	4-Nitroaniline	1300.	U
534-52-1	4,6-Dinitro-2-methylphenol	1300.	U
86-30-6	N-Nitrosodiphenylamine (1)	520.	U
101-55-3	4-Bromophenyl-phenylether	520.	U
118-74-1	Hexachlorobenzene	520.	U
87-86-5	Pentachlorophenol	1300.	U
85-01-8	Phenanthrene	520.	U
120-12-7	Anthracene	520.	U
86-74-8	Carbazole	520.	U
84-74-2	Di-n-butylphthalate	520.	U
206-44-0	Fluoranthene	520.	U
129-00-0	Pyrene	520.	U
85-68-7	Butylbenzylphthalate	520.	U
91-94-1	3,3'-Dichlorobenzidine	520.	U
56-55-3	Benzo(a)anthracene	520.	U
218-01-9	Chrysene	520.	U
117-81-7	bis(2-Ethylhexyl)phthalate	520.	U
117-84-0	Di-n-octylphthalate	520.	U
205-99-2	Benzo(b)fluoranthene	520.	U
207-08-9	Benzo(k)fluoranthene	520.	U
50-32-8	Benzo(a)pyrene	520.	U
193-39-5	Indeno(1,2,3-cd)pyrene	520.	U
53-70-3	Dibenz(a,h)anthracene	520.	U
191-24-2	Benzo(g,h,i)perylene	520.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR12

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1697

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 37 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs Found: 18

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.81	600.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.41	190.	JNB
3.		Unknown	4.93	170.	J
4.		Unknown	5.08	1600.	J
5.	930-68-7	2-Cyclohexen-1-one	5.34	160.	JNB
6.		trans-3-Hexene-2,5-dione	5.42	1800.	JB
7.		Unknown ketone	5.58	180.	J
8.		Unknown	6.31	1000.	J
9.		Unknown	6.70	250.	J
10.		Unknown	7.22	160.	J
11.		Unknown	16.28	760.	J
12.		Unknown	19.83	160.	J
13.		Unknown	21.81	260.	J
14.		Unknown	23.72	140.	J
15.		Unknown	34.51	490.	J
16.		Unknown hydrocarbon	34.79	560.	J
17.		Unknown	36.22	110.	J
18.		Unknown	38.62	130.	J
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR15

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-004

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1690

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 27 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	450.	U
111-44-4	bis(2-Chloroethyl)ether	450.	U
95-57-8	2-Chlorophenol	450.	U
541-73-1	1,3-Dichlorobenzene	450.	U
106-46-7	1,4-Dichlorobenzene	450.	U
95-50-1	1,2-Dichlorobenzene	450.	U
95-48-7	2-Methylphenol	450.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	450.	U
106-44-5	4-Methylphenol	450.	U
621-64-7	N-Nitroso-di-n-propylamine	450.	U
67-72-1	Hexachloroethane	450.	U
98-95-3	Nitrobenzene	450.	U
78-59-1	Isophorone	450.	U
88-75-5	2-Nitrophenol	450.	U
105-67-9	2,4-Dimethylphenol	450.	U
111-91-1	bis(2-Chloroethoxy)methane	450.	U
120-83-2	2,4-Dichlorophenol	450.	U
120-82-1	1,2,4-Trichlorobenzene	450.	U
91-20-3	Naphthalene	450.	U
106-47-8	4-Chloroaniline	450.	U
87-68-3	Hexachlorobutadiene	450.	U
59-50-7	4-Chloro-3-methylphenol	450.	U
91-57-6	2-Methylnaphthalene	450.	U
77-47-4	Hexachlorocyclopentadiene	450.	U
88-06-2	2,4,6-Trichlorophenol	450.	U
95-95-4	2,4,5-Trichlorophenol	1100.	U
91-58-7	2-Chloronaphthalene	450.	U
88-74-4	2-Nitroaniline	1100.	U
131-11-3	Dimethylphthalate	450.	U
208-96-8	Acenaphthylene	450.	U
606-20-2	2,6-Dinitrotoluene	450.	U
99-09-2	3-Nitroaniline	1100.	U
83-32-9	Acenaphthene	450.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR15

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-004

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1690

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 27 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100.	U
100-02-7	4-Nitrophenol	1100.	U
132-64-9	Dibenzofuran	450.	U
121-14-2	2,4-Dinitrotoluene	450.	U
84-66-2	Diethylphthalate	450.	U
7005-72-3	4-Chlorophenyl-phenylether	450.	U
86-73-7	Fluorene	450.	U
100-01-6	4-Nitroaniline	1100.	U
534-52-1	4,6-Dinitro-2-methylphenol	1100.	U
86-30-6	N-Nitrosodiphenylamine (1)	450.	U
101-55-3	4-Bromophenyl-phenylether	450.	U
118-74-1	Hexachlorobenzene	450.	U
87-86-5	Pentachlorophenol	1100.	U
85-01-8	Phenanthrene	450.	U
120-12-7	Anthracene	450.	U
86-74-8	Carbazole	450.	U
84-74-2	Di-n-butylphthalate	450.	U
206-44-0	Fluoranthene	450.	U
129-00-0	Pyrene	450.	U
85-68-7	Butylbenzylphthalate	450.	U
91-94-1	3,3'-Dichlorobenzidine	450.	U
56-55-3	Benzo(a)anthracene	450.	U
218-01-9	Chrysene	450.	U
117-81-7	bis(2-Ethylhexyl)phthalate	51.	JB
117-84-0	Di-n-octylphthalate	450.	U
205-99-2	Benzo(b)fluoranthene	450.	U
207-08-9	Benzo(k)fluoranthene	450.	U
50-32-8	Benzo(a)pyrene	450.	U
193-39-5	Indeno(1,2,3-cd)pyrene	450.	U
53-70-3	Dibenz(a,h)anthracene	450.	U
191-24-2	Benzo(g,h,i)perylene	450.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR15

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-004

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1690

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 27 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs Found: 22

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown hydrocarbon	3.73	120.	J
2.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.82	730.	JNB
3.	822-67-3	2-Cyclohexen-1-ol	4.42	200.	JNB
4.		Unknown	4.82	98.	J
5.		Unknown	4.93	190.	J
6.		Unknown	5.10	1500.	J
7.	930-68-7	2-Cyclohexen-1-one	5.35	140.	JNB
8.		trans-3-Hexene-2,5-dione	5.42	1700.	JB
9.		Unknown	6.31	670.	J
10.		Unknown	6.67	170.	J
11.		Unknown	7.23	110.	J
12.		Unknown	20.91	94.	J
13.		Unknown	21.20	92.	J
14.		Unknown	21.34	200.	J
15.		Unknown	21.51	120.	J
16.		Unknown	21.82	300.	J
17.	123-79-5	Hexanedioic acid, dioctyl es	22.92	240.	JNB
18.	28553-12-0	1,2-Benzenedicarboxylic acid	25.93	430.	JNB
19.		Unknown phthalate	26.33	220.	J
20.		Unknown phthalate	26.64	210.	J
21.		Unknown phthalate	27.17	110.	J
22.		Unknown hydrocarbon	34.79	110.	J
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR16

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-005

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1691

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 27 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	450.	U
111-44-4	bis(2-Chloroethyl)ether	450.	U
95-57-8	2-Chlorophenol	450.	U
541-73-1	1,3-Dichlorobenzene	450.	U
106-46-7	1,4-Dichlorobenzene	450.	U
95-50-1	1,2-Dichlorobenzene	450.	U
95-48-7	2-Methylphenol	450.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	450.	U
106-44-5	4-Methylphenol	450.	U
621-64-7	N-Nitroso-di-n-propylamine	450.	U
67-72-1	Hexachloroethane	450.	U
98-95-3	Nitrobenzene	450.	U
78-59-1	Isophorone	450.	U
88-75-5	2-Nitrophenol	450.	U
105-67-9	2,4-Dimethylphenol	450.	U
111-91-1	bis(2-Chloroethoxy)methane	450.	U
120-83-2	2,4-Dichlorophenol	450.	U
120-82-1	1,2,4-Trichlorobenzene	450.	U
91-20-3	Naphthalene	450.	U
106-47-8	4-Chloroaniline	450.	U
87-68-3	Hexachlorobutadiene	450.	U
59-50-7	4-Chloro-3-methylphenol	450.	U
91-57-6	2-Methylnaphthalene	450.	U
77-47-4	Hexachlorocyclopentadiene	450.	U
88-06-2	2,4,6-Trichlorophenol	450.	U
95-95-4	2,4,5-Trichlorophenol	1100.	U
91-58-7	2-Chloronaphthalene	450.	U
88-74-4	2-Nitroaniline	1100.	U
131-11-3	Dimethylphthalate	450.	U
208-96-8	Acenaphthylene	450.	U
606-20-2	2,6-Dinitrotoluene	450.	U
99-09-2	3-Nitroaniline	1100.	U
83-32-9	Acenaphthene	450.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR16

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-005

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1691

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 27 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100.	U
100-02-7	4-Nitrophenol	1100.	U
132-64-9	Dibenzofuran	450.	U
121-14-2	2,4-Dinitrotoluene	450.	U
84-66-2	Diethylphthalate	450.	U
7005-72-3	4-Chlorophenyl-phenylether	450.	U
86-73-7	Fluorene	450.	U
100-01-6	4-Nitroaniline	1100.	U
534-52-1	4,6-Dinitro-2-methylphenol	1100.	U
86-30-6	N-Nitrosodiphenylamine (1)	450.	U
101-55-3	4-Bromophenyl-phenylether	450.	U
118-74-1	Hexachlorobenzene	450.	U
87-86-5	Pentachlorophenol	1100.	U
85-01-8	Phenanthrene	450.	U
120-12-7	Anthracene	450.	U
86-74-8	Carbazole	450.	U
84-74-2	Di-n-butylphthalate	450.	U
206-44-0	Fluoranthene	450.	U
129-00-0	Pyrene	450.	U
85-68-7	Butylbenzylphthalate	450.	U
91-94-1	3,3'-Dichlorobenzidine	450.	U
56-55-3	Benzo(a)anthracene	450.	U
218-01-9	Chrysene	450.	U
117-81-7	bis(2-Ethylhexyl)phthalate	64.	JB
117-84-0	Di-n-octylphthalate	450.	U
205-99-2	Benzo(b)fluoranthene	450.	U
207-08-9	Benzo(k)fluoranthene	450.	U
50-32-8	Benzo(a)pyrene	450.	U
193-39-5	Indeno(1,2,3-cd)pyrene	450.	U
53-70-3	Dibenz(a,h)anthracene	450.	U
191-24-2	Benzo(g,h,i)perylene	450.	U

(1) - Cannot be separated from Diphenylamine

CASE 25919
SDG# FFR12

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FFR16

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-005

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1691

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 27 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

Number TICs Found: 14 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.83	470.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.43	130.	JNB
3.		Unknown	4.93	110.	J
4.		Unknown	5.09	930.	J
5.		trans-3-Hexene-2,5-dione	5.41	1100.	JB
6.		Unknown ketone	5.58	98.	J
7.		Unknown	6.31	560.	J
8.		Unknown	21.34	140.	J
9.		Unknown	21.51	100.	J
10.		Unknown	21.81	190.	J
11.		Unknown acid ester	22.92	220.	J
12.	28553-12-0	1,2-Benzenedicarboxylic acid	25.91	320.	JNB
13.		Unknown phthalate	26.64	180.	J
14.		Unknown	34.79	180.	J
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR17

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1700

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 32 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	480.	U
111-44-4	bis(2-Chloroethyl)ether	480.	U
95-57-8	2-Chlorophenol	480.	U
541-73-1	1,3-Dichlorobenzene	480.	U
106-46-7	1,4-Dichlorobenzene	480.	U
95-50-1	1,2-Dichlorobenzene	480.	U
95-48-7	2-Methylphenol	480.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	480.	U
106-44-5	4-Methylphenol	480.	U
621-64-7	N-Nitroso-di-n-propylamine	480.	U
67-72-1	Hexachloroethane	480.	U
98-95-3	Nitrobenzene	480.	U
78-59-1	Isophorone	480.	U
88-75-5	2-Nitrophenol	480.	U
105-67-9	2,4-Dimethylphenol	480.	U
111-91-1	bis(2-Chloroethoxy)methane	480.	U
120-83-2	2,4-Dichlorophenol	480.	U
120-82-1	1,2,4-Trichlorobenzene	480.	U
91-20-3	Naphthalene	480.	U
106-47-8	4-Chloroaniline	480.	U
87-68-3	Hexachlorobutadiene	480.	U
59-50-7	4-Chloro-3-methylphenol	480.	U
91-57-6	2-Methylnaphthalene	480.	U
77-47-4	Hexachlorocyclopentadiene	480.	U
88-06-2	2,4,6-Trichlorophenol	480.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	480.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	480.	U
208-96-8	Acenaphthylene	480.	U
606-20-2	2,6-Dinitrotoluene	480.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	480.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR17

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1700

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 32 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	480.	U
121-14-2	2,4-Dinitrotoluene	480.	U
84-66-2	Diethylphthalate	480.	U
7005-72-3	4-Chlorophenyl-phenylether	480.	U
86-73-7	Fluorene	480.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	480.	U
101-55-3	4-Bromophenyl-phenylether	480.	U
118-74-1	Hexachlorobenzene	480.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	80.	J
120-12-7	Anthracene	40.	J
86-74-8	Carbazole	480.	U
84-74-2	Di-n-butylphthalate	480.	U
206-44-0	Fluoranthene	160.	J
129-00-0	Pyrene	✓ 250.	J
85-68-7	Butylbenzylphthalate	480.	U
91-94-1	3,3'-Dichlorobenzidine	480.	U
56-55-3	Benzo(a)anthracene	68.	J
218-01-9	Chrysene	96.	J
117-81-7	bis(2-Ethylhexyl)phthalate	92.	JB
117-84-0	Di-n-octylphthalate	480.	U
205-99-2	Benzo(b)fluoranthene	120.	J
207-08-9	Benzo(k)fluoranthene	83.	J
50-32-8	Benzo(a)pyrene	110.	J
193-39-5	Indeno(1,2,3-cd)pyrene	67.	J
53-70-3	Dibenz(a,h)anthracene	480.	U
191-24-2	Benzo(g,h,i)perylene	130.	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR17

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1700

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 32 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5

Number TICs Found: 26

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.81	590.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.42	210.	JNB
3.		Unknown	4.92	160.	J
4.		Unknown	5.08	1500.	J
5.	930-68-7	2-Cyclohexen-1-one	5.34	150.	JNB
6.		trans-3-Hexene-2,5-dione	5.41	1600.	JB
7.		Unknown ketone	5.57	260.	J
8.		Unknown	6.31	900.	J
9.		Unknown	7.22	130.	J
10.		Unknown	20.07	100.	J
11.		Unknown	20.77	110.	J
12.		Unknown	20.92	260.	J
13.		Unknown	21.20	120.	J
14.		Unknown	21.34	180.	J
15.	123-79-5	Hexanedioic acid, dioctyl es	22.92	250.	JNB
16.		Unknown	23.49	120.	J
17.	28553-12-0	1,2-Benzenedicarboxylic acid	25.69	110.	JNB
18.		Unknown phthalate	25.92	190.	J
19.	28553-12-0	1,2-Benzenedicarboxylic acid	26.34	140.	JNB
20.		Unknown phthalate	26.64	160.	J
21.		Unknown phthalate	27.13	120.	J
22.		Unknown	29.92	130.	J
23.		Unknown	30.50	160.	J
24.		Unknown	33.26	170.	J
25.		Unknown hydrocarbon	34.79	650.	J
26.		Unknown	37.53	240.	J
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1692

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	480.	U
111-44-4	bis(2-Chloroethyl)ether	480.	U
95-57-8	2-Chlorophenol	480.	U
541-73-1	1,3-Dichlorobenzene	480.	U
106-46-7	1,4-Dichlorobenzene	480.	U
95-50-1	1,2-Dichlorobenzene	480.	U
95-48-7	2-Methylphenol	480.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	480.	U
106-44-5	4-Methylphenol	480.	U
621-64-7	N-Nitroso-di-n-propylamine	480.	U
67-72-1	Hexachloroethane	480.	U
98-95-3	Nitrobenzene	480.	U
78-59-1	Isophorone	480.	U
88-75-5	2-Nitrophenol	480.	U
105-67-9	2,4-Dimethylphenol	480.	U
111-91-1	bis(2-Chloroethoxy)methane	480.	U
120-83-2	2,4-Dichlorophenol	480.	U
120-82-1	1,2,4-Trichlorobenzene	480.	U
91-20-3	Naphthalene	480.	U
106-47-8	4-Chloroaniline	480.	U
87-68-3	Hexachlorobutadiene	480.	U
59-50-7	4-Chloro-3-methylphenol	480.	U
91-57-6	2-Methylnaphthalene	480.	U
77-47-4	Hexachlorocyclopentadiene	480.	U
88-06-2	2,4,6-Trichlorophenol	480.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	480.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	480.	U
208-96-8	Acenaphthylene	480.	U
606-20-2	2,6-Dinitrotoluene	480.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	480.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1692

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	480.	U
121-14-2	2,4-Dinitrotoluene	480.	U
84-66-2	Diethylphthalate	480.	U
7005-72-3	4-Chlorophenyl-phenylether	480.	U
86-73-7	Fluorene	480.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	480.	U
101-55-3	4-Bromophenyl-phenylether	480.	U
118-74-1	Hexachlorobenzene	480.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	480.	U
120-12-7	Anthracene	480.	U
86-74-8	Carbazole	480.	U
84-74-2	Di-n-butylphthalate	480.	U
206-44-0	Fluoranthene	480.	U
129-00-0	Pyrene	480.	U
85-68-7	Butylbenzylphthalate	480.	U
91-94-1	3,3'-Dichlorobenzidine	480.	U
56-55-3	Benzo(a)anthracene	480.	U
218-01-9	Chrysene	480.	U
117-81-7	bis(2-Ethylhexyl)phthalate	55.	JB
117-84-0	Di-n-octylphthalate	480.	U
205-99-2	Benzo(b)fluoranthene	480.	U
207-08-9	Benzo(k)fluoranthene	480.	U
50-32-8	Benzo(a)pyrene	480.	U
193-39-5	Indeno(1,2,3-cd)pyrene	480.	U
53-70-3	Dibenz(a,h)anthracene	480.	U
191-24-2	Benzo(g,h,i)perylene	480.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR20

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-007

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1692

Level: (low/med) LOW Date Received: 12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted: 12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs Found: 23 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.83	670.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.43	210.	JNB
3.		Unknown	4.93	190.	J
4.		Unknown	5.09	1500.	J
5.	930-68-7	2-Cyclohexen-1-one	5.35	140.	JNB
6.		trans-3-Hexene-2,5-dione	5.42	1700.	JB
7.		Unknown ketone	5.58	110.	J
8.	5343-96-4	2-Butanol, 3-methyl-, acetat	6.32	790.	JN
9.		Unknown	7.23	100.	J
10.		Unknown	20.91	110.	J
11.		Unknown	21.19	120.	J
12.		Unknown	21.34	250.	J
13.		Unknown	21.51	170.	J
14.		Unknown	21.82	410.	J
15.	123-79-5	Hexanedioic acid, dioctyl es	22.92	270.	JNB
16.		Unknown	23.48	130.	J
17.	28553-12-0	1,2-Benzenedicarboxylic acid	25.70	120.	JNB
18.		Unknown phthalate	25.90	220.	J
19.	28553-12-0	1,2-Benzenedicarboxylic acid	26.32	250.	JNB
20.		Unknown phthalate	26.64	240.	J
21.		Unknown phthalate	27.17	110.	J
22.		Unknown hydrocarbon	34.79	340.	J
23.		Unknown	37.54	240.	J
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR21

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1698

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 34 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	500.	U
111-44-4	bis(2-Chloroethyl)ether	500.	U
95-57-8	2-Chlorophenol	500.	U
541-73-1	1,3-Dichlorobenzene	500.	U
106-46-7	1,4-Dichlorobenzene	500.	U
95-50-1	1,2-Dichlorobenzene	500.	U
95-48-7	2-Methylphenol	500.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	500.	U
106-44-5	4-Methylphenol	500.	U
621-64-7	N-Nitroso-di-n-propylamine	500.	U
67-72-1	Hexachloroethane	500.	U
98-95-3	Nitrobenzene	500.	U
78-59-1	Isophorone	500.	U
88-75-5	2-Nitrophenol	500.	U
105-67-9	2,4-Dimethylphenol	500.	U
111-91-1	bis(2-Chloroethoxy)methane	500.	U
120-83-2	2,4-Dichlorophenol	500.	U
120-82-1	1,2,4-Trichlorobenzene	500.	U
91-20-3	Naphthalene	500.	U
106-47-8	4-Chloroaniline	500.	U
87-68-3	Hexachlorobutadiene	500.	U
59-50-7	4-Chloro-3-methylphenol	500.	U
91-57-6	2-Methylnaphthalene	500.	U
77-47-4	Hexachlorocyclopentadiene	500.	U
88-06-2	2,4,6-Trichlorophenol	500.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	500.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	500.	U
208-96-8	Acenaphthylene	500.	U
606-20-2	2,6-Dinitrotoluene	500.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	500.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR21

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1698

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 34 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	500.	U
121-14-2	2,4-Dinitrotoluene	500.	U
84-66-2	Diethylphthalate	500.	U
7005-72-3	4-Chlorophenyl-phenylether	500.	U
86-73-7	Fluorene	500.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	500.	U
101-55-3	4-Bromophenyl-phenylether	500.	U
118-74-1	Hexachlorobenzene	500.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	500.	U
120-12-7	Anthracene	500.	U
86-74-8	Carbazole	500.	U
84-74-2	Di-n-butylphthalate	500.	U
206-44-0	Fluoranthene	500.	U
129-00-0	Pyrene	500.	U
85-68-7	Butylbenzylphthalate	500.	U
91-94-1	3,3'-Dichlorobenzidine	500.	U
56-55-3	Benzo(a)anthracene	500.	U
218-01-9	Chrysene	500.	U
117-81-7	bis(2-Ethylhexyl)phthalate	500.	U
117-84-0	Di-n-octylphthalate	500.	U
205-99-2	Benzo(b)fluoranthene	500.	U
207-08-9	Benzo(k)fluoranthene	500.	U
50-32-8	Benzo(a)pyrene	500.	U
193-39-5	Indeno(1,2,3-cd)pyrene	500.	U
53-70-3	Dibenz(a,h)anthracene	500.	U
191-24-2	Benzo(g,h,i)perylene	500.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR21

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1698

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 34 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs Found: 14

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.83	510.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.42	160.	JNB
3.		Unknown	4.93	120.	J
4.		Unknown	5.08	1100.	J
5.	930-68-7	2-Cyclohexen-1-one	5.35	110.	JNB
6.		trans-3-Hexene-2,5-dione	5.42	1100.	JB
7.		Unknown ketone	5.57	210.	J
8.		Unknown	6.31	610.	J
9.		Unknown	7.23	100.	J
10.		Unknown	16.28	220.	J
11.		Unknown	21.81	290.	J
12.		Unknown hydrocarbon	34.78	550.	J
13.		Unknown	37.53	180.	J
14.		Unknown	38.36	110.	J
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. FFR12

FFR26

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-003

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1699

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 33 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	490.	U
111-44-4	bis(2-Chloroethyl)ether	490.	U
95-57-8	2-Chlorophenol	490.	U
541-73-1	1,3-Dichlorobenzene	490.	U
106-46-7	1,4-Dichlorobenzene	490.	U
95-50-1	1,2-Dichlorobenzene	490.	U
95-48-7	2-Methylphenol	490.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	490.	U
106-44-5	4-Methylphenol	490.	U
621-64-7	N-Nitroso-di-n-propylamine	490.	U
67-72-1	Hexachloroethane	490.	U
98-95-3	Nitrobenzene	490.	U
78-59-1	Isophorone	490.	U
88-75-5	2-Nitrophenol	490.	U
105-67-9	2,4-Dimethylphenol	490.	U
111-91-1	bis(2-Chloroethoxy)methane	490.	U
120-83-2	2,4-Dichlorophenol	490.	U
120-82-1	1,2,4-Trichlorobenzene	490.	U
91-20-3	Naphthalene	490.	U
106-47-8	4-Chloroaniline	490.	U
87-68-3	Hexachlorobutadiene	490.	U
59-50-7	4-Chloro-3-methylphenol	490.	U
91-57-6	2-Methylnaphthalene	490.	U
77-47-4	Hexachlorocyclopentadiene	490.	U
88-06-2	2,4,6-Trichlorophenol	490.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	490.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	490.	U
208-96-8	Acenaphthylene	490.	U
606-20-2	2,6-Dinitrotoluene	490.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	490.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR26

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-003

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1699

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 33 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	490.	U
121-14-2	2,4-Dinitrotoluene	490.	U
84-66-2	Diethylphthalate	25.	J
7005-72-3	4-Chlorophenyl-phenylether	490.	U
86-73-7	Fluorene	490.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	490.	U
101-55-3	4-Bromophenyl-phenylether	490.	U
118-74-1	Hexachlorobenzene	490.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	490.	U
120-12-7	Anthracene	490.	U
86-74-8	Carbazole	490.	U
84-74-2	Di-n-butylphthalate	37.	J
206-44-0	Fluoranthene	490.	U
129-00-0	Pyrene	490.	U
85-68-7	Butylbenzylphthalate	490.	U
91-94-1	3,3'-Dichlorobenzidine	490.	U
56-55-3	Benzo(a)anthracene	490.	U
218-01-9	Chrysene	490.	U
117-81-7	bis(2-Ethylhexyl)phthalate	39.	JB
117-84-0	Di-n-octylphthalate	70.	J
205-99-2	Benzo(b)fluoranthene	490.	U
207-08-9	Benzo(k)fluoranthene	490.	U
50-32-8	Benzo(a)pyrene	490.	U
193-39-5	Indeno(1,2,3-cd)pyrene	490.	U
53-70-3	Dibenz(a,h)anthracene	490.	U
191-24-2	Benzo(g,h,i)perylene	490.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR26

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-003

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1699

Level: (low/med) LOW Date Received: 12/12/97

% Moisture: 33 decanted: (Y/N) N Date Extracted: 12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs Found: 17 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.82	480.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.42	180.	JNB
3.		Unknown	4.92	130.	J
4.		Unknown	5.08	1300.	J
5.	930-68-7	2-Cyclohexen-1-one	5.34	150.	JNB
6.		trans-3-Hexene-2,5-dione (C6	5.41	180.	JB
7.		Unknown ketone	5.57	1400.	J
8.		Unknown	6.31	680.	J
9.		Unknown	6.73	320.	J
10.		Unknown	7.22	130.	J
11.		Unknown	16.28	160.	J
12.		Unknown	21.82	110.	J
13.	123-79-5	Hexanedioic acid, dioctyl es	22.92	130.	JNB
14.		Unknown phthalate	26.63	200.	J
15.		Unknown hydrocarbon	34.78	570.	J
16.		Unknown	37.53	340.	J
17.		Unknown	38.61	280.	J
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. CASE 25919 SDG# FFR12

FFR63

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-008

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1695

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 25 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	26.	J
111-44-4	bis(2-Chloroethyl)ether	440.	U
95-57-8	2-Chlorophenol	440.	U
541-73-1	1,3-Dichlorobenzene	440.	U
106-46-7	1,4-Dichlorobenzene	440.	U
95-50-1	1,2-Dichlorobenzene	440.	U
95-48-7	2-Methylphenol	440.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	440.	U
106-44-5	4-Methylphenol	440.	U
621-64-7	N-Nitroso-di-n-propylamine	440.	U
67-72-1	Hexachloroethane	440.	U
98-95-3	Nitrobenzene	440.	U
78-59-1	Isophorone	440.	U
88-75-5	2-Nitrophenol	440.	U
105-67-9	2,4-Dimethylphenol	440.	U
111-91-1	bis(2-Chloroethoxy)methane	440.	U
120-83-2	2,4-Dichlorophenol	440.	U
120-82-1	1,2,4-Trichlorobenzene	440.	U
91-20-3	Naphthalene	440.	U
106-47-8	4-Chloroaniline	440.	U
87-68-3	Hexachlorobutadiene	440.	U
59-50-7	4-Chloro-3-methylphenol	440.	U
91-57-6	2-Methylnaphthalene	440.	U
77-47-4	Hexachlorocyclopentadiene	440.	U
88-06-2	2,4,6-Trichlorophenol	440.	U
95-95-4	2,4,5-Trichlorophenol	1100.	U
91-58-7	2-Chloronaphthalene	440.	U
88-74-4	2-Nitroaniline	1100.	U
131-11-3	Dimethylphthalate	440.	U
208-96-8	Acenaphthylene	440.	U
606-20-2	2,6-Dinitrotoluene	440.	U
99-09-2	3-Nitroaniline	1100.	U
83-32-9	Acenaphthene	440.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR63

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-008

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1695

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 25 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100.	U
100-02-7	4-Nitrophenol	1100.	U
132-64-9	Dibenzofuran	440.	U
121-14-2	2,4-Dinitrotoluene	440.	U
84-66-2	Diethylphthalate	440.	U
7005-72-3	4-Chlorophenyl-phenylether	440.	U
86-73-7	Fluorene	440.	U
100-01-6	4-Nitroaniline	1100.	U
534-52-1	4,6-Dinitro-2-methylphenol	1100.	U
86-30-6	N-Nitrosodiphenylamine (1)	440.	U
101-55-3	4-Bromophenyl-phenylether	440.	U
118-74-1	Hexachlorobenzene	440.	U
87-86-5	Pentachlorophenol	1100.	U
85-01-8	Phenanthrene	440.	U
120-12-7	Anthracene	440.	U
86-74-8	Carbazole	440.	U
84-74-2	Di-n-butylphthalate	440.	U
206-44-0	Fluoranthene	440.	U
129-00-0	Pyrene	440.	U
85-68-7	Butylbenzylphthalate	440.	U
91-94-1	3,3'-Dichlorobenzidine	440.	U
56-55-3	Benzo(a)anthracene	440.	U
218-01-9	Chrysene	440.	U
117-81-7	bis(2-Ethylhexyl)phthalate	37.	JB
117-84-0	Di-n-octylphthalate	440.	U
205-99-2	Benzo(b)fluoranthene	440.	U
207-08-9	Benzo(k)fluoranthene	440.	U
50-32-8	Benzo(a)pyrene	440.	U
193-39-5	Indeno(1,2,3-cd)pyrene	440.	U
53-70-3	Dibenz(a,h)anthracene	440.	U
191-24-2	Benzo(g,h,i)perylene	440.	U

(1) - Cannot be separated from Diphenylamine

1F

CASE 25919

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR63

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-008

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1695

Level: (low/med) LOW Date Received: 12/12/97

% Moisture: 25 decanted: (Y/N) N Date Extracted: 12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs Found: 18

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.82	480.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.42	160.	JNB
3.		Unknown	4.92	150.	J
4.		Unknown	5.08	1200.	J
5.	930-68-7	2-Cyclohexen-1-one	5.34	120.	JNB
6.		trans-3-Hexene-2,5-dione	5.42	1400.	JB
7.		Unknown ketone	5.58	150.	J
8.		Unknown	6.31	670.	J
9.		Unknown	7.22	92.	J
10.		Unknown	21.33	170.	J
11.		Unknown	21.52	96.	J
12.		Unknown	21.81	130.	J
13.		DI-(2-ETHYLHEXYL) ESTER OF A	22.91	180.	J
14.		Unknown	23.48	94.	J
15.		Unknown phthalate	25.90	170.	J
16.		Unknown phthalate	26.64	150.	J
17.		Unknown hydrocarbon	34.78	290.	J
18.		Unknown	37.54	140.	J
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR64

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-009

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1696

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 35 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	31.	J
111-44-4	bis(2-Chloroethyl)ether	510.	U
95-57-8	2-Chlorophenol	510.	U
541-73-1	1,3-Dichlorobenzene	510.	U
106-46-7	1,4-Dichlorobenzene	510.	U
95-50-1	1,2-Dichlorobenzene	510.	U
95-48-7	2-Methylphenol	510.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	510.	U
106-44-5	4-Methylphenol	510.	U
621-64-7	N-Nitroso-di-n-propylamine	510.	U
67-72-1	Hexachloroethane	510.	U
98-95-3	Nitrobenzene	510.	U
78-59-1	Isophorone	510.	U
88-75-5	2-Nitrophenol	510.	U
105-67-9	2,4-Dimethylphenol	510.	U
111-91-1	bis(2-Chloroethoxy)methane	510.	U
120-83-2	2,4-Dichlorophenol	510.	U
120-82-1	1,2,4-Trichlorobenzene	510.	U
91-20-3	Naphthalene	510.	U
106-47-8	4-Chloroaniline	510.	U
87-68-3	Hexachlorobutadiene	510.	U
59-50-7	4-Chloro-3-methylphenol	510.	U
91-57-6	2-Methylnaphthalene	510.	U
77-47-4	Hexachlorocyclopentadiene	510.	U
88-06-2	2,4,6-Trichlorophenol	510.	U
95-95-4	2,4,5-Trichlorophenol	1300.	U
91-58-7	2-Chloronaphthalene	510.	U
88-74-4	2-Nitroaniline	1300.	U
131-11-3	Dimethylphthalate	510.	U
208-96-8	Acenaphthylene	510.	U
606-20-2	2,6-Dinitrotoluene	510.	U
99-09-2	3-Nitroaniline	1300.	U
83-32-9	Acenaphthene	510.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR64

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-009

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1696

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 35 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1300.	U
100-02-7	4-Nitrophenol	1300.	U
132-64-9	Dibenzofuran	510.	U
121-14-2	2,4-Dinitrotoluene	510.	U
84-66-2	Diethylphthalate	510.	U
7005-72-3	4-Chlorophenyl-phenylether	510.	U
86-73-7	Fluorene	510.	U
100-01-6	4-Nitroaniline	1300.	U
534-52-1	4,6-Dinitro-2-methylphenol	1300.	U
86-30-6	N-Nitrosodiphenylamine (1)	510.	U
101-55-3	4-Bromophenyl-phenylether	510.	U
118-74-1	Hexachlorobenzene	510.	U
87-86-5	Pentachlorophenol	1300.	U
85-01-8	Phenanthrene	510.	U
120-12-7	Anthracene	510.	U
86-74-8	Carbazole	510.	U
84-74-2	Di-n-butylphthalate	510.	U
206-44-0	Fluoranthene	510.	U
129-00-0	Pyrene	510.	U
85-68-7	Butylbenzylphthalate	510.	U
91-94-1	3,3'-Dichlorobenzidine	510.	U
56-55-3	Benzo(a)anthracene	510.	U
218-01-9	Chrysene	510.	U
117-81-7	bis(2-Ethylhexyl)phthalate	59.	JB
117-84-0	Di-n-octylphthalate	510.	U
205-99-2	Benzo(b)fluoranthene	510.	U
207-08-9	Benzo(k)fluoranthene	510.	U
50-32-8	Benzo(a)pyrene	510.	U
193-39-5	Indeno(1,2,3-cd)pyrene	510.	U
53-70-3	Dibenz(a,h)anthracene	510.	U
191-24-2	Benzo(g,h,i)perylene	510.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR64

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-009

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1696

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 35 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs Found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.83	490.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.42	140.	JNB
3.		Unknown	4.92	140.	J
4.		Unknown	5.08	1100.	J
5.		trans-3-Hexene-2,5-dione	5.41	1200.	JB
6.		Unknown	6.31	670.	J
7.		Unknown	21.34	200.	J
8.		Unknown	21.51	120.	J
9.		Unknown	21.81	320.	J
10.		DI-(2-ETHYLHEXYL) ESTER OF A	22.92	260.	J
11.		Unknown	23.48	110.	J
12.		Unknown phthalate	25.69	110.	J
13.	28553-12-0	1,2-Benzenedicarboxylic acid	25.90	440.	JNB
14.	28553-12-0	1,2-Benzenedicarboxylic acid	26.33	200.	JNB
15.		Unknown phthalate	26.64	230.	J
16.		Unknown	29.91	120.	J
17.		Unknown	30.50	110.	J
18.		Unknown	34.77	1100.	J
19.		Unknown	36.34	220.	J
20.		Unknown	38.36	160.	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: SBLKS1

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1689

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

% Moisture: 0 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330.	U
111-44-4	bis(2-Chloroethyl)ether	330.	U
95-57-8	2-Chlorophenol	330.	U
541-73-1	1,3-Dichlorobenzene	330.	U
106-46-7	1,4-Dichlorobenzene	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330.	U
106-44-5	4-Methylphenol	330.	U
621-64-7	N-Nitroso-di-n-propylamine	330.	U
67-72-1	Hexachloroethane	330.	U
98-95-3	Nitrobenzene	330.	U
78-59-1	Isophorone	330.	U
88-75-5	2-Nitrophenol	330.	U
105-67-9	2,4-Dimethylphenol	330.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U
120-83-2	2,4-Dichlorophenol	330.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U
91-20-3	Naphthalene	330.	U
106-47-8	4-Chloroaniline	330.	U
87-68-3	Hexachlorobutadiene	330.	U
59-50-7	4-Chloro-3-methylphenol	330.	U
91-57-6	2-Methylnaphthalene	330.	U
77-47-4	Hexachlorocyclopentadiene	330.	U
88-06-2	2,4,6-Trichlorophenol	330.	U
95-95-4	2,4,5-Trichlorophenol	830.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	830.	U
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U
99-09-2	3-Nitroaniline	830.	U
83-32-9	Acenaphthene	330.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKS1

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1689

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

% Moisture: 0 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830.	U
100-02-7	4-Nitrophenol	830.	U
132-64-9	Dibenzofuran	330.	U
121-14-2	2,4-Dinitrotoluene	330.	U
84-66-2	Diethylphthalate	330.	U
7005-72-3	4-Chlorophenyl-phenylether	330.	U
86-73-7	Fluorene	330.	U
100-01-6	4-Nitroaniline	830.	U
534-52-1	4,6-Dinitro-2-methylphenol	830.	U
86-30-6	N-Nitrosodiphenylamine (1)	330.	U
101-55-3	4-Bromophenyl-phenylether	330.	U
118-74-1	Hexachlorobenzene	330.	U
87-86-5	Pentachlorophenol	830.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	330.	U
86-74-8	Carbazole	330.	U
84-74-2	Di-n-butylphthalate	330.	U
206-44-0	Fluoranthene	330.	U
129-00-0	Pyrene	330.	U
85-68-7	Butylbenzylphthalate	330.	U
91-94-1	3,3'-Dichlorobenzidine	330.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	57.	J
117-84-0	Di-n-octylphthalate	330.	U
205-99-2	Benzo(b)fluoranthene	330.	U
207-08-9	Benzo(k)fluoranthene	330.	U
50-32-8	Benzo(a)pyrene	330.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U
53-70-3	Dibenz(a,h)anthracene	330.	U
191-24-2	Benzo(g,h,i)perylene	330.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKS1

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-010

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1689

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

% Moisture: 0 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

Number TICs Found: 26 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown hydrocarbon	3.70	81.	J
2.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.80	490.	JN
3.	822-67-3	2-Cyclohexen-1-ol	4.41	130.	JN
4.		Unknown	4.81	100.	J
5.		Unknown	4.93	190.	J
6.		Unknown	5.09	1000.	J
7.	930-68-7	2-Cyclohexen-1-one	5.34	86.	JN
8.		trans-3-Hexene-2,5-dione	5.42	1200.	J
9.		Unknown	6.31	400.	J
10.		Unknown	7.38	71.	J
11.		Unknown	7.87	190.	J
12.		Unknown	21.20	100.	J
13.		Unknown	21.34	200.	J
14.		Unknown	21.51	120.	J
15.		Unknown	21.81	180.	J
16.		Unknown	21.92	73.	J
17.	123-79-5	Hexanedioic acid, dioctyl es	22.93	270.	JN
18.		Unknown	23.48	91.	J
19.	28553-12-0	1,2-Benzenedicarboxylic acid	25.91	240.	JN
20.	28553-12-0	1,2-Benzenedicarboxylic acid	26.35	280.	JN
21.		Unknown phthalate	26.63	240.	J
22.		Unknown phthalate	26.83	100.	J
23.		Unknown phthalate	27.02	130.	J
24.		Unknown phthalate	27.17	120.	J
25.		Unknown phthalate	27.36	88.	J
26.		Unknown phthalate	27.94	68.	J
27.					
28.					
29.					
30.					

CASE 25[illegible]
SDG# FFR12

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FFR20MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1693

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2700.	
111-44-4	bis(2-Chloroethyl)ether	480.	U
95-57-8	2-Chlorophenol	2600.	
541-73-1	1,3-Dichlorobenzene	480.	U
106-46-7	1,4-Dichlorobenzene	1700.	
95-50-1	1,2-Dichlorobenzene	480.	U
95-48-7	2-Methylphenol	480.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	480.	U
106-44-5	4-Methylphenol	480.	U
621-64-7	N-Nitroso-di-n-propylamine	1900.	
67-72-1	Hexachloroethane	480.	U
98-95-3	Nitrobenzene	480.	U
78-59-1	Isophorone	480.	U
88-75-5	2-Nitrophenol	480.	U
105-67-9	2,4-Dimethylphenol	480.	U
111-91-1	bis(2-Chloroethoxy)methane	480.	U
120-83-2	2,4-Dichlorophenol	480.	U
120-82-1	1,2,4-Trichlorobenzene	1800.	
91-20-3	Naphthalene	480.	U
106-47-8	4-Chloroaniline	480.	U
87-68-3	Hexachlorobutadiene	480.	U
59-50-7	4-Chloro-3-methylphenol	3400.	
91-57-6	2-Methylnaphthalene	480.	U
77-47-4	Hexachlorocyclopentadiene	480.	U
88-06-2	2,4,6-Trichlorophenol	480.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	480.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	480.	U
208-96-8	Acenaphthylene	480.	U
606-20-2	2,6-Dinitrotoluene	480.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	2100.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1693

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	3800.	
132-64-9	Dibenzofuran	480.	U
121-14-2	2,4-Dinitrotoluene	2400.	
84-66-2	Diethylphthalate	480.	U
7005-72-3	4-Chlorophenyl-phenylether	480.	U
86-73-7	Fluorene	480.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	480.	U
101-55-3	4-Bromophenyl-phenylether	480.	U
118-74-1	Hexachlorobenzene	480.	U
87-86-5	Pentachlorophenol	3400.	
85-01-8	Phenanthrene	480.	U
120-12-7	Anthracene	480.	U
86-74-8	Carbazole	480.	U
84-74-2	Di-n-butylphthalate	480.	U
206-44-0	Fluoranthene	480.	U
129-00-0	Pyrene	✓2300.	
85-68-7	Butylbenzylphthalate	480.	U
91-94-1	3,3'-Dichlorobenzidine	480.	U
56-55-3	Benzo(a)anthracene	480.	U
218-01-9	Chrysene	480.	U
117-81-7	bis(2-Ethylhexyl)phthalate	62.	JB
117-84-0	Di-n-octylphthalate	480.	U
205-99-2	Benzo(b)fluoranthene	480.	U
207-08-9	Benzo(k)fluoranthene	480.	U
50-32-8	Benzo(a)pyrene	480.	U
193-39-5	Indeno(1,2,3-cd)pyrene	480.	U
53-70-3	Dibenz(a,h)anthracene	480.	U
191-24-2	Benzo(g,h,i)perylene	480.	U

(1) - Cannot be separated from Diphenylamine

CASE 25919
EPA SAMPLE NO. FFR12

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FFR20MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1694

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200.	
111-44-4	bis(2-Chloroethyl)ether	480.	U
95-57-8	2-Chlorophenol	2200.	
541-73-1	1,3-Dichlorobenzene	480.	U
106-46-7	1,4-Dichlorobenzene	1500.	
95-50-1	1,2-Dichlorobenzene	480.	U
95-48-7	2-Methylphenol	480.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	480.	U
106-44-5	4-Methylphenol	480.	U
621-64-7	N-Nitroso-di-n-propylamine	1400.	
67-72-1	Hexachloroethane	480.	U
98-95-3	Nitrobenzene	480.	U
78-59-1	Isophorone	480.	U
88-75-5	2-Nitrophenol	480.	U
105-67-9	2,4-Dimethylphenol	480.	U
111-91-1	bis(2-Chloroethoxy)methane	480.	U
120-83-2	2,4-Dichlorophenol	480.	U
120-82-1	1,2,4-Trichlorobenzene	1500.	
91-20-3	Naphthalene	480.	U
106-47-8	4-Chloroaniline	480.	U
87-68-3	Hexachlorobutadiene	480.	U
59-50-7	4-Chloro-3-methylphenol	2700.	
91-57-6	2-Methylnaphthalene	480.	U
77-47-4	Hexachlorocyclopentadiene	480.	U
88-06-2	2,4,6-Trichlorophenol	480.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	480.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	480.	U
208-96-8	Acenaphthylene	480.	U
606-20-2	2,6-Dinitrotoluene	480.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	1500.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Matrix: (soil/water) SOIL Lab Sample ID:57193-007MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1694

Level: (low/med) LOW Date Received:12/12/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/16/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/23/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	3100.	
132-64-9	Dibenzofuran	480.	U
121-14-2	2,4-Dinitrotoluene	1900.	
84-66-2	Diethylphthalate	480.	U
7005-72-3	4-Chlorophenyl-phenylether	480.	U
86-73-7	Fluorene	480.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	480.	U
101-55-3	4-Bromophenyl-phenylether	480.	U
118-74-1	Hexachlorobenzene	480.	U
87-86-5	Pentachlorophenol	2900.	
85-01-8	Phenanthrene	480.	U
120-12-7	Anthracene	480.	U
86-74-8	Carbazole	480.	U
84-74-2	Di-n-butylphthalate	480.	U
206-44-0	Fluoranthene	480.	U
129-00-0	Pyrene	1900.	
85-68-7	Butylbenzylphthalate	480.	U
91-94-1	3,3'-Dichlorobenzidine	480.	U
56-55-3	Benzo(a)anthracene	480.	U
218-01-9	Chrysene	480.	U
117-81-7	bis(2-Ethylhexyl)phthalate	72.	JB
117-84-0	Di-n-octylphthalate	85.	J
205-99-2	Benzo(b)fluoranthene	480.	U
207-08-9	Benzo(k)fluoranthene	480.	U
50-32-8	Benzo(a)pyrene	480.	U
193-39-5	Indeno(1,2,3-cd)pyrene	480.	U
53-70-3	Dibenz(a,h)anthracene	480.	U
191-24-2	Benzo(g,h,i)perylene	480.	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR12

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-1

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

% Moisture: 37 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	U
319-85-7	beta-BHC	2.7	U
319-86-8	delta-BHC	2.7	U
58-89-9	gamma-BHC(Lindane)	2.7	U
76-44-8	Heptachlor	2.7	U
309-00-2	Aldrin	2.7	U
1024-57-3	Heptachlor epoxide	2.7	U
959-98-8	Endosulfan I	2.7	U
60-57-1	Dieldrin	5.2	U
72-55-9	4,4'-DDE	5.2	U
72-20-8	Endrin	5.2	U
33213-65-9	Endosulfan II	5.2	U
72-54-8	4,4'-DDD	5.2	U
1031-07-8	Endosulfan sulfate	5.2	U
50-29-3	4,4'-DDT	5.2	U
72-43-5	Methoxychlor	27.	U
53494-70-5	Endrin ketone	5.2	U
7421-93-4	Endrin aldehyde	5.2	U
5103-71-9	alpha-Chlordane	2.7	U
5103-74-2	gamma-Chlordane	2.7	U
8001-35-2	Toxaphene	270.	U
12674-11-2	Aroclor-1016	52.	U
11104-28-2	Aroclor-1221	110.	U
11141-16-5	Aroclor-1232	52.	U
53469-21-9	Aroclor-1242	52.	U
12672-29-6	Aroclor-1248	52.	U
11097-69-1	Aroclor-1254	52.	U
11096-82-5	Aroclor-1260	52.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR21

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-2

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

% Moisture: 34 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.6	U
319-85-7	beta-BHC	2.6	U
319-86-8	delta-BHC	2.6	U
58-89-9	gamma-BHC(Lindane)	2.6	U
76-44-8	Heptachlor	2.6	U
309-00-2	Aldrin	2.6	U
1024-57-3	Heptachlor epoxide	2.6	U
959-98-8	Endosulfan I	2.6	U
60-57-1	Dieldrin	5.0	U
72-55-9	4,4'-DDE	5.0	U
72-20-8	Endrin	5.0	U
33213-65-9	Endosulfan II	5.0	U
72-54-8	4,4'-DDD	5.0	U
1031-07-8	Endosulfan sulfate	5.0	U
50-29-3	4,4'-DDT	5.0	U
72-43-5	Methoxychlor	26.	U
53494-70-5	Endrin ketone	5.0	U
7421-93-4	Endrin aldehyde	5.0	U
5103-71-9	alpha-Chlordane	2.6	U
5103-74-2	gamma-Chlordane	2.6	U
8001-35-2	Toxaphene	260.	U
12674-11-2	Aroclor-1016	50.	U
11104-28-2	Aroclor-1221	100.	U
11141-16-5	Aroclor-1232	50.	U
53469-21-9	Aroclor-1242	50.	U
12672-29-6	Aroclor-1248	50.	U
11097-69-1	Aroclor-1254	50.	U
11096-82-5	Aroclor-1260	50.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR26

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-3

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

% Moisture: 33 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC(Lindane)	2.5	U
76-44-8	Heptachlor	2.5	U
309-00-2	Aldrin	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	4.9	U
72-55-9	4,4'-DDE	4.9	U
72-20-8	Endrin	4.9	U
33213-65-9	Endosulfan II	4.9	U
72-54-8	4,4'-DDD	4.9	U
1031-07-8	Endosulfan sulfate	4.9	U
50-29-3	4,4'-DDT	4.9	U
72-43-5	Methoxychlor	25.	U
53494-70-5	Endrin ketone	4.9	U
7421-93-4	Endrin aldehyde	4.9	U
5103-71-9	alpha-Chlordane	2.5	U
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	49.	U
11104-28-2	Aroclor-1221	100.	U
11141-16-5	Aroclor-1232	49.	U
53469-21-9	Aroclor-1242	49.	U
12672-29-6	Aroclor-1248	49.	U
11097-69-1	Aroclor-1254	49.	U
11096-82-5	Aroclor-1260	49.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR15

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-4

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

% Moisture: 27 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.3	U
319-85-7	beta-BHC	2.3	U
319-86-8	delta-BHC	2.3	U
58-89-9	gamma-BHC(Lindane)	2.3	U
76-44-8	Heptachlor	2.3	U
309-00-2	Aldrin	2.3	U
1024-57-3	Heptachlor epoxide	2.3	U
959-98-8	Endosulfan I	2.3	U
60-57-1	Dieldrin	4.5	U
72-55-9	4,4'-DDE	4.5	U
72-20-8	Endrin	4.5	U
33213-65-9	Endosulfan II	4.5	U
72-54-8	4,4'-DDD	4.5	U
1031-07-8	Endosulfan sulfate	4.5	U
50-29-3	4,4'-DDT	4.5	U
72-43-5	Methoxychlor	23.	U
53494-70-5	Endrin ketone	4.5	U
7421-93-4	Endrin aldehyde	4.5	U
5103-71-9	alpha-Chlordane	2.3	U
5103-74-2	gamma-Chlordane	2.3	U
8001-35-2	Toxaphene	230.	U
12674-11-2	Aroclor-1016	45.	U
11104-28-2	Aroclor-1221	92.	U
11141-16-5	Aroclor-1232	45.	U
53469-21-9	Aroclor-1242	45.	U
12672-29-6	Aroclor-1248	45.	U
11097-69-1	Aroclor-1254	45.	U
11096-82-5	Aroclor-1260	45.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR16

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-5

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

% Moisture: 27 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.3	U
319-85-7	beta-BHC	2.3	U
319-86-8	delta-BHC	2.3	U
58-89-9	gamma-BHC(Lindane)	2.3	U
76-44-8	Heptachlor	2.3	U
309-00-2	Aldrin	2.3	U
1024-57-3	Heptachlor epoxide	2.3	U
959-98-8	Endosulfan I	2.3	U
60-57-1	Dieldrin	4.5	U
72-55-9	4,4'-DDE	4.5	U
72-20-8	Endrin	4.5	U
33213-65-9	Endosulfan II	4.5	U
72-54-8	4,4'-DDD	4.5	U
1031-07-8	Endosulfan sulfate	4.5	U
50-29-3	4,4'-DDT	4.5	U
72-43-5	Methoxychlor	23.	U
53494-70-5	Endrin ketone	4.5	U
7421-93-4	Endrin aldehyde	4.5	U
5103-71-9	alpha-Chlordane	2.3	U
5103-74-2	gamma-Chlordane	2.3	U
8001-35-2	Toxaphene	230.	U
12674-11-2	Aroclor-1016	45.	U
11104-28-2	Aroclor-1221	92.	U
11141-16-5	Aroclor-1232	45.	U
53469-21-9	Aroclor-1242	45.	U
12672-29-6	Aroclor-1248	45.	U
11097-69-1	Aroclor-1254	45.	U
11096-82-5	Aroclor-1260	45.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR17

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-6

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

% Moisture: 32 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC(Lindane)	2.5	U
76-44-8	Heptachlor	2.5	U
309-00-2	Aldrin	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	4.8	U
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	4.8	U
72-43-5	Methoxychlor	25.	U
53494-70-5	Endrin ketone	4.8	U
7421-93-4	Endrin aldehyde	4.8	U
5103-71-9	alpha-Chlordane	2.5	U
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	48.	U
11104-28-2	Aroclor-1221	98.	U
11141-16-5	Aroclor-1232	48.	U
53469-21-9	Aroclor-1242	48.	U
12672-29-6	Aroclor-1248	48.	U
11097-69-1	Aroclor-1254	48.	U
11096-82-5	Aroclor-1260	48.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-7

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

% Moisture: 31 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC(Lindane)	2.5	U
76-44-8	Heptachlor	2.5	U
309-00-2	Aldrin	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	4.8	U
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	4.8	U
72-43-5	Methoxychlor	25.	U
53494-70-5	Endrin ketone	4.8	U
7421-93-4	Endrin aldehyde	4.8	U
5103-71-9	alpha-Chlordane	2.5	U
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	48.	U
11104-28-2	Aroclor-1221	97.	U
11141-16-5	Aroclor-1232	48.	U
53469-21-9	Aroclor-1242	48.	U
12672-29-6	Aroclor-1248	48.	U
11097-69-1	Aroclor-1254	48.	U
11096-82-5	Aroclor-1260	48.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR63

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-8

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

% Moisture: 25 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.3	U
319-85-7	beta-BHC	2.3	U
319-86-8	delta-BHC	2.3	U
58-89-9	gamma-BHC(Lindane)	2.3	U
76-44-8	Heptachlor	2.3	U
309-00-2	Aldrin	2.3	U
1024-57-3	Heptachlor epoxide	2.3	U
959-98-8	Endosulfan I	2.3	U
60-57-1	Dieldrin	4.4	U
72-55-9	4,4'-DDE	4.4	U
72-20-8	Endrin	4.4	U
33213-65-9	Endosulfan II	4.4	U
72-54-8	4,4'-DDD	4.4	U
1031-07-8	Endosulfan sulfate	4.4	U
50-29-3	4,4'-DDT	4.4	U
72-43-5	Methoxychlor	23.	U
53494-70-5	Endrin ketone	4.4	U
7421-93-4	Endrin aldehyde	4.4	U
5103-71-9	alpha-Chlordane	2.3	U
5103-74-2	gamma-Chlordane	2.3	U
8001-35-2	Toxaphene	230.	U
12674-11-2	Aroclor-1016	44.	U
11104-28-2	Aroclor-1221	89.	U
11141-16-5	Aroclor-1232	44.	U
53469-21-9	Aroclor-1242	44.	U
12672-29-6	Aroclor-1248	44.	U
11097-69-1	Aroclor-1254	44.	U
11096-82-5	Aroclor-1260	44.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR64

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-9

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

% Moisture: 35 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/24/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.6	U
319-85-7	beta-BHC	2.6	U
319-86-8	delta-BHC	2.6	U
58-89-9	gamma-BHC(Lindane)	2.6	U
76-44-8	Heptachlor	2.6	U
309-00-2	Aldrin	2.6	U
1024-57-3	Heptachlor epoxide	2.6	U
959-98-8	Endosulfan I	2.6	U
60-57-1	Dieldrin	5.1	U
72-55-9	4,4'-DDE	5.1	U
72-20-8	Endrin	5.1	U
33213-65-9	Endosulfan II	5.1	U
72-54-8	4,4'-DDD	5.1	U
1031-07-8	Endosulfan sulfate	5.1	U
50-29-3	4,4'-DDT	5.1	U
72-43-5	Methoxychlor	26.	U
53494-70-5	Endrin ketone	5.1	U
7421-93-4	Endrin aldehyde	5.1	U
5103-71-9	alpha-Chlordane	2.6	U
5103-74-2	gamma-Chlordane	2.6	U
8001-35-2	Toxaphene	260.	U
12674-11-2	Aroclor-1016	51.	U
11104-28-2	Aroclor-1221	100.	U
11141-16-5	Aroclor-1232	51.	U
53469-21-9	Aroclor-1242	51.	U
12672-29-6	Aroclor-1248	51.	U
11097-69-1	Aroclor-1254	51.	U
11096-82-5	Aroclor-1260	51.	U

RH 12-31-97

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

FFR20MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Lab Sample ID :57193-7MS Date(s) Analyzed:12/23/97 12/23/97

Instrument ID (1):500 Instrument ID (2):501

GC Column(1):DB-5MS ID: 0.53 (mm) GC Column(2):DB-608 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
gamma-BHC(Lindane)	1	12.37	12.32	12.42	15.	
	2	12.02	11.98	12.08	15.	0.0
Heptachlor	1	15.34	15.29	15.39	15.	
	2	13.52	13.48	13.58	16.	6.7
Aldrin	1	16.55	16.51	16.61	15.	
	2	14.80	14.76	14.86	15.	0.0
Dieldrin	1	20.52	20.46	20.60	35.	
	2	19.07	19.01	19.15	36.	2.8
Endrin	1	21.60	21.54	21.68	39.	
	2	20.71	20.65	20.79	41.	5.1
4,4'-DDT	1	24.39	24.33	24.47	36.	
	2	23.06	23.01	23.15	37.	2.8
	1					
	2					
	1					
	2					

RH 12-31-97

10A

PESTICIDE IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

FFR20MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR12

Lab Sample ID :57193-7MSD Date(s) Analyzed:12/23/97 12/23/97

Instrument ID (1):500 Instrument ID (2):501

GC Column(1):DB-5MS ID: 0.53 (mm) GC Column(2):DB-608 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
gamma-BHC(Lindane)	1	12.37	12.32	12.42	15.	
	2	12.02	11.98	12.08	15.	0.0
Heptachlor	1	15.34	15.29	15.39	15.	
	2	13.52	13.48	13.58	15.	0.0
Aldrin	1	16.56	16.51	16.61	15.	
	2	14.80	14.76	14.86	14.	7.1
Dieldrin	1	20.53	20.46	20.60	35.	
	2	19.07	19.01	19.15	35.	0.0
Endrin	1	21.61	21.54	21.68	40.	
	2	20.72	20.65	20.79	41.	2.5
4,4'-DDT	1	24.40	24.33	24.47	36.	
	2	23.06	23.01	23.15	37.	2.8
	1					
	2					
	1					
	2					

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK1S

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-10

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

% Moisture: 0 decanted: (Y/N) N Date Received: / /

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC(Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17.	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170.	U
12674-11-2	Aroclor-1016	33.	U
11104-28-2	Aroclor-1221	67.	U
11141-16-5	Aroclor-1232	33.	U
53469-21-9	Aroclor-1242	33.	U
12672-29-6	Aroclor-1248	33.	U
11097-69-1	Aroclor-1254	33.	U
11096-82-5	Aroclor-1260	33.	U

RH 12-31-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR20MSD

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR12

Matrix: (soil/water) SOIL Lab Sample ID: 57193-7MSD

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

% Moisture: 31 decanted: (Y/N) N Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/16/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/23/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC(Lindane)	15.	
76-44-8	Heptachlor	15.	
309-00-2	Aldrin	14.	
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	35.	
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	40.	
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	36.	
72-43-5	Methoxychlor	25.	U
53494-70-5	Endrin ketone	4.8	U
7421-93-4	Endrin aldehyde	4.8	U
5103-71-9	alpha-Chlordane	2.5	U
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	48.	U
11104-28-2	Aroclor-1221	97.	U
11141-16-5	Aroclor-1232	48.	U
53469-21-9	Aroclor-1242	48.	U
12672-29-6	Aroclor-1248	48.	U
11097-69-1	Aroclor-1254	48.	U
11096-82-5	Aroclor-1260	48.	U

RH 12-31-97

APPENDIX F

Sample Designation Group FFR48

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MEMORANDUM

Date: January 27,1998

Subject: Contract Laboratory Program Data Review

From: Marvelyn Humphrey, Alternate ESAT RPO, 6MD-HC

To: B. KIRCHNER, 6SF-RA

Site: MCGINNES INDUSTRIAL

Case#: 25919

SDG#: FF-R48

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

(X) Acceptable; No major problems with data package.

( ) Provisional; Data is acceptable for Regional use.
Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2146.

Attachments
cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator
Files (2)

00001

Printed on Recycled Paper

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: January 23, 1998

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C.H. Chiang, ESAT Team Manager, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-8104A, ESAT File # O-1875
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25919
SDG # FFR48
Site MCGINNES INDUSTRIAL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

Hardcopy review and the CCS report found the data package contractually compliant.

II. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE

The total number of results reviewed was 1316 for this data package. The data package is technically acceptable.

00002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25919 SITE MCGINNES INDUSTRIAL
LABORATORY CLAYTN NO. OF SAMPLES 12
CONTRACT# 68-D5-0005 MATRIX water
SDG# FFR48 REVIEWER (IF NOT ESD) ESAT
SOW# RAS OLM03.2 REVIEWER'S NAME Mike Fertitta
ACCT# 8FAXJN25 SF# FAXUZZ COMPLETION DATE January 23, 1998

SAMPLE NO.'s: FF-R48 FF-R58 FF-R62 _____ _____
FF-R54 FF-R59 FF-R65 _____ _____
FF-R55 FF-R60 FF-R66 _____ _____
FF-R57 FF-R61 FF-R67 _____ _____

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	O	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	M	O	O
4. BLANKS	O	O	O
5. SMC/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	O	O
7. OTHER QC	O	O	O
8. INTERNAL STANDARDS	O	O	N/A
9. COMPOUND ID/QUANTITATION	O	O	O
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	M	O	O

O = Data had no problems.
M = Data qualified due to major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS:

AREA OF CONCERN: Acetone failed technical %RSD and %D calibration criteria.

NOTABLE PERFORMANCE: The data package was received seven days early.

00003

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 25919 **SDG** FFR48 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	9	3	
BNA	10		
PEST	10		

COMMENTS: The case consisted of 10 water samples for complete RAS organics analysis and 2 water samples for VOA analysis only. The OTR/COC Record designated sample FF-R62 as the laboratory QC sample, samples FF-R48, FF-R55, and FF-R65 as rinsates, and samples FF-R66 and FF-R67 as field blanks. The data package was 7 days early for the 35-day contractual turnaround time.

Acetone was reported above CRQL in VOA samples FF-R57 and FF-R59 and rinsate sample FF-R55. No other TCL analytes were detected above the CRQL's in the samples. The acetone results are provisional for three VOA samples because of calibration problems. All other results are acceptable. The technical usability of all reported sample results is indicated by ESAT's final data qualifiers in the Data Summary Table. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the results were recorded in the Evidence Inventory Checklist.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. The laboratory met the contractual and technical (40 CFR Part 136) holding time criteria for all sample analyses.

2. **Tuning/Performance:** Acceptable. The BFB and DFTPP analyses met GC/MS tuning criteria for the VOA and BNA fractions. Retention time windows overlapped on Pest/PCB column DB-5MS for endosulfan II/DDD and endosulfan sulfate/DDT, and endosulfan I/α-chlordane and AR1016/AR1232/AR1242 coeluted on both columns. The reviewer verified that these problems did not affect identification of Pest/PCB target analytes above CRQL levels in the samples.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 25919 **SDG** FFR48 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

3. **Calibrations:** Provisional. Target analytes generally met contractual calibration criteria. Several analytes failed technical %RSD and/or %D calibration criteria. The reviewer qualified as estimated the acetone results for VOA samples FF-R55, FF-R57, and FF-R59. Other sample results associated with the calibration deficiencies were not qualified because the analytes were not detected above CRQL's in the samples.

4. **Blanks:** Acceptable. All method, storage, and instrument blanks met contractual QC guidelines. The Pest/PCB blanks were free of contamination. The laboratory reported acetone for the VOA storage and method blanks, but the associated spectra failed compound identification criteria. The reviewer rejected the acetone identification in these VOA blanks and contacted the laboratory for verification.

   The VOA storage blank contained methylene chloride below the CRQL, and the BNA method blank contained bis(2-ethylhexyl)-phthalate below the CRQL. The VOA samples did not contain methylene chloride, but the bis(2-ethylhexyl)phthalate results "B"-flagged by the laboratory should be considered as undetected (U) because their concentrations were less than 10X the associated method blank value.

   Field QC: Field blank samples FF-R66 and FF-R67 contained acetone and chloroform below the CRQL, respectively. The effect of the field contamination on the sample results is addressed below.

   - The acetone concentration in the rinsate sample FF-R55 is biased high (B).
   - The chloroform results for rinsate samples FF-R48 and FF-R65 should be considered undetected (U).

   These field blanks are also associated with samples in SDG FFR12. The evaluation for potential field blank effects in SDG FFR12 may be found in the data review report for that SDG.

   Rinsate samples FF-R48, FF-R55, and FF-R65 contained one or more of the following analytes at concentrations below the CRQL's: acetone, carbon disulfide, 2-butanone, phenolic compounds, phthalate esters, and PAH's. VOA rinsate sample FF-R55 contained acetone at 12X the CRQL although the concentration was high biased by field blank contamination.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 25919 **SDG** FFR48 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

4. **Blanks (continued):**

   Information on the samples associated with the rinsates was not available, so the reviewer could not assess the effect of the equipment contamination.

5. **System Monitoring Compounds (SMC's)/Surrogates:** Acceptable. All SMC and surrogate recoveries were within the QC limits.

6. **Matrix Spike/Matrix Spike Duplicate:** Acceptable. MS/MSD results met QC criteria for percent recovery and precision with a few exceptions for the BNA fraction. The MS/MSD recoveries were high for 4-nitrophenol and pentachlorophenol. The MS recoveries exceeded the QC limit for 4-chloro-3-methylphenol and 2,4-dinitrotoluene. Since these analytes were not detected in the unspiked sample, data qualification is unnecessary.

7. **Other QC:** Not Applicable.

8. **Internal Standards (IS):** Acceptable. VOA and BNA IS performance was acceptable.

9. **Compound Identity/Quantitation:** Acceptable. The only TCL analyte detected above the CRQL was acetone in VOA samples FF-R55, FF-R57, and FF-R59. All reported results met compound identification criteria with the exceptions addressed in Section 4 above.

   AR1254 was reported below the CRQL in Pest/PCB samples FF-R54 and FF-R61, and some aroclor peaks were reported as DDT below the CRQL in these samples. The reviewer raised these DDT concentrations to the CRQL and flagged them "U". The reviewer verified that aroclor peaks did not affect the detection of other target analytes at CRQL levels.

10. **Performance/Completeness:** Acceptable. The laboratory was contacted concerning some minor problems (see the FAX Record Log).

11. **Overall Assessment:** Data are acceptable for nine VOA and all BNA and Pest/PCB samples.

    VOA Acetone results were qualified as estimated for VOA samples FF-R55, FF-R57, and FF-R59 because of calibration problems.

00006

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
EPA HOUSTON LABORATORY
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

RESUBMITTED DATA REVIEW REPORT

DATE:	February 5, 1998	**CASE #:**	25919
		SDG #:	FFR48
TO:	S. Webster	**LAB:**	CLAYTN
	6SF-RA	**SITE:**	MCGINNES INDUSTRIAL
FROM:	Mike Fertitta	**TDF #:**	6-8150R
	ESAT - Region 6	**PAGE #:**	1 of 2
FILE:	O-1875	**CONTRACT #:**	68-D6-0005

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

Laboratory response--Region (received 02/02/98):

The laboratory responded to all issues. Please use the following pages of the resubmission as indicated:

- Replace the SDG Narrative in the original package with the resubmitted one (pages 1a to 1e), but modify its listing on Form DC-2 to end with page 1e instead of 1d.
- Insert additional pages 188A, 200A, 211A, 22A, 44A, 58A, 78A, and 126A into the package.
- Replace pages 651, 654 to 658, and 615 in the original package with the resubmitted ones.

This resubmission contained manually enhanced spectra that confirmed the presence of acetone in the VOA method blanks. The reviewer originally rejected these results pending this confirmation. A re-evaluation of acetone contamination from the

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA (continued):

laboratory and field resulted in the following changes to the original data review report.

- Because of laboratory contamination, the acetone results for sample FF-R57, rinsate sample FF-R48, and field blank sample FF-R66 should be considered undetected ("U"), and the acetone result for sample FF-R59 is biased high ("B").
- The acetone result for rinsate sample FF-R55 is no longer biased high by field blank contamination.

The changes are highlighted on the attached revision of the VOA Data Summary Table.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R48	FF-R54	FF-R55	FF-R57	FF-R58	FF-R59	FF-R60
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	120 J	20 UJ	10 U	76 BJ	10 U
Carbon disulfide	10 U	10 U	3 J	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	7 J	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sample Volume (mL):	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Number of TIC's:	1	1	2	1	1	0	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R61	FF-R62	FF-R65	FF-R66	FF-R67		
Chloromethane	10 U	10 U	10 U	10 U	10 U		
Bromomethane	10 U	10 U	10 U	10 U	10 U		
Vinyl chloride	10 U	10 U	10 U	10 U	10 U		
Chloroethane	10 U	10 U	10 U	10 U	10 U		
Methylene chloride	10 U	10 U	10 U	10 U	10 U		
Acetone	10 U	10 U	10 U	10 U	10 U		
Carbon disulfide	10 U	10 U	10 U	10 U	10 U		
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U		
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U		
Chloroform	10 U	10 U	10 U	10 U	3 J		
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U		
2-Butanone	10 U	10 U	10 U	10 U	10 U		
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U		
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U		
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U		
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U		
Trichloroethene	10 U	10 U	10 U	10 U	10 U		
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U		
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U		
Benzene	10 U	10 U	10 U	10 U	10 U		
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U		
Bromoform	10 U	10 U	10 U	10 U	10 U		
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U		
2-Hexanone	10 U	10 U	10 U	10 U	10 U		
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U		
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U		
Toluene	10 U	10 U	10 U	10 U	10 U		
Chlorobenzene	10 U	10 U	10 U	10 U	10 U		
Ethylbenzene	10 U	10 U	10 U	10 U	10 U		
Styrene	10 U	10 U	10 U	10 U	10 U		
Xylenes (total)	10 U	10 U	10 U	10 U	10 U		
Sample Volume (mL):	5.00	5.00	5.00	5.00	5.00		
Dilution Factor:	1.0	1.0	1.0	1.0	1.0		
Number of TIC's:	2	0	1	0	1		

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R48	FF-R54	FF-R55	FF-R57	FF-R58	FF-R59	FF-R60
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	7 J	10 U	120 BJ	20 J	10 U	76 J	10 U
Carbon disulfide	10 U	10 U	3 J	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	7 J	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sample Volume (mL):	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Number of TIC's:	1	1	2	1	1	0	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

00012

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R61	FF-R62	FF-R65	FF-R66	FF-R67		
Chloromethane	10 U	10 U	10 U	10 U	10 U		
Bromomethane	10 U	10 U	10 U	10 U	10 U		
Vinyl chloride	10 U	10 U	10 U	10 U	10 U		
Chloroethane	10 U	10 U	10 U	10 U	10 U		
Methylene chloride	10 U	10 U	10 U	10 U	10 U		
Acetone	10 U	10 U	10 U	8 J	10 U		
Carbon disulfide	10 U	10 U	10 U	10 U	10 U		
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U		
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U		
Chloroform	10 U	10 U	10 U	10 U	3 J		
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U		
2-Butanone	10 U	10 U	10 U	10 U	10 U		
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U		
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U		
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U		
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U		
Trichloroethene	10 U	10 U	10 U	10 U	10 U		
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U		
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U		
Benzene	10 U	10 U	10 U	10 U	10 U		
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U		
Bromoform	10 U	10 U	10 U	10 U	10 U		
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U		
2-Hexanone	10 U	10 U	10 U	10 U	10 U		
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U		
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U		
Toluene	10 U	10 U	10 U	10 U	10 U		
Chlorobenzene	10 U	10 U	10 U	10 U	10 U		
Ethylbenzene	10 U	10 U	10 U	10 U	10 U		
Styrene	10 U	10 U	10 U	10 U	10 U		
Xylenes (total)	10 U	10 U	10 U	10 U	10 U		
Sample Volume (mL):	5.00	5.00	5.00	5.00	5.00		
Dilution Factor:	1.0	1.0	1.0	1.0	1.0		
Number of TIC's:	2	0	1	0	1		

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R48	FF-R54	FF-R55	FF-R57	FF-R58	FF-R59	FF-R60
Phenol	10 U	10 U	4 J	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	0.5 J	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	0.6 J	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	4 J	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	2 J	10 U	10 U	10 U	0.9 J	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	2 J	10 U	10 U	1 J	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R48	FF-R54	FF-R55	FF-R57	FF-R58	FF-R59	FF-R60
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	1 J	10 U	10 U	10 U	0.8 J	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	0.9 J	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sample Volume (mL):	1000	1000	1000	1000	1000	1000	1000
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Number of TIC's:	3	18	10	23	27	21	14

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R61	FF-R62	FF-R65				
Phenol	10 U	10 U	10 U				
bis(2-Chloroethyl)ether	10 U	10 U	10 U				
2-Chlorophenol	10 U	10 U	10 U				
1,3-Dichlorobenzene	10 U	10 U	10 U				
1,4-Dichlorobenzene	10 U	10 U	10 U				
1,2-Dichlorobenzene	10 U	10 U	10 U				
2-Methylphenol	10 U	10 U	10 U				
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U				
4-Methylphenol	10 U	10 U	10 U				
N-Nitroso-di-n-propylamine	10 U	10 U	10 U				
Hexachloroethane	10 U	10 U	10 U				
Nitrobenzene	10 U	10 U	10 U				
Isophorone	10 U	10 U	10 U				
2-Nitrophenol	10 U	10 U	10 U				
2,4-Dimethylphenol	10 U	10 U	10 U				
bis(2-Chloroethoxy)methane	10 U	10 U	10 U				
2,4-Dichlorophenol	10 U	10 U	10 U				
1,2,4-Trichlorobenzene	10 U	10 U	10 U				
Naphthalene	10 U	10 U	10 U				
4-Chloroaniline	10 U	10 U	10 U				
Hexachlorobutadiene	10 U	10 U	10 U				
4-Chloro-3-methylphenol	10 U	10 U	3 J				
2-Methylnaphthalene	10 U	10 U	10 U				
Hexachlorocyclopentadiene	10 U	10 U	10 U				
2,4,6-Trichlorophenol	10 U	10 U	10 U				
2,4,5-Trichlorophenol	25 U	25 U	25 U				
2-Chloronaphthalene	10 U	10 U	10 U				
2-Nitroaniline	25 U	25 U	25 U				
Dimethylphthalate	10 U	10 U	10 U				
Acenaphthylene	10 U	10 U	10 U				
2,6-Dinitrotoluene	10 U	10 U	10 U				
3-Nitroaniline	25 U	25 U	25 U				
Acenaphthene	10 U	10 U	10 U				
2,4-Dinitrophenol	25 U	25 U	25 U				
4-Nitrophenol	25 U	25 U	25 U				
Dibenzofuran	10 U	10 U	10 U				
2,4-Dinitrotoluene	10 U	10 U	10 U				
Diethylphthalate	10 U	10 U	10 U				
4-Chlorophenyl-phenylether	10 U	10 U	10 U				
Fluorene	10 U	10 U	10 U				
4-Nitroaniline	25 U	25 U	25 U				
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U				
N-Nitrosodiphenylamine	10 U	10 U	10 U				
4-Bromophenyl-phenylether	10 U	10 U	10 U				
Hexachlorobenzene	10 U	10 U	10 U				

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R61		FF-R62		FF-R65									
Pentachlorophenol	25	U	25	U	25	U								
Phenanthrene	0.7	J	10	U	10	U								
Anthracene	10	U	10	U	10	U								
Carbazole	10	U	10	U	10	U								
Di-n-butylphthalate	10	U	10	U	10	U								
Fluoranthene	10	U	10	U	10	U								
Pyrene	10	U	10	U	10	U								
Butylbenzylphthalate	10	U	10	U	10	U								
3,3'-Dichlorobenzidine	10	U	10	U	10	U								
Benzo(a)anthracene	10	U	10	U	10	U								
Chrysene	10	U	10	U	10	U								
bis(2-Ethylhexyl)phthalate	10	U	10	U	10	U								
Di-n-octylphthalate	10	U	10	U	10	U								
Benzo(b)fluoranthene	10	U	10	U	10	U								
Benzo(k)fluoranthene	10	U	10	U	10	U								
Benzo(a)pyrene	10	U	10	U	10	U								
Indeno(1,2,3-cd)pyrene	10	U	10	U	10	U								
Dibenz(a,h)anthracene	10	U	10	U	10	U								
Benzo(g,h,i)perylene	10	U	10	U	10	U								
Sample Volume (mL):	1000		1000		1000									
Dilution Factor:	1.0		1.0		1.0									
Number of TIC's:	10		4		1									

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

PESTICIDES/PCBs		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R48		FF-R54		FF-R55		FF-R57		FF-R58		FF-R59		FF-R60	
alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
gamma-BHC (lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Dieldrin	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
4,4'-DDE	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Endrin	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Endosulfan II	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
4,4'-DDD	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Endosulfan sulfate	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
4,4'-DDT	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Methoxychlor	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Endrin ketone	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Endrin aldehyde	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Toxaphene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Aroclor-1016	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1221	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Aroclor-1232	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1242	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1248	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1254	1.0	U	0.38	J	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor-1260	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Sample Volume (mL):	1000		1000		1000		1000		1000		1000		1000	
Dilution Factor:	1.0		1.0		1.0		1.0		1.0		1.0		1.0	

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR48 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R61	FF-R62	FF-R65				
alpha-BHC	0.05 U	0.05 U	0.05 U				
beta-BHC	0.05 U	0.05 U	0.05 U				
delta-BHC	0.05 U	0.05 U	0.05 U				
gamma-BHC (lindane)	0.05 U	0.05 U	0.05 U				
Heptachlor	0.05 U	0.05 U	0.05 U				
Aldrin	0.05 U	0.05 U	0.05 U				
Heptachlor epoxide	0.05 U	0.05 U	0.05 U				
Endosulfan I	0.05 U	0.025 J	0.05 U				
Dieldrin	0.10 U	0.10 U	0.10 U				
4,4'-DDE	0.10 U	0.10 U	0.10 U				
Endrin	0.10 U	0.10 U	0.10 U				
Endosulfan II	0.10 U	0.10 U	0.10 U				
4,4'-DDD	0.10 U	0.10 U	0.10 U				
Endosulfan sulfate	0.10 U	0.10 U	0.10 U				
4,4'-DDT	0.10 U	0.10 U	0.10 U				
Methoxychlor	0.50 U	0.50 U	0.50 U				
Endrin ketone	0.10 U	0.10 U	0.10 U				
Endrin aldehyde	0.10 U	0.10 U	0.10 U				
alpha-Chlordane	0.05 U	0.021 J	0.05 U				
gamma-Chlordane	0.05 U	0.05 U	0.05 U				
Toxaphene	5.0 U	5.0 U	5.0 U				
Aroclor-1016	1.0 U	1.0 U	1.0 U				
Aroclor-1221	2.0 U	2.0 U	2.0 U				
Aroclor-1232	1.0 U	1.0 U	1.0 U				
Aroclor-1242	1.0 U	1.0 U	1.0 U				
Aroclor-1248	1.0 U	1.0 U	1.0 U				
Aroclor-1254	0.46 J	1.0 U	1.0 U				
Aroclor-1260	1.0 U	1.0 U	1.0 U				
Sample Volume (mL):	1000	1000	1000				
Dilution Factor:	1.0	1.0	1.0				

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25919 SDG No. FFR48 SDG Nos. To Follow _____ SAS No. _____ Date Rec 01/09/98

EPA Lab ID: CLAYTN

Lab Location: Novi, MI

Region: 6 Audit No.: 25919/FFR48

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Michail J Fertitta — Michael J. Fertitta/ ESAT Data Reviewer — Date 01/21/98

Audited by: _____ — _____ — Date _____

Audited by: _____ — _____ — Date _____

Signature — Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature — Printed Name/Title

DC-2___

00020

Rev. 3/97

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: January 23, 1998
Laboratory Name: CLAYTN
Lab Contact: Kelly Kolb
Region: 6
Regional Contact: Michael J. Fertitta - ESAT
FAX initiated by: ____Laboratory ___X___Region

In reference to data for the following fractions:

CSF Deliverables VOA BNA Pest/PCB

Summary of Questions/Issues:

A. CSF Deliverables

The cooler temperatures (pages 1021 to 1026) were not recorded in the SDG Narrative (OLM03.2, A-5, 4.2.1.2.3.5). Please resubmit the SDG Narrative with this information.

B. VOA

1. Blanks VBLKCV, VBLKCW, and VHBLK: The submitted spectral data for acetone did not support its identification. The reference spectrum did not exhibit the characteristic ions. The sample spectra were missing ion 43 or had ion ratios failing compound identification criteria (OLM03.2, D-37/VOA, 11.1.1.4). Please reject the acetone identification for these blanks or conduct manual spectrum enhancement to generate better reference and sample spectra to support the acetone identification.

2. The reference spectra for acetone on the following pages did not exhibit the characteristic ions. Please resubmit these pages with acceptable reference spectra.

Sample	Page
FF-R48	22
FF-R55	44
FF-R57	58
FF-R59	78
FF-R66	126

C. **BNA**

1. The BNA calibrations (pages 495, 499, 502, 506, 510, and 518) employed mass 63 instead of mass 93 as the quantitation ion for bis(2-chloroethyl)ether (OLM03.2; D-22/SVOA, 9.3.4.1 and D-64/SVOA, Table 4). Please resubmit the SDG Narrative, adding an explanation that justifies this contractual deviation.

2. The alkanes found in the samples (pages 254, 382, and 464) should have been reported by class in the SDG Narrative (OLM03.2, D-45/SVOA, 11.1.2.5.8). Please resubmit the SDG Narrative with the proper corrections.

D. **Pest/PCB**

1. Using the correct equation (OLM03.2, D-26/PEST, 9.2.4.9, EQ. 9), some of the %D's on Forms 7D and 7E should have negative values. Please correct and resubmit the Forms (pages 651 and 654 through 658).

2. The two-column quantitation for AR1254 in sample FF-R61 had a %D of 34.8% (page 670). The result should be "P"-flagged on Form 1 (page 615). Please resubmit page 615 with this correction.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

The EPA expects the laboratory to look into the above items and submit the data within 7 days to:

Attn: Mahmoud El-Feky - U.S. EPA
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2993.

Michael J. Fertitta
Signature

01/23/98
Date

Distribution: (1) Lab Copy, (2) Region Copy

#11

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25719

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	AIRBORNE EXPRESS

Regional Information	Sampler (Name)	Airbill Number
	MARSHALL CEDILOTE	242394453O

Non-Superfund Program	Sampler Signature	5. Ship To
	Marshall Cedilote	CLAYTON ENVIRONMENTAL CONSULTANTS 22345 ROETHEL DRIVE NOVI, MI 48375 ATTN: KELLY KOLB

Site Name	3. Purpose*	Early Action	Long-Term Action
MCGINNIS	Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED	[ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI	[ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

City, State	Site Spill ID
GALVESTON, TX	

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR54	2	LOW	GRAB	5		X	X		6-164963	GW-07	12/10/97 1537	MFHL82	MC	—
~~FFR48~~	~~4~~	~~LOW~~	~~GRAB~~	~~5~~		~~X~~	~~X~~		~~6-162350-52~~	~~ER-04~~	~~12/10/97 1655~~	~~MFHL76~~	~~WN~~	~~R~~
FFR48	4	LOW	GRAB	5		X	X		6-162352	ER-04	12/10/97 1655	MFHL76	WN	R

ORS 12/10/97

00024

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
(N)	1 of 1	FFR62		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Rogue	12/11/97 0800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

Original in SDG FFR12 (2)

EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information

Sampler (Name): Marshall Cedilote

Airbill Number: 2423945134

Non-Superfund Program

Sampler Signature: Marshall Cedilote

Site Name: MC GINNIS

City, State: GALVESTON, TX

Site Spill ID

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: Clayton Environmental Consultants, 22345 Roethel Drive, Novi, MI 48375

ATTN: Kelly Kolb

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR12	5	Low	Grab	5	X	X	X		6-164834-37	SE-19	12/9/97 1148	MFHL34	MAC	—
FFR26	5	Low	Grab	5	X	X	X		6-164908-11	SE-09	12/9/97 1359	MFHL48	MAC	—
FFR21	5	Low	Grab	5	X	X	X		6-164920-23	SE-10	12/9/97 1401	MFHL43	MAC	—
~~FFR61~~	~~2~~	~~Low~~	~~Grab~~	~~5~~		~~X~~	~~X~~		~~6-163971-73~~	~~GW-02~~	~~12/10/97 1200~~	~~MFHL89~~	~~MAC~~	~~—~~ MAC 12/10/97
~~FFR65~~	~~4~~	~~Low~~	~~Grab~~	~~5~~		~~X~~	~~X~~		~~6-162344-46~~	~~ER-03~~	~~12/10/97 1020~~	~~MFHL93~~	~~MAC~~	~~R~~ MAC 12/10/97
FFR61	2	Low	Grab	5		X	X		6-163973	GW-02	12/10/97 1200	MFHL89	MAC	—
FFR65	4	Low	Grab	5		X	X		6-162346	ER-03	12/10/97 1020	MFHL93	MAC	R

00025

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1	FFR20 & FFR62		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none

A21-012-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

368854

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information

Sampler (Name): Marshall Cedilote

Airbill Number: 24239446 33

Non-Superfund Program

Sampler Signature: Marshall Cedilote

5. Ship To: Clayton Environmental Consultants, 22345 Roethel Drive, Novi, MI 48375, ATTN: Kelly Kolb

Site Name: McGinnes

3. Purpose*

Lead	Early Action	Long-Term Action
[X] SF	[ ] CLEM	[ ] FS
[ ] PRP	[ ] PA	[ ] RD
[ ] ST	[ ] REM	[ ] RA
[ ] FED	[ ] RI	[ ] O&M
	[X] SI	[ ] NPLD
	[ ] ESI	

City, State: Galveston, TX

Site Spill ID

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
FFR54	2	Low	Grab	5	X				6-164961-62	GW-07	12/10/97 1537	MFHL82	MAC	

Shipment for Case Complete? (Y/N): NO

Page: 2 of 2

Sample(s) to be Used for Laboratory QC: FFR62

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Poque	12/11/97 0800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

00026

5A

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information	Sampler (Name)	Airbill Number
	Marshall Cedilote	2423944633

Non-Superfund Program	Sampler Signature	5. Ship To
	Marshall Cedilote	

Site Name	3. Purpose*	Early Action	Long-Term Action
McGinnes	Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED	[ ] CLEM, [ ] PA, [ ] REM, [X] RI, [X] SI, [ ] ESI	[ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

City, State	Site Spill ID	ATTN:
Galveston TX		

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR66	4	Low	Grab	5	X				6-164974-75	FB-01	12/4/97 0900		MAC	B
FFR67	4	Low	Grab	5	X				6-164976-77	FB-02	12/10/97 1557		MAC	B
FFR55	4	Low	Grab	5	X				6-164986-87	ER-01	12/9/97 0905	MFHL83	MAC	R
FFR65	4	Low	Grab	5	X				6-164344-45	ER-03	12/10/97 1020	MFHL93	MAC	R
FFR48	4	Low	Grab	5	X				6-162350-51	ER-04	12/10/97 1655	MFHL76	WN	R
FFR57	2	Low	Grab	5	X				6-164914-15	GW-04	12/10/97 1605	MFHL85	WN	
FFR61	2	Low	Grab	5	X				6-163971-72	GW-02	12/10/97 1200	MFHL89	MAC	
FFR62	2	Low	Grab	5	X				6-163982-983	GW-03	12/10/97 1245	MFHL90	MAC	
FFR58	2	Low	Grab	5	X				6-164934-35	GW-05	12/10/97 1607	MFHL86	WN	
FFR59	2	Low	Grab	5	X				6-164948-49	GW-06	12/10/97 1512	MFHL87	MAC	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
NO	1 of 2	FFR62		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Pogue	12/11/97 0800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

000027

259975

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No.: 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information

Sampler (Name): Marshall Cedilote

Airbill Number: 24239444434

Non-Superfund Program

Sampler Signature: Marshall Cedilote

5. Ship To: Clayton Environmental Consultants, 22345 Roethel Drive, Novi, MI 48375, ATTN: Kelly Kolb

Site Name: McGinnes

3. Purpose*: Lead — [X] SF, [ ] PRP, [ ] ST, [ ] FED; Early Action — [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI; Long-Term Action — [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

City, State: Galveston, TX

Site Spill ID

6. Matrix (Enter in Column A): 1. Surface Water; 2. Ground Water; 3. Leachate; 4. Field QC; 5. Soil/Sediment; 6. Oil (High only); 7. Waste (High only); 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl; 2. HNO3; 3. NaHSO4; 4. H2SO4; 5. Ice only; 6. Other (Specify in Column D); N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp. / Grab	D Preservative (from Box 7) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
FFR55	4	Low	Grab	5		X	X		6-164988	EB-01	12/9/97 0905	MFHL83	MAC	R
FFR64	2	Low	Grab	5		X	X		6-163955	GW-01	12/10/97 1125	MFHL88	MAC	—
FFR59	2	Low	Grab	5		X	X		6-164950	GW-06	12/10/97 1512	MFHL87	MAC	—

Shipment for Case Complete? (Y/N): NO

Page: 1 of 1

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Rogue	12/11/97 0800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

82000

(6)

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/10/97	Airborne Express

Regional Information

Non-Superfund Program

Site Name: McGINNIS

City, State: GALVESTON, TX

Site Spill ID

Sampler (Name): Wesley Newberry

Sampler Signature

Airbill Number: 2423944736

3. Purpose*

Lead: [X] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI

Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To

Clayton Environmental Consultants
22345 Roethel Drive
Novi, MI

ATTN: Kelly Kolb

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval — = Not a QC Sample)
~~FFR57~~ MAC 12/10	~~2~~	~~low~~	~~Grab~~	~~5~~		~~X~~	~~X~~		~~6-164919-16~~	~~GW-04~~	~~12/10/97 1605~~	~~MFHL85~~	~~WN~~	~~—~~
~~FFR58~~ MAC 12/10	~~2~~	~~low~~	~~Grab~~	~~5~~		~~X~~	~~X~~		~~6-164934-36~~	~~GW-05~~	~~12/10/97 1607~~	~~MFHL86~~	~~WN~~	~~—~~
FFR57	2	Low	Grab	5		X	X		6-164916	GW-04	12/10/97 1605	MFHL85	WN	—
FFR58	2	Low	Grab	5		X	X		6-164936	GW-05	12/10/97 1607	MFHL86	WN	—

62000

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1	FFR62		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]					
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

(1)

EPA Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information

Sampler (Name): Marshall Cecil Cole

Airbill Number: 24239145031

Non-Superfund Program

Sampler Signature: Marshall Cecil Cole

5. Ship To: Clayton Environmental Consultants, 22345 Roethel Drive, Novi, MI 48375, ATTN: Kelly Kolb

Site Name: McGINNIS

City, State: GALVESTON, TX

Site Spill ID

3. Purpose*

Lead	Early Action	Long-Term Action
[X] SF	[ ] CLEM	[ ] FS
[ ] PRP	[ ] PA	[ ] RD
[ ] ST	[ ] REM	[ ] RA
[ ] FED	[ ] RI	[ ] O&M
	[X] SI	[ ] NPLD
	[ ] ESI	

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR62	2	Low	Grab	5		X	X		6-164901-03	GW-03	12/10/97 1245	MFHL90	MAC	—

000030

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1	FFR62		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]					
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR48

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-001

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9672

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR48

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-001

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9672

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	2-Propanol	3.08	25.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

CASE 25919
SDG# FFR48

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FFR54

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-002

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9652

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR55

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-003

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9673

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	120.	B
75-15-0	Carbon Disulfide	3.	J
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	7.	J
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR55

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-003

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9673

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	2-Propanol	3.16	1000.	JN
2.		Unknown hydrocarbon	21.86	6.	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR57

CASE No. 25919
SDG# FFR48

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-004

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9674

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR57

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-004

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9674

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	2-Propanol	3.12	17.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR58

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-005

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9657

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR59

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-006

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9675

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	76.	B
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR60

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-009

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9661

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR61

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-007

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9659

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9665

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR66

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-011

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9676

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	8.	JB
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR67

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-012

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9664

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKCV

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013a1

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9650

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

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKCV

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013a1

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9650

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

% Moisture: not dec. Date Analyzed:12/15/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	75-07-0	Acetaldehyde	1.78	5.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKCW

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013a2

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9671

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

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKCW

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013a2

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9671

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

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	75-07-0	Acetaldehyde	1.76	6.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008MS

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9677

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	38.	
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	38.	
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	38.	
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	39.	
108-90-7	Chlorobenzene	41.	
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. CASE 25919 SDG# FFR48

FFR62MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008MSD

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9678

Level: (low/med) LOW Date Received:12/12/97

% Moisture: not dec. Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	2.	J
67-64-1	Acetone	5.	JB
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	42.	
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	41.	
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	39.	
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	40.	
108-90-7	Chlorobenzene	42.	
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR48

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-001

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1632

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	0.6	J
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	4.	J
91-57-6	2-Methylnaphthalene	2.	J
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR48

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-001

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1632

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	1.	J
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.8	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR48

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-001

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1632

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs Found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-93-0	Cyclohexanol	4.74	4.	JNB
2.		N,N-DIMETHYL-HENEICOSANYLAMI	15.75	2.	J
3.		Unknown	18.03	4.	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR54

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-002

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1633

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR54

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-002

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1633

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1.	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR54

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-002

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1633

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs Found: 18

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	4.30	9.	JN
2.	822-67-3	2-Cyclohexen-1-ol	4.82	4.	JN
3.		Unknown acid type	8.68	6.	J
4.		Unknown	10.30	16.	J
5.	112-05-0	Nonanoic acid	10.72	79.	JN
6.	97-78-9	Glycine, N-methyl-N-(1-oxodo	16.46	6.	JN
7.		Unknown	18.95	2.	J
8.		Unknown	21.14	3.	J
9.	112-60-7	Ethanol, 2,2'-[oxybis(2,1-et	21.21	10.	JN
10.		Unknown	21.66	2.	J
11.		Unknown	22.10	5.	J
12.		Unknown	22.97	5.	J
13.		Unknown	23.12	13.	J
14.		Unknown ester	23.25	3.	J
15.		Unknown	25.19	4.	J
16.		Unknown	25.52	8.	J
17.	28553-12-0	1,2-Benzenedicarboxylic acid	26.50	2.	JN
18.		Unknown	28.62	5.	J
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR55

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-003

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1634

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	4.	J
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	0.5	J
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR55

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-003

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1634

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	2.	J
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	0.9	J
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.5	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR55

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-003

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1634

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.5

Number TICs Found: 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	111-76-2	Ethanol, 2-butoxy-	5.03	7.	JN
2.		Unknown	6.60	3.	J
3.	931-17-9	1,2-Cyclohexanediol	7.39	2.	JN
4.	108-20-3	Propane, 2,2'-oxybis-	7.64	4.	JN
5.	90-05-1	Phenol, 2-methoxy- + unknown	7.83	3.	JN
6.	74367-33-2	Propanoic acid, 2-methyl-, 2	13.46	6.	JN
7.	498-02-2	Ethanone, 1-(4-hydroxy-3-met	15.82	2.	JN
8.		Unknown	18.03	2.	J
9.		Unknown	20.19	5.	J
10.		Unknown	27.08	4.	J
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR57

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-004

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1635

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR57

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-004

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1635

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.6	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR57

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-004

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1635

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs Found: 23

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.83	3.	JN
2.	930-68-7	2-Cyclohexen-1-one	5.66	2.	JN
3.	931-17-9	1,2-Cyclohexanediol	7.39	5.	JN
4.	124-07-2	Octanoic acid	8.69	9.	JN
5.		Unknown	10.29	12.	J
6.		Unknown acid type	10.77	120.	J
7.	334-48-5	Decanoic acid	13.17	4.	JN
8.	143-07-7	Dodecanoic acid	16.47	22.	JN
9.	134-62-3	Benzamide, N,N-diethyl-3-met	16.99	36.	JN
10.		Unknown acid type	18.55	4.	J
11.	112-60-7	Ethanol, 2,2'-[oxybis(2,1-et	18.96	4.	JN
12.		Unknown	21.13	5.	J
13.		Unknown alcohol	21.21	9.	J
14.		1,8-DIAZA-2,9-DIKETOCYCLOTET	22.91	2.	J
15.		Unknown	22.97	6.	J
16.		Unknown alcohol	23.13	10.	J
17.		Unknown	23.24	4.	J
18.		Unknown	23.58	4.	J
19.		Unknown	23.82	2.	J
20.		Unknown	25.19	4.	J
21.		Unknown	25.59	5.	J
22.		Unknown	28.62	3.	J
23.		Unknown	29.16	4.	J
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR58

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-005

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1636

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	0.9	J
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR58

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-005

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1636

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	0.8	J
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	2.	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FFR58

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-005

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1636

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICs Found: 27

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	4.30	3.	JN
2.	822-67-3	2-Cyclohexen-1-ol	4.82	3.	JN
3.	930-68-7	2-Cyclohexen-1-one	5.66	3.	JN
4.	617-94-7	Benzenemethanol, .alpha.,.al	7.76	5.	JN
5.		Unknown acid type	8.70	10.	J
6.		Unknown	10.30	23.	J
7.	112-05-0	Nonanoic acid	10.79	140.	JN
8.		Unknown acid type	13.18	5.	J
9.		Unknown	15.38	2.	J
10.	143-07-7	Dodecanoic acid	16.48	25.	JN
11.	134-62-3	Benzamide, N,N-diethyl-3-met	16.99	22.	JN
12.		Unknown acid type	18.55	4.	J
13.	112-60-7	Ethanol, 2,2'-[oxybis(2,1-et	18.96	7.	JN
14.		Unknown	21.13	8.	J
15.		Unknown alcohol	21.21	19.	J
16.		Unknown	21.36	2.	J
17.		1,8-DIAZA-2,9-DIKETOCYCLOTET	22.92	2.	J
18.		Unknown	22.97	10.	J
19.		Unknown alcohol	23.13	23.	J
20.		Unknown	23.25	7.	J
21.		Unknown	23.58	3.	J
22.		Unknown	23.82	3.	J
23.		Unknown	25.19	8.	J
24.		Unknown alcohol	25.53	14.	J
25.		Unknown	28.61	8.	J
26.		Unknown alcohol	29.18	8.	J
27.		Unknown	33.34	6.	J
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR59

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-006

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1637

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR59

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-006

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1637

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	1.	J
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR59

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-006

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1637

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.5

Number TICs Found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	142-62-1	Hexanoic acid	5.94	8.	JN
2.	68752-16-9	Ethanone, 1-(1-methyl-2-cycl	6.65	3.	JN
3.	111-14-8	Heptanoic acid	7.23	3.	JN
4.	931-17-9	1,2-Cyclohexanediol	7.39	3.	JN
5.	124-07-2	Octanoic acid	8.76	35.	JN
6.		Unknown	10.31	11.	J
7.	112-05-0	Nonanoic acid	10.79	120.	JN
8.		Unknown	11.35	4.	J
9.	334-48-5	Decanoic acid	13.19	3.	JN
10.	134-62-3	Benzamide, N,N-diethyl-3-met	16.99	21.	JN
11.	112-60-7	Ethanol, 2,2'-[oxybis(2,1-et	18.95	4.	JN
12.		Unknown alcohol	21.22	19.	J
13.		1,8-DIAZA-2,9-DIKETOCYCLOTET	22.91	13.	J
14.		Unknown	22.96	2.	J
15.		Unknown alcohol	23.14	28.	J
16.		Unknown	23.26	3.	J
17.		Unknown alcohol	25.53	19.	J
18.		Unknown	28.59	2.	J
19.		Unknown alcohol	29.26	3.	J
20.		Unknown	32.41	2.	J
21.		Unknown	35.73	4.	J
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR60

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-009

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1642

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR60

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-009

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1642

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR60

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-009

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1642

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs Found: 14

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	4.30	8.	JN
2.		Unknown	4.54	16.	J
3.	822-67-3	2-Cyclohexen-1-ol	4.82	3.	JN
4.	930-68-7	2-Cyclohexen-1-one	5.67	3.	JN
5.		Unknown	10.31	92.	J
6.		Unknown	10.94	4.	J
7.		Unknown	11.35	26.	J
8.	134-62-3	Benzamide, N,N-diethyl-3-met	16.99	10.	JN
9.		Unknown	21.21	5.	J
10.		Unknown	21.65	2.	J
11.		1,8-DIAZA-2,9-DIKETOCYCLOTET	22.91	7.	J
12.	1786-94-3	3,6,9,12,15-Pentaoxanonadeca	23.12	4.	JN
13.	123-79-5	Hexanedioic acid, dioctyl es	23.26	4.	JNB
14.		Unknown amide	27.09	3.	J
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR61

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-007

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1638

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR61

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-007

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1638

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	0.7	J
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FFR61

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-007

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1638

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

Number TICs Found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	4.30	6.	JN
2.	822-67-3	2-Cyclohexen-1-ol	4.81	5.	JN
3.	930-68-7	2-Cyclohexen-1-one	5.67	5.	JN
4.		Unknown	6.97	4.	J
5.		Unknown	10.31	55.	J
6.		Unknown	11.34	5.	J
7.	4884-24-6	[1,1'-Bicyclopentyl]-2-one	11.92	3.	JN
8.	134-62-3	Benzamide, N,N-diethyl-3-met	16.99	15.	JN
9.		Unknown	21.52	5.	J
10.		1,8-DIAZA-2,9-DIKETOCYCLOTET	22.96	93.	J
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1639

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1639

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR62

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1639

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs Found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	4.29	4.	JN
2.		1,8-DIAZA-2,9-DIKETOCYCLOTET	22.91	6.	J
3.	123-79-5	Hexanedioic acid, dioctyl es	23.26	2.	JNB
4.	301-02-0	9-Octadecenamide, (Z)-	27.08	3.	JN
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR65

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-010

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1643

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	3.	J
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR65

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-010

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1643

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.8	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR65

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-010

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1643

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs Found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-93-0	Cyclohexanol	4.74	3.	JNB
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKW1

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1631

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

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKW1

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1631

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

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.8	J
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKW1

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-013

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1631

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

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/16/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs Found: 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	872-53-7	Cyclopentanecarboxaldehyde	3.89	4.	JN
2.		Unknown	4.31	2.	J
3.	108-93-0	Cyclohexanol	4.74	2.	JN
4.		1-Formylcyclopentene	4.91	6.	J
5.	123-79-5	Hexanedioic acid, dioctyl es	23.26	3.	JN
6.		Unknown phthalate	27.31	2.	J
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008MS

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1640

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	70.	
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	65.	
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	39.	
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	51.	
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	45.	
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	79.	
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	43.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008MS

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1640

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	80.	
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	51.	
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	95.	E
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	50.	
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	2.	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008MSD

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1641

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	60.	
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	56.	
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	34.	
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	43.	
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	37.	
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	66.	
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	37.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water) WATER Lab Sample ID:57190-008MSD

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1641

Level: (low/med) LOW Date Received:12/12/97

% Moisture: decanted: (Y/N) Date Extracted:12/15/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed:12/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	68.	
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	44.	
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	80.	
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	43.	
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1.	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR48

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-1

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CASE 25919 SDG# FFR48

EPA SAMPLE NO.

FFR54

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-2

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.041	J
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	0.38	JP
11096-82-5	Aroclor-1260	1.0	U

RH12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR55

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-3

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR57

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: FFR57

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 1 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR58

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: FFR58

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 1 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR59

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-6

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR60

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-9

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR61

Lab Name:CLAYTON Contract:68-D5-0005

Lab Code:CLAYTN Case No.25919 SAS No.: SDG No.:FFR48

Matrix: (soil/water)WATER Lab Sample ID: 57190-7

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc)SEPF Date Extracted:12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.044	J
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	0.46	JP
11096-82-5	Aroclor-1260	1.0	U

CASE 25919

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SDG# FFR48 SAMPLE NO. FFR62

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-8

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.025	J
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.021	JP
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR65

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-10

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MS

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-8MS

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.46	
76-44-8	Heptachlor	0.43	
309-00-2	Aldrin	0.42	
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.034	J
60-57-1	Dieldrin	0.96	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	1.1	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	1.0	
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.029	J
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 12-19-97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR62MSD

Lab Name: CLAYTON Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR48

Matrix: (soil/water) WATER Lab Sample ID: 57190-8MSD

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

% Moisture: decanted: (Y/N) Date Received: 12/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/15/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/18/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.49	
76-44-8	Heptachlor	0.45	
309-00-2	Aldrin	0.46	
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.019	J
60-57-1	Dieldrin	1.0	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	1.1	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	1.1	
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.016	J
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

12-19-97

TNRCC

Protecting Texas
by Reducing and
Preventing Pollution

Screening Site Inspection Report
Volume II of II

for

McGinnes Industrial Maintenance Corporation
TXD 980 697 031
Hitchcock, Galveston County, Texas

Prepared in cooperation with the
U.S. Environmental Protection Agency

May 1998

APPENDIX G

Sample Designation Group FFR18

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 2-6-1998

Subject: **Contract Laboratory Program Data Review**

From: Marvelyn Humphrey, Alternate/ESAT RPO, 6MD-HC Marvelyn Humphrey 2/6/98

To: B. Kirchner ,6SF-RA

Site: MCGINNES INDUSTRIAL

Case#: 25919

SDG#: FF-R18

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

( ) Acceptable : No problems with data package.

(X) Provisional: Data is acceptable for regional use.
Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 LP/TPO
M. ElFeky, Region 6 Data Coordinator
Files (2)

00001

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: February 5, 1998

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C.H. Chiang, ESAT Team Manager, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-8119A, ESAT File # O-1879
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25919
SDG # FFR18
Site MCGINNES INDUSTRIAL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

Hardcopy review and CCS found the following contractually non-compliant item.

BNA rinsate sample FF-R56 was extracted nine days past the contractual holding time limit (OLM03.2, D-18/SVOA, 8.4.1). All results for this sample were qualified as estimated.

II. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE

The total number of results reviewed was 1533 for this data package. The data package is technically provisional because VOA sample FF-R56 leaked during shipment and BNA sample FF-R56 was extracted 11 days past the technical holding time limit.

00002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25919 SITE MCGINNES INDUSTRIAL
LABORATORY CLAYTN NO. OF SAMPLES 13
CONTRACT# 68-D5-0005 MATRIX 11 soil & 2 water
SDG# FFR18 REVIEWER (IF NOT ESD) ESAT
SOW# RAS OLM03.2 REVIEWER'S NAME Mike Fertitta
ACCT# 8FAXJN25 SF# FAXUZZ COMPLETION DATE February 5, 1998

SAMPLE NO.'s: FF-R18, FF-R19, FF-R22, FF-R23, FF-R24, FF-R25, FF-R27, FF-R28, FF-R29, FF-R30, FF-R32, FF-R56, FF-R68

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	M	M	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	M	O	O
4. BLANKS	O	O	O
5. SMC/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	O	O
7. OTHER QC	O	O	O
8. INTERNAL STANDARDS	O	O	N/A
9. COMPOUND ID/QUANTITATION	O	O	M
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	M	M	M

O = Data had no problems.
M = Data qualified due to major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS: The extraction of BNA sample FF-R56 exceeded the contractual holding time limit.

AREA OF CONCERN: Leakage during shipment occurred for VOA sample FF-R56. The extraction of BNA sample FF-R56 exceeded the technical holding time limit. Acetone failed technical %RSD and %D calibration criteria. Coeluting matrix interference obscured the detection or interfered with the quantitation of pesticides in two samples. Two samples had one or two pesticides with inconsistent two-column quantitation results.

NOTABLE PERFORMANCE:

00003

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 25919 **SDG** FFR18 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA		13	
BNA	11	1	
PEST	9	3	

COMMENTS: The case consisted of 1 rinsate and 11 soil samples for complete RAS organics analysis and 1 field blank for VOA analysis only. The OTR/COC Record designated sample FF-R30 as the laboratory QC sample, sample FF-R56 as a rinsate, sample FF-R68 as a field blank, and samples FF-R22 and FF-R23 as field duplicates. The data package contained one contractually non-compliant item. BNA rinsate sample FF-R56 was extracted nine days past the contractual holding time limit.

BNA sample FF-R24 was analyzed at the medium level because of high concentrations of background hydrocarbons. All other soil samples were analyzed at the low level. Pest/PCB sample FF-R24 required an 8X dilution because of high pesticide concentrations (up to 170 μg/Kg). The laboratory diluted and analyzed Pest/PCB sample FF-R28 because of high levels of matrix interferences. Target compounds reported above the sample quantitation limits included the following: γ-BHC, aldrin, heptachlor epoxide, endosulfan I, and/or DDD in Pest/PCB samples FF-R24 and FF-R28, acetone in the VOA field blank and rinsate, and fluoranthene and pyrene in BNA sample FF-R25. Concentrations above the CRQL's were also reported for methylene chloride and acetone in the VOA soil samples, but their presence was due to laboratory contamination.

Data are provisional for all VOA, one BNA and three Pest/PCB samples because of problems with sample shipping condition, holding time, calibration, and compound identification and quantitation. The technical usability of all reported sample results is indicated by ESAT's final data qualifiers in the Data Summary Table. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the results were recorded in the Evidence Inventory Checklist.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25919 **SDG** FFR18 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

1. **Holding Times:** Provisional. The extraction of BNA rinsate sample FF-R56 exceeded the contractual holding time limit by nine days. The reviewer qualified all results for BNA sample FF-R56 as estimated because the extraction also exceeded the technical (40 CFR Part 136) holding time limit by 11 days. All other samples met the contractual and technical holding time criteria.

The laboratory reported that leakage from the container of VOA rinsate sample FF-R56 had occurred during shipping. The reviewer qualified the results for that sample as estimated and biased low because of potential loss of volatiles to the headspace created by the leakage.

The laboratory received all samples at an elevated cooler temperature (9°C). In the reviewer's opinion, sample results were unaffected.

2. **Tuning/Performance:** Acceptable. The BFB and DFTPP analyses met GC/MS tuning criteria for the VOA and BNA fractions. Retention time windows overlapped on analytical columns for several pesticides and aroclors. The reviewer verified that the coelution problems did not affect identification of Pest/PCB target analytes above CRQL levels in the samples.

3. **Calibrations:** Provisional. Target analytes generally met contractual calibration criteria. Several analytes failed technical %RSD and/or %D calibration criteria. The reviewer qualified as estimated the acetone results for all VOA samples because acetone failed both %RSD and %D criteria. Other sample results associated with the calibration deficiencies were not qualified because the analytes were not detected above CRQL's in the samples.

4. **Blanks:** Acceptable. All method, storage, and instrument blanks met contractual QC guidelines. The Pest/PCB blanks were free of contamination. The VOA and BNA blanks contained one or more of the following target analytes below the CRQL's: bromomethane, methylene chloride, acetone, carbon disulfide, 2-methylnaphthalene, phenanthrene, and bis(2-ethylhexyl)phthalate. The effect of the laboratory contamination on the result usability is listed below.

- The carbon disulfide results are biased high (B) for VOA samples FF-R18 and FF-R22.
- All other sample results "B"-flagged by the laboratory should be considered as undetected (U).

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25919 **SDG** FFR18 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

4. Blanks (continued):

Field QC: Field blank sample FF-R68 contained acetone above the CRQL and chloroform below the CRQL. Rinsate sample FF-R56 contained acetone at over 4X the CRQL and chloroform, 4-chloro-3-methylphenol, and di-n-butylphthalate below the CRQL's. Chloroform, 4-chloro-3-methylphenol, and di-n-butylphthalate were not detected in the field samples. The reviewer could not assess the effect of the field and equipment contamination of acetone because the field blank and rinsate (water) had a different matrix and different reporting units than the field samples (soil). Furthermore, information on the samples associated with the rinsate was not available. All acetone field sample results, however, were already "U"-flagged because of laboratory contamination.

5. System Monitoring Compounds (SMC's)/Surrogates: Acceptable. All SMC and most surrogate recoveries were within the QC limits. Pest/PCB sample FF-R24 had a high TCX recovery on one column that was due to non-TCL interference. Sample results were not affected.

6. Matrix Spike/Matrix Spike Duplicate: Acceptable. MS/MSD results met QC criteria for percent recovery and precision with a few exceptions for the BNA fraction. The MS recoveries for phenol and 2,4-dinitrotoluene and the %RPD for acenaphthene exceeded QC limits for the low level MS/MSD analyses. The medium level MSD recoveries exceeded the QC limits for phenol and 2,4-dinitrotoluene. Since these analytes were not detected in the unspiked samples, data qualification was unnecessary.

7. Other QC:

Field Duplicates: Acceptable. Field duplicate results were generally consistent.

8. Internal Standards (IS): Acceptable. VOA and BNA IS performance was acceptable.

9. Compound Identity/Quantitation: Provisional.

VOA/BNA: Concentrations were reported above the CRQL's for acetone in the VOA field QC samples and for fluoranthene and pyrene in BNA sample FF-R25. Methylene chloride and acetone were reported above CRQL's in the VOA soil samples, but their presence was due to laboratory contamination. All reported results met compound identification criteria.

00006

9. Compound Identity/Quantitation (continued):

The laboratory analyzed BNA sample FF-R24 at the medium level because of high non-target hydrocarbon concentrations. Several PAH's were detected at significant concentrations in this sample although the concentrations were below the quantitation limits for the medium level analysis.

Pest/PCB: Sample FF-R24 required an 8X dilution because of high pesticide concentrations (up to 170 μg/Kg). The laboratory diluted and analyzed sample FF-R28 because of high levels of matrix interferences or non-target analytes. Up to seven pesticides in these two samples had concentrations exceeding the CRQL's specified in the SOW, but the dilution caused the concentrations to fall below the elevated sample quantitation limits (QL's). Analytes with concentrations above the sample QL's in samples FF-R24 and FF-R23 included γ-BHC, aldrin, heptachlor epoxide, endosulfan I, and/or DDD. Results above sample QL's with "P" flags were qualified as estimated because the two-column quantitation differences exceeded 25 percent. None of the reported results required GC/MS confirmation.

AR1242 and/or AR1254 were reported below the CRQL's in samples FF-R22 and FF-R23. In the reviewer's opinion, aroclor peaks were reported as aldrin below the CRQL in sample FF-R23. The reviewer raised this aldrin concentration to the CRQL and flagged it "U". The reviewer verified that aroclor peaks did not affect the detection of other target analytes at CRQL levels.

Significant matrix interferences were present in the analysis of sample FF-R27. The reviewer qualified as estimated and biased low the heptachlor epoxide quantitation limit for sample FF-R27 because of this interference. The reviewer also qualified the endosulfan I result as estimated and biased high for sample FF-R24 because of poor peak integration caused by coeluting matrix interferences.

Samples FF-R30MS/MSD contained AR1254 at concentrations below the CRQL, but the aroclor was not detected in the unspiked sample. In the reviewer's opinion, inhomogeneous sample matrix may have contributed to this inconsistency. The laboratory reported extremely low concentrations (less than or equal to one tenth the sample QL's) for β-BHC and heptachlor epoxide in sample FF-R28. The reviewer raised these low concentrations to the sample QL's and flagged them as undetected following Region 6 guidelines.

10. Performance/Completeness: Acceptable. The data package was complete. The laboratory was contacted concerning some minor problems (see the Telephone and FAX Record Logs).

00007

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25919 **SDG** FFR18 **SITE** MCGINNES INDUSTRIAL **LAB** CLAYTN

11. Overall Assessment: Data are acceptable for 11 BNA and 9 Pest/PCB samples.

VOA Some results were qualified for all samples because of calibration problems or sample leakage during shipment.

BNA All results for sample FF-R56 were qualified because of a holding time problem.

PEST Some results were qualified for samples FF-R24, FF-R27, and FF-R28 because of problems with compound identification or quantitation.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R18	FF-R19	FF-R22	FF-R23	FF-R24	FF-R25	FF-R27
Chloromethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Bromomethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Vinyl chloride	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Chloroethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Methylene chloride	75 U	71 U	50 U	55 U	62 U	56 U	36 U
Acetone	62 UJ	39 UJ	30 UJ	25 UJ	91 UJ	23 UJ	36 UJ
Carbon disulfide	13 JB	19 U	9 JB	13 U	21 U	15 U	14 U
1,1-Dichloroethene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
1,1-Dichloroethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
1,2-Dichloroethene (total)	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Chloroform	20 U	19 U	15 U	13 U	21 U	15 U	14 U
1,2-Dichloroethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
2-Butanone	20 U	19 U	15 U	13 U	14 J	15 U	14 U
1,1,1-Trichloroethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Carbon tetrachloride	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Bromodichloromethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
1,2-Dichloropropane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
cis-1,3-Dichloropropene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Trichloroethene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Dibromochloromethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
1,1,2-Trichloroethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Benzene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
trans-1,3-Dichloropropene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Bromoform	20 U	19 U	15 U	13 U	21 U	15 U	14 U
4-Methyl-2-pentanone	20 U	19 U	15 U	13 U	21 U	15 U	14 U
2-Hexanone	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Tetrachloroethene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
1,1,2,2-Tetrachloroethane	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Toluene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Chlorobenzene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Ethylbenzene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Styrene	20 U	19 U	15 U	13 U	21 U	15 U	14 U
Xylenes (total)	20 U	19 U	15 U	13 U	15 J	15 U	14 U
Sample wt (g):	5.00	5.00	5.00	5.00	5.00	5.00	5.00
%Moisture:	50	47	34	25	52	32	31
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Level:	Low	Low	Low	Low	Low	Low	Low
Number of TIC's:	5	2	4	3	30	8	6

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

VOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R28		FF-R29		FF-R30		FF-R32							
Chloromethane	19	U	13	U	17	U	14	U						
Bromomethane	19	U	13	U	17	U	14	U						
Vinyl chloride	19	U	13	U	17	U	14	U						
Chloroethane	19	U	13	U	17	U	14	U						
Methylene chloride	34	U	36	U	52	U	71	U						
Acetone	31	UJ	17	UJ	29	UJ	24	UJ						
Carbon disulfide	19	U	13	U	17	U	14	U						
1,1-Dichloroethene	19	U	13	U	17	U	14	U						
1,1-Dichloroethane	19	U	13	U	17	U	14	U						
1,2-Dichloroethene (total)	19	U	13	U	17	U	14	U						
Chloroform	19	U	13	U	17	U	14	U						
1,2-Dichloroethane	19	U	13	U	17	U	14	U						
2-Butanone	19	U	13	U	2	J	14	U						
1,1,1-Trichloroethane	19	U	13	U	17	U	14	U						
Carbon tetrachloride	19	U	13	U	17	U	14	U						
Bromodichloromethane	19	U	13	U	17	U	14	U						
1,2-Dichloropropane	19	U	13	U	17	U	14	U						
cis-1,3-Dichloropropene	19	U	13	U	17	U	14	U						
Trichloroethene	19	U	13	U	17	U	14	U						
Dibromochloromethane	19	U	13	U	17	U	14	U						
1,1,2-Trichloroethane	19	U	13	U	17	U	14	U						
Benzene	19	U	13	U	17	U	14	U						
trans-1,3-Dichloropropene	19	U	13	U	17	U	14	U						
Bromoform	19	U	13	U	17	U	14	U						
4-Methyl-2-pentanone	19	U	13	U	17	U	14	U						
2-Hexanone	19	U	13	U	17	U	14	U						
Tetrachloroethene	19	U	13	U	17	U	14	U						
1,1,2,2-Tetrachloroethane	19	U	13	U	17	U	14	U						
Toluene	19	U	13	U	17	U	14	U						
Chlorobenzene	19	U	13	U	17	U	14	U						
Ethylbenzene	19	U	13	U	17	U	14	U						
Styrene	19	U	13	U	17	U	14	U						
Xylenes (total)	19	U	13	U	17	U	14	U						
Sample wt (g):	5.00		5.00		5.00		5.00							
%Moisture:	47		21		40		30							
Dilution Factor:	1.0		1.0		1.0		1.0							
Level:	Low		Low		Low		Low							
Number of TIC's:	4		2		3		3							

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R56	FF-R68					
Chloromethane	10 UJ	10 U					
Bromomethane	10 UJ	10 U					
Vinyl chloride	10 UJ	10 U					
Chloroethane	10 UJ	10 U					
Methylene chloride	10 UJ	10 U					
Acetone	43 J	14 J					
Carbon disulfide	10 UJ	10 U					
1,1-Dichloroethene	10 UJ	10 U					
1,1-Dichloroethane	10 UJ	10 U					
1,2-Dichloroethene (total)	10 UJ	10 U					
Chloroform	2 J	2 J					
1,2-Dichloroethane	10 UJ	10 U					
2-Butanone	10 UJ	10 U					
1,1,1-Trichloroethane	10 UJ	10 U					
Carbon tetrachloride	10 UJ	10 U					
Bromodichloromethane	10 UJ	10 U					
1,2-Dichloropropane	10 UJ	10 U					
cis-1,3-Dichloropropene	10 UJ	10 U					
Trichloroethene	10 UJ	10 U					
Dibromochloromethane	10 UJ	10 U					
1,1,2-Trichloroethane	10 UJ	10 U					
Benzene	10 UJ	10 U					
trans-1,3-Dichloropropene	10 UJ	10 U					
Bromoform	10 UJ	10 U					
4-Methyl-2-pentanone	10 UJ	10 U					
2-Hexanone	10 UJ	10 U					
Tetrachloroethene	10 UJ	10 U					
1,1,2,2-Tetrachloroethane	10 UJ	10 U					
Toluene	10 UJ	10 U					
Chlorobenzene	10 UJ	10 U					
Ethylbenzene	10 UJ	10 U					
Styrene	10 UJ	10 U					
Xylenes (total)	10 UJ	10 U					
Sample Volume (mL):	5.00	5.00					
Dilution Factor:	1.0	1.0					
Number of TIC's:	1	1					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R18	FF-R19	FF-R22	FF-R23	FF-R24	FF-R25	FF-R27
Phenol	40 J	690 U	440 U	430 U	21000 U	41 J	460 U
bis(2-Chloroethyl)ether	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2-Chlorophenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
1,3-Dichlorobenzene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
1,4-Dichlorobenzene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
1,2-Dichlorobenzene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2-Methylphenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,2'-Oxybis(1-chloropropane)	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
4-Methylphenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
N-Nitroso-di-n-propylamine	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Hexachloroethane	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Nitrobenzene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Isophorone	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2-Nitrophenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,4-Dimethylphenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
bis(2-Chloroethoxy)methane	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,4-Dichlorophenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
1,2,4-Trichlorobenzene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Naphthalene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
4-Chloroaniline	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Hexachlorobutadiene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
4-Chloro-3-methylphenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2-Methylnaphthalene	670 U	690 U	440 U	430 U	5700 J	490 U	460 U
Hexachlorocyclopentadiene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,4,6-Trichlorophenol	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,4,5-Trichlorophenol	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
2-Chloronaphthalene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2-Nitroaniline	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
Dimethylphthalate	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Acenaphthylene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,6-Dinitrotoluene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
3-Nitroaniline	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
Acenaphthene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,4-Dinitrophenol	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
4-Nitrophenol	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
Dibenzofuran	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
2,4-Dinitrotoluene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Diethylphthalate	670 U	690 U	440 U	27 J	21000 U	490 U	460 U
4-Chlorophenyl-phenylether	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Fluorene	670 U	690 U	440 U	430 U	1100 J	26 J	460 U
4-Nitroaniline	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
4,6-Dinitro-2-methylphenol	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
N-Nitrosodiphenylamine	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
4-Bromophenyl-phenylether	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Hexachlorobenzene	670 U	690 U	440 U	430 U	21000 U	490 U	460 U

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R18	FF-R19	FF-R22	FF-R23	FF-R24	FF-R25	FF-R27
Pentachlorophenol	1700 U	1700 U	1100 U	1100 U	53000 U	1200 U	1200 U
Phenanthrene	670 U	690 U	440 U	430 U	3300 J	380 J	460 U
Anthracene	670 U	690 U	440 U	430 U	21000 U	100 J	460 U
Carbazole	670 U	690 U	440 U	430 U	21000 U	38 J	460 U
Di-n-butylphthalate	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Fluoranthene	670 U	690 U	440 U	430 U	1100 J	630	460 U
Pyrene	670 U	690 U	440 U	430 U	3800 J	630	460 U
Butylbenzylphthalate	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
3,3'-Dichlorobenzidine	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Benzo(a)anthracene	670 U	690 U	440 U	430 U	1100 J	200 J	460 U
Chrysene	670 U	690 U	440 U	430 U	2500 J	210 J	460 U
bis(2-Ethylhexyl)phthalate	670 U	690 U	440 U	430 U	21000 U	490 U	460 U
Di-n-octylphthalate	670 U	690 U	27 J	430 U	21000 U	490 U	29 J
Benzo(b)fluoranthene	670 U	690 U	440 U	430 U	21000 U	120 J	460 U
Benzo(k)fluoranthene	670 U	690 U	440 U	430 U	21000 U	110 J	460 U
Benzo(a)pyrene	670 U	690 U	440 U	430 U	1300 J	120 J	460 U
Indeno(1,2,3-cd)pyrene	670 U	690 U	440 U	430 U	21000 U	64 J	460 U
Dibenz(a,h)anthracene	670 U	690 U	440 U	430 U	21000 U	26 J	460 U
Benzo(g,h,i)perylene	670 U	690 U	440 U	430 U	21000 U	66 J	460 U
Sample wt (g):	30.0	30.0	30.0	30.0	1.0	30.0	30.0
%Moisture:	51	52	26	24	53	33	28
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Level:	Low	Low	Low	Low	Med	Low	Low
Number of TIC's:	30	30	28	21	30	25	27

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R28	FF-R29	FF-R30	FF-R32			
Phenol	64 J	480 U	560 U	570 U			
bis(2-Chloroethyl)ether	720 U	480 U	560 U	570 U			
2-Chlorophenol	720 U	480 U	560 U	570 U			
1,3-Dichlorobenzene	720 U	480 U	560 U	570 U			
1,4-Dichlorobenzene	720 U	480 U	560 U	570 U			
1,2-Dichlorobenzene	720 U	480 U	560 U	570 U			
2-Methylphenol	720 U	480 U	560 U	570 U			
2,2'-Oxybis(1-chloropropane)	720 U	480 U	560 U	570 U			
4-Methylphenol	720 U	480 U	560 U	570 U			
N-Nitroso-di-n-propylamine	720 U	480 U	560 U	570 U			
Hexachloroethane	720 U	480 U	560 U	570 U			
Nitrobenzene	720 U	480 U	560 U	570 U			
Isophorone	720 U	480 U	560 U	570 U			
2-Nitrophenol	720 U	480 U	560 U	570 U			
2,4-Dimethylphenol	720 U	480 U	560 U	570 U			
bis(2-Chloroethoxy)methane	720 U	480 U	560 U	570 U			
2,4-Dichlorophenol	720 U	480 U	560 U	570 U			
1,2,4-Trichlorobenzene	720 U	480 U	560 U	570 U			
Naphthalene	120 J	480 U	560 U	570 U			
4-Chloroaniline	720 U	480 U	560 U	570 U			
Hexachlorobutadiene	720 U	480 U	560 U	570 U			
4-Chloro-3-methylphenol	720 U	480 U	560 U	570 U			
2-Methylnaphthalene	540 J	480 U	560 U	570 U			
Hexachlorocyclopentadiene	720 U	480 U	560 U	570 U			
2,4,6-Trichlorophenol	720 U	480 U	560 U	570 U			
2,4,5-Trichlorophenol	1800 U	1200 U	1400 U	1400 U			
2-Chloronaphthalene	720 U	480 U	560 U	570 U			
2-Nitroaniline	1800 U	1200 U	1400 U	1400 U			
Dimethylphthalate	720 U	480 U	560 U	570 U			
Acenaphthylene	720 U	480 U	560 U	570 U			
2,6-Dinitrotoluene	720 U	480 U	560 U	570 U			
3-Nitroaniline	1800 U	1200 U	1400 U	1400 U			
Acenaphthene	720 U	480 U	560 U	570 U			
2,4-Dinitrophenol	1800 U	1200 U	1400 U	1400 U			
4-Nitrophenol	1800 U	1200 U	1400 U	1400 U			
Dibenzofuran	86 J	480 U	560 U	570 U			
2,4-Dinitrotoluene	720 U	480 U	560 U	570 U			
Diethylphthalate	720 U	480 U	560 U	570 U			
4-Chlorophenyl-phenylether	720 U	480 U	560 U	570 U			
Fluorene	46 J	480 U	560 U	570 U			
4-Nitroaniline	1800 U	1200 U	1400 U	1400 U			
4,6-Dinitro-2-methylphenol	1800 U	1200 U	1400 U	1400 U			
N-Nitrosodiphenylamine	720 U	480 U	560 U	570 U			
4-Bromophenyl-phenylether	720 U	480 U	560 U	570 U			
Hexachlorobenzene	720 U	480 U	560 U	570 U			

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R28		FF-R29		FF-R30		FF-R32							
Pentachlorophenol	1800	U	1200	U	1400	U	1400	U						
Phenanthrene	590	J	480	U	560	U	570	U						
Anthracene	110	J	480	U	560	U	570	U						
Carbazole	720	U	480	U	560	U	570	U						
Di-n-butylphthalate	720	U	480	U	560	U	570	U						
Fluoranthene	96	J	480	U	560	U	570	U						
Pyrene	310	J	480	U	560	U	570	U						
Butylbenzylphthalate	720	U	480	U	560	U	570	U						
3,3'-Dichlorobenzidine	720	U	480	U	560	U	570	U						
Benzo(a)anthracene	260	J	480	U	560	U	570	U						
Chrysene	540	J	480	U	560	U	570	U						
bis(2-Ethylhexyl)phthalate	720	U	480	U	560	U	570	U						
Di-n-octylphthalate	200	J	480	U	560	U	570	U						
Benzo(b)fluoranthene	230	J	480	U	560	U	570	U						
Benzo(k)fluoranthene	72	J	480	U	560	U	570	U						
Benzo(a)pyrene	270	J	480	U	560	U	570	U						
Indeno(1,2,3-cd)pyrene	210	J	480	U	560	U	570	U						
Dibenz(a,h)anthracene	360	J	480	U	560	U	570	U						
Benzo(g,h,i)perylene	530	J	480	U	560	U	570	U						
Sample wt (g):	30.0		30.0		30.0		30.0							
%Moisture:	54		31		41		42							
Dilution Factor:	1.0		1.0		1.0		1.0							
Level:	Low		Low		Low		Low							
Number of TIC's:	30		23		30		20							

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R56											
Phenol	10	UJ										
bis(2-Chloroethyl)ether	10	UJ										
2-Chlorophenol	10	UJ										
1,3-Dichlorobenzene	10	UJ										
1,4-Dichlorobenzene	10	UJ										
1,2-Dichlorobenzene	10	UJ										
2-Methylphenol	10	UJ										
2,2'-Oxybis(1-chloropropane)	10	UJ										
4-Methylphenol	10	UJ										
N-Nitroso-di-n-propylamine	10	UJ										
Hexachloroethane	10	UJ										
Nitrobenzene	10	UJ										
Isophorone	10	UJ										
2-Nitrophenol	10	UJ										
2,4-Dimethylphenol	10	UJ										
bis(2-Chloroethoxy)methane	10	UJ										
2,4-Dichlorophenol	10	UJ										
1,2,4-Trichlorobenzene	10	UJ										
Naphthalene	10	UJ										
4-Chloroaniline	10	UJ										
Hexachlorobutadiene	10	UJ										
4-Chloro-3-methylphenol	5	J										
2-Methylnaphthalene	10	UJ										
Hexachlorocyclopentadiene	10	UJ										
2,4,6-Trichlorophenol	10	UJ										
2,4,5-Trichlorophenol	25	UJ										
2-Chloronaphthalene	10	UJ										
2-Nitroaniline	25	UJ										
Dimethylphthalate	10	UJ										
Acenaphthylene	10	UJ										
2,6-Dinitrotoluene	10	UJ										
3-Nitroaniline	25	UJ										
Acenaphthene	10	UJ										
2,4-Dinitrophenol	25	UJ										
4-Nitrophenol	25	UJ										
Dibenzofuran	10	UJ										
2,4-Dinitrotoluene	10	UJ										
Diethylphthalate	10	UJ										
4-Chlorophenyl-phenylether	10	UJ										
Fluorene	10	UJ										
4-Nitroaniline	25	UJ										
4,6-Dinitro-2-methylphenol	25	UJ										
N-Nitrosodiphenylamine	10	UJ										
4-Bromophenyl-phenylether	10	UJ										
Hexachlorobenzene	10	UJ										

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

SEMIVOLATILES		FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R56							
Pentachlorophenol	25	UJ						
Phenanthrene	10	UJ						
Anthracene	10	UJ						
Carbazole	10	UJ						
Di-n-butylphthalate	0.6	J						
Fluoranthene	10	UJ						
Pyrene	10	UJ						
Butylbenzylphthalate	10	UJ						
3,3'-Dichlorobenzidine	10	UJ						
Benzo(a)anthracene	10	UJ						
Chrysene	10	UJ						
bis(2-Ethylhexyl)phthalate	10	UJ						
Di-n-octylphthalate	10	UJ						
Benzo(b)fluoranthene	10	UJ						
Benzo(k)fluoranthene	10	UJ						
Benzo(a)pyrene	10	UJ						
Indeno(1,2,3-cd)pyrene	10	UJ						
Dibenz(a,h)anthracene	10	UJ						
Benzo(g,h,i)perylene	10	UJ						
Sample Volume (mL):	1000.0							
Dilution Factor:	1.0							
Number of TIC's:	26							

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

PESTICIDES/PCBs		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-R18		FF-R19		FF-R22		FF-R23		FF-R24		FF-R25		FF-R27	
alpha-BHC	3.5	U	3.5	U	2.3	U	2.2	U	25	J	2.5	U	2.4	U
beta-BHC	3.5	U	3.5	U	2.3	U	2.2	U	29	U	2.5	U	2.4	U
delta-BHC	3.5	U	3.5	U	2.3	U	2.2	U	29	U	2.5	U	2.4	U
gamma-BHC (lindane)	3.5	U	3.5	U	2.3	U	2.2	U	31		2.5	U	2.4	U
Heptachlor	3.5	U	3.5	U	2.3	U	2.2	U	29	U	2.5	U	2.4	U
Aldrin	3.5	U	3.5	U	2.3	U	2.2	U	64		2.5	U	2.4	U
Heptachlor epoxide	3.5	U	3.5	U	2.3	U	2.2	U	71	J	2.5	U	2.4	UJv
Endosulfan I	3.5	U	3.5	U	2.3	U	2.2	U	170	J^	2.5	U	2.4	U
Dieldrin	6.7	U	6.9	U	4.4	U	4.3	U	36	J	4.9	U	4.6	U
4,4'-DDE	6.7	U	6.9	U	4.4	U	4.3	U	13	J	4.9	U	4.6	U
Endrin	6.7	U	6.9	U	4.4	U	4.3	U	16	J	4.9	U	4.6	U
Endosulfan II	6.7	U	6.9	U	4.4	U	4.3	U	56	U	4.9	U	4.6	U
4,4'-DDD	6.7	U	6.9	U	4.4	U	4.3	U	89		4.9	U	4.6	U
Endosulfan sulfate	6.7	U	6.9	U	4.4	U	4.3	U	56	U	4.9	U	4.6	U
4,4'-DDT	6.7	U	6.9	U	4.4	U	4.3	U	56	U	4.9	U	4.6	U
Methoxychlor	35	U	35	U	23	U	22	U	54	J	25	U	24	U
Endrin ketone	6.7	U	6.9	U	4.4	U	4.3	U	46	J	4.9	U	4.6	U
Endrin aldehyde	6.7	U	6.9	U	4.4	U	4.3	U	56	U	4.9	U	4.6	U
alpha-Chlordane	3.5	U	3.5	U	2.3	U	2.2	U	29	U	2.5	U	2.4	U
gamma-Chlordane	3.5	U	3.5	U	2.3	U	2.2	U	19	J	2.5	U	2.4	U
Toxaphene	350	U	350	U	230	U	220	U	2900	U	250	U	240	U
Aroclor-1016	67	U	69	U	44	U	43	U	560	U	49	U	46	U
Aroclor-1221	140	U	140	U	90	U	88	U	1100	U	100	U	93	U
Aroclor-1232	67	U	69	U	44	U	43	U	560	U	49	U	46	U
Aroclor-1242	67	U	69	U	44	U	32	J	560	U	49	U	46	U
Aroclor-1248	67	U	69	U	44	U	43	U	560	U	49	U	46	U
Aroclor-1254	67	U	69	U	35	J	37	J	560	U	49	U	46	U
Aroclor-1260	67	U	69	U	44	U	43	U	560	U	49	U	46	U
Sample wt (g):	30.0		30.0		30.0		30.0		30.0		30.0		30.0	
%Moisture:	51		52		26		24		53		33		28	
Dilution Factor:	1.0		1.0		1.0		1.0		8.0		1.0		1.0	

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: SOIL Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R28	FF-R29	FF-R30	FF-R32			
alpha-BHC	3.8 J	2.5 U	2.9 U	2.9 U			
beta-BHC	30 U	2.5 U	2.9 U	2.9 U			
delta-BHC	17 J	2.5 U	2.9 U	2.9 U			
gamma-BHC (lindane)	30 U	2.5 U	2.9 U	2.9 U			
Heptachlor	30 U	2.5 U	2.9 U	2.9 U			
Aldrin	21 J	2.5 U	2.9 U	2.9 U			
Heptachlor epoxide	30 U	2.5 U	2.9 U	2.9 U			
Endosulfan I	34 J	2.5 U	2.9 U	2.9 U			
Dieldrin	12 J	4.8 U	5.6 U	5.7 U			
4,4'-DDE	6.0 J	4.8 U	5.6 U	5.7 U			
Endrin	57 U	4.8 U	5.6 U	5.7 U			
Endosulfan II	8.7 J	4.8 U	5.6 U	5.7 U			
4,4'-DDD	57 U	4.8 U	5.6 U	5.7 U			
Endosulfan sulfate	57 U	4.8 U	5.6 U	5.7 U			
4,4'-DDT	57 U	4.8 U	5.6 U	5.7 U			
Methoxychlor	300 U	25 U	29 U	29 U			
Endrin ketone	57 U	4.8 U	5.6 U	5.7 U			
Endrin aldehyde	57 U	4.8 U	5.6 U	5.7 U			
alpha-Chlordane	30 U	2.5 U	2.9 U	2.9 U			
gamma-Chlordane	30 U	2.5 U	2.9 U	2.9 U			
Toxaphene	3000 U	250 U	290 U	290 U			
Aroclor-1016	570 U	48 U	56 U	57 U			
Aroclor-1221	1200 U	97 U	110 U	120 U			
Aroclor-1232	570 U	48 U	56 U	57 U			
Aroclor-1242	570 U	48 U	56 U	57 U			
Aroclor-1248	570 U	48 U	56 U	57 U			
Aroclor-1254	570 U	48 U	56 U	57 U			
Aroclor-1260	570 U	48 U	56 U	57 U			
Sample wt (g):	30.0	30.0	30.0	30.0			
%Moisture:	54	31	41	42			
Dilution Factor:	8.0	1.0	1.0	1.0			

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25919 SDG: FFR18 Reviewer: M. FERTITTA

Laboratory: CLAYTN Matrix: WATER Units: ug/L

PESTICIDES/PCBs		FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-R56							
alpha-BHC	0.05 U							
beta-BHC	0.05 U							
delta-BHC	0.05 U							
gamma-BHC (lindane)	0.05 U							
Heptachlor	0.05 U							
Aldrin	0.05 U							
Heptachlor epoxide	0.05 U							
Endosulfan I	0.05 U							
Dieldrin	0.10 U							
4,4'-DDE	0.10 U							
Endrin	0.10 U							
Endosulfan II	0.10 U							
4,4'-DDD	0.10 U							
Endosulfan sulfate	0.10 U							
4,4'-DDT	0.10 U							
Methoxychlor	0.50 U							
Endrin ketone	0.10 U							
Endrin aldehyde	0.10 U							
alpha-Chlordane	0.05 U							
gamma-Chlordane	0.05 U							
Toxaphene	5.0 U							
Aroclor-1016	1.0 U							
Aroclor-1221	2.0 U							
Aroclor-1232	1.0 U							
Aroclor-1242	1.0 U							
Aroclor-1248	1.0 U							
Aroclor-1254	1.0 U							
Aroclor-1260	1.0 U							
Sample Volume (mL):	1000.0							
Dilution Factor:	1.0							

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25919 SDG No. FFR18 SDG Nos. To Follow _____ SAS No. _____ Date Rec 01/20/98

EPA Lab ID: CLAYTN

Lab Location: Novi, MI

Region: 6 Audit No.: 25919/FFR18

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

The laboratory was contacted concerning the following:

8 Form DC-1: one airbill number was incorrect and a response to Remark number 8 was misleading.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?		X	
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Michail J. Fertitta — Michael J. Fertitta/ ESAT Data Reviewer — Date 01/30/98

Audited by: _____ — _____ — Date _____

Audited by: _____ — _____ — Date _____

Signature — Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature — Printed Name/Title

DC-2___

00025

Rev. 3/97

In Reference To
Case 25919 SDG FFR18
ESAT File No. O-1879

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call:	January 29, 1998
Laboratory Name:	CLAYTN
Lab Contact:	Kelly Kolb
Region:	6
Regional Contact:	Michael J. Fertitta - ESAT
Call initiated by:	_____Laboratory ___X___Region

In reference to data for the Pest/PCB fraction:

Summary of Questions/Issues:

The reviewer was unable to validate the Form 7 results for PEM02 analyzed on column DB-608 because the quantitation report was omitted from the package.

Resolution:

Ms. Kolb will FAX the quantitation report today. The original page will be requested with the other resubmission items when review of the package is complete.

Michael J. Fertitta
Signature

01/29/98
Date

00026

In Reference To
Case 25919 SDG FFR18
ESAT File No. O-1879
Page 1 of 3 Pages

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: February 5, 1998
Laboratory Name: CLAYTN
Lab Contact: Kelly Kolb
Region: 6
Regional Contact: Michael J. Fertitta - ESAT
FAX initiated by: Laboratory X Region

In reference to data for the following fractions:

CSF Deliverables VOA BNA Pest/PCB

Summary of Questions/Issues:

A. CSF Deliverables

1. The following problems were noted with the SDG Narrative. Please resubmit the SDG Narrative with the appropriate corrections.

   - The cooler temperature (pages 2101 to 2103) was not recorded (OLM03.2, A-5, 4.2.1.2.3.5).
   - The sample receipt problems itemized on page 2108 were not reported as prescribed in that Record of Communication.

2. The following problems were noted on Page 3 of Form DC-1 (page 2103). Please resubmit page 2103 with the appropriate corrections.

   - TR/COC Record 368870 (page 3) indicates that the airbill number should be 2423937434, not 2423937530.
   - The response to Remark number 8 in the left-hand column is misleading considering the leakage problem discussed on page 2108.

3. According to the contract (OLM03.0, pages B-24 and B-26, Sections 2.6.5.3 and 2.6.5.4), the "Raw QC Data" should follow "Standards Data" in the CSF package. Please follow the contract-specifications in compiling future CSF cases.

00027

B. VOA

The calibrations for instrument HP-2B (pages 243, 247, 251, 255, 261, and 292) employed mass 61 instead of mass 96 as the quantitation ion for total 1,2-dichloroethene (OLM03.2; D-23/VOA, 9.3.4.1 and D-57/VOA, Table 2). Please resubmit the SDG Narrative, adding an explanation that justifies this contractual deviation.

C. BNA

1. The instrument calibrations (pages 1063, 1067, 1070, 1074, 1078, 1087, 1091, 1096, 1101, 1106, 1116, 1124, and 1132) employed mass 63 instead of mass 93 as the quantitation ion for bis(2-chloroethyl)ether (OLM03.2; D-22/SVOA, 9.3.4.1 and D-64/SVOA, Table 4). Please resubmit the SDG Narrative, adding an explanation that justifies this contractual deviation.

2. The alkanes found in the samples (pages 415, 416, 473, 528, 529, 573, 574, 670 to 672, 745, 746, 807, 808, 890, 927, 928, 975, 976, 1017, and 1018) should have been reported by class in the SDG Narrative (OLM03.2, D-45/SVOA, 11.1.2.5.8). Please resubmit the SDG Narrative with the proper corrections.

D. Pest/PCB

1. Using the correct equation (OLM03.2, D-26/PEST, 9.2.4.9, EQ. 9), some of the %D's on Forms 7D and 7E should have negative values. Please correct and resubmit the Forms (pages 1570 to 1583).

2. As discussed by phone, the quantitation report was omitted for PEM02 from DB-608. Thank you for your prompt FAX. At this time, please submit the original for the package (paginated as page 1754A).

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

00028

The EPA expects the laboratory to look into the above items and submit the data within 7 days to:

Attn: Mahmoud El-Feky - U.S. EPA
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2993.

Michael J. Fertitta — 02/05/98
Signature — Date

Distribution: (1) Lab Copy, (2) Region Copy

00029

#4

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC		AIRBORNE EXPRESS

Regional Information	Sampler (Name)	Airbill Number
	MARSHALL CEDILOTE	2423·17434

Non-Superfund Program	Sampler Signature	5. Ship To
	Marshall Cedilote	CLAYTON ENVIRONMENTAL CONSULTANTS 22345 ROETHEL DRIVE NOVI, MI 48375 ATTN: KELLY KOLB

Site Name: McGINNIS

City, State: GALVESTON, TX

Site Spill ID:

3. Purpose*

Lead: [X] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI

Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
~~FFR68~~	~~4~~	~~LOW~~	~~GRAB~~	~~5~~	~~X~~				~~6-164978-9~~	~~FB-03~~	~~12/11/97 1855~~			~~—~~ CMS 12/11/97
FFR56	4	LOW	GRAB	5	X	X	X		6-164817-19	ER-02	12/11/97 1750	MFHL84	MC	R
FFR68	4	LOW	GRAB	5	X				6-164978-9	FB-03	12/11/97 1755	—	MC	

Shipment for Case Complete? (Y/N): Yes

Page 1 of 1

Sample(s) to be Used for Laboratory QC:

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Cedilote	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

EA21-012-15 REV

368870

0003

#3B

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC		AIRBORNE EXPRESS

Regional Information

Sampler (Name): WESLEY NEWBERRY

Airbill Number: 2423937530

Non-Superfund Program

Sampler Signature: [signature]

Site Name: MCGINNIS

City, State: GALVESTON, TX

Site Spill ID:

3. Purpose*
- Lead: [X] SF [ ] PRP [ ] ST [ ] FED
- Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI
- Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: CLAYTON ENV. CONSULTANTS
22345 ROETHEL DRIVE
NOVI, MI 48375
ATTN: KELLY KOLB

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR19	5	LOW	GRAB	5	X	X	X		6-164966-69	SE-14	12/11/97 1330	MFHL41	SP	—
FFR30	5	LOW	GRAB	5	X	X	X		6-163913-16	SE-01	12/11/97 1600	MFHL52	SP	—
FFR32	5	LOW	COMP	5	X	X	X		6-163925-28	SE-03	12/11/97 1620	MFHL54	SP	—

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Yes	2 of 2	FFR30	Stephanie Pogue	

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Cedeleon	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

00032

11 JA

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No. 6	Sampling Co. TNRCC	4. Date Shipped	Carrier AIRBORNE EXPRESS
Regional Information		Sampler (Name) WESLEY NEWBERRY		Airbill Number 2423937530	
Non-Superfund Program		Sampler Signature		5. Ship To CLAYTON ENVIRONMENTAL CONSULTANTS 22345 ROETHEL DRIVE NOVI, MI 48375 ATTN: KELLY KOLB	
Site Name MC GINNIS		3. Purpose* Lead: [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD			
City, State GALVESTON, TX	Site Spill ID				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
~~FFR27~~	~~5~~	~~LOW~~	~~GRAB~~	~~5~~	~~X~~	~~X~~	~~X~~		~~6-163945-48~~	~~SE-04~~	~~12/11/97 1050~~	~~MFHL49~~	~~WN~~	~~—~~ CVS 12/4/97
~~FFR28~~	~~5~~	~~LOW~~	~~GRAB~~	~~5~~	~~X~~	~~X~~	~~X~~		~~6-163959-62~~	~~SE-05~~	~~12/11/97 1130~~	~~MFHL50~~	~~WN~~	~~—~~ CVS 12/11/97
FFR29	5	LOW	GRAB	5	X	X	X		6-163965-68	SE-06	12/11/97 1115	MFHL51	WN	—
FFR24	5	LOW	GRAB	5	X	X	X		6-163976-79	SE-07	12/11/97 1145	MFHL46	WN	—
FFR27	5	LOW	COMP	5	X	X	X		6-163945-48	SE-04	12/11/97 1050	MFHL49	WN	—
FFR28	5	LOW	COMP	5	X	X	X		6-163959-62	SE-05	12/11/97 1130	MFHL50	WN	—
FFR25	5	LOW	GRAB	5	X	X	X		6-163988-91	SE-08	12/11/97 1235	MFHL47	SP	—
FFR23	5	LOW	GRAB	5	X	X	X		6-164940-43	SE-12	12/11/97 1220	MFHL45	WN	D(FFR22)
FFR22	5	LOW	GRAB	5	X	X	X		6-164926-29	SE-11	12/11/97 1215	MFHL44	WN	—
FFR18	5	LOW	GRAB	5	X	X	X		6-164953,55	SE-13	12/11/97 1315	MFHL40	SP	—

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Yes	1 of 2	1=FFR30	Stephanie Pogue	

00033

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Cedotal	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

368857

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR18

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-001

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8747

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 50 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20.	U
74-83-9	Bromomethane	20.	U
75-01-4	Vinyl Chloride	20.	U
75-00-3	Chloroethane	20.	U
75-09-2	Methylene Chloride	75.	B
67-64-1	Acetone	62.	B
75-15-0	Carbon Disulfide	13.	JB
75-35-4	1,1-Dichloroethene	20.	U
75-34-3	1,1-Dichloroethane	20.	U
540-59-0	1,2-Dichloroethene (total)	20.	U
67-66-3	Chloroform	20.	U
107-06-2	1,2-Dichloroethane	20.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	20.	U
56-23-5	Carbon Tetrachloride	20.	U
75-27-4	Bromodichloromethane	20.	U
78-87-5	1,2-Dichloropropane	20.	U
10061-01-5	cis-1,3-Dichloropropene	20.	U
79-01-6	Trichloroethene	20.	U
124-48-1	Dibromochloromethane	20.	U
79-00-5	1,1,2-Trichloroethane	20.	U
71-43-2	Benzene	20.	U
10061-02-6	trans-1,3-Dichloropropene	20.	U
75-25-2	Bromoform	20.	U
108-10-1	4-Methyl-2-Pentanone	20.	U
591-78-6	2-Hexanone	20.	U
127-18-4	Tetrachloroethene	20.	U
79-34-5	1,1,2,2-Tetrachloroethane	20.	U
108-88-3	Toluene	20.	U
108-90-7	Chlorobenzene	20.	U
100-41-4	Ethylbenzene	20.	U
100-42-5	Styrene	20.	U
1330-20-7	Xylene (total)	20.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR18

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-001

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8747

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 50 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	110-54-3	Hexane	4.17	10.	JN
2.	541-05-9	Cyclotrisiloxane, hexamethyl	12.58	18.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	17.23	680.	JNB
4.		Unknown hydrocarbon	18.55	16.	J
5.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.79	190.	JNB
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR19

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-002

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8748

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 47 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19.	U
74-83-9	Bromomethane	19.	U
75-01-4	Vinyl Chloride	19.	U
75-00-3	Chloroethane	19.	U
75-09-2	Methylene Chloride	71.	B
67-64-1	Acetone	39.	B
75-15-0	Carbon Disulfide	8.	JB
75-35-4	1,1-Dichloroethene	19.	U
75-34-3	1,1-Dichloroethane	19.	U
540-59-0	1,2-Dichloroethene (total)	19.	U
67-66-3	Chloroform	19.	U
107-06-2	1,2-Dichloroethane	19.	U
78-93-3	2-Butanone	19.	U
71-55-6	1,1,1-Trichloroethane	19.	U
56-23-5	Carbon Tetrachloride	19.	U
75-27-4	Bromodichloromethane	19.	U
78-87-5	1,2-Dichloropropane	19.	U
10061-01-5	cis-1,3-Dichloropropene	19.	U
79-01-6	Trichloroethene	19.	U
124-48-1	Dibromochloromethane	19.	U
79-00-5	1,1,2-Trichloroethane	19.	U
71-43-2	Benzene	19.	U
10061-02-6	trans-1,3-Dichloropropene	19.	U
75-25-2	Bromoform	19.	U
108-10-1	4-Methyl-2-Pentanone	19.	U
591-78-6	2-Hexanone	19.	U
127-18-4	Tetrachloroethene	19.	U
79-34-5	1,1,2,2-Tetrachloroethane	19.	U
108-88-3	Toluene	19.	U
108-90-7	Chlorobenzene	19.	U
100-41-4	Ethylbenzene	19.	U
100-42-5	Styrene	19.	U
1330-20-7	Xylene (total)	19.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR19

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-002

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8748

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 47 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	Cyclotetrasiloxane, octameth	17.16	500.	JNB
2.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.76	160.	JNB
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR22

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-003

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8749

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 34 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15.	U
74-83-9	Bromomethane	15.	U
75-01-4	Vinyl Chloride	15.	U
75-00-3	Chloroethane	15.	U
75-09-2	Methylene Chloride	50.	B
67-64-1	Acetone	30.	B
75-15-0	Carbon Disulfide	9.	JB
75-35-4	1,1-Dichloroethene	15.	U
75-34-3	1,1-Dichloroethane	15.	U
540-59-0	1,2-Dichloroethene (total)	15.	U
67-66-3	Chloroform	15.	U
107-06-2	1,2-Dichloroethane	15.	U
78-93-3	2-Butanone	15.	U
71-55-6	1,1,1-Trichloroethane	15.	U
56-23-5	Carbon Tetrachloride	15.	U
75-27-4	Bromodichloromethane	15.	U
78-87-5	1,2-Dichloropropane	15.	U
10061-01-5	cis-1,3-Dichloropropene	15.	U
79-01-6	Trichloroethene	15.	U
124-48-1	Dibromochloromethane	15.	U
79-00-5	1,1,2-Trichloroethane	15.	U
71-43-2	Benzene	15.	U
10061-02-6	trans-1,3-Dichloropropene	15.	U
75-25-2	Bromoform	15.	U
108-10-1	4-Methyl-2-Pentanone	15.	U
591-78-6	2-Hexanone	15.	U
127-18-4	Tetrachloroethene	15.	U
79-34-5	1,1,2,2-Tetrachloroethane	15.	U
108-88-3	Toluene	15.	U
108-90-7	Chlorobenzene	15.	U
100-41-4	Ethylbenzene	15.	U
100-42-5	Styrene	15.	U
1330-20-7	Xylene (total)	15.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR22

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-003

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8749

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 34 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	12.53	9.	JNB
2.	556-67-2	Cyclotetrasiloxane, octameth	17.15	490.	JNB
3.		Unknown hydrocarbon	18.51	12.	J
4.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.74	98.	JNB
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR23

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-004

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8750

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 25 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13.	U
74-83-9	Bromomethane	13.	U
75-01-4	Vinyl Chloride	13.	U
75-00-3	Chloroethane	13.	U
75-09-2	Methylene Chloride	55.	B
67-64-1	Acetone	25.	B
75-15-0	Carbon Disulfide	5.	JB
75-35-4	1,1-Dichloroethene	13.	U
75-34-3	1,1-Dichloroethane	13.	U
540-59-0	1,2-Dichloroethene (total)	13.	U
67-66-3	Chloroform	13.	U
107-06-2	1,2-Dichloroethane	13.	U
78-93-3	2-Butanone	13.	U
71-55-6	1,1,1-Trichloroethane	13.	U
56-23-5	Carbon Tetrachloride	13.	U
75-27-4	Bromodichloromethane	13.	U
78-87-5	1,2-Dichloropropane	13.	U
10061-01-5	cis-1,3-Dichloropropene	13.	U
79-01-6	Trichloroethene	13.	U
124-48-1	Dibromochloromethane	13.	U
79-00-5	1,1,2-Trichloroethane	13.	U
71-43-2	Benzene	13.	U
10061-02-6	trans-1,3-Dichloropropene	13.	U
75-25-2	Bromoform	13.	U
108-10-1	4-Methyl-2-Pentanone	13.	U
591-78-6	2-Hexanone	13.	U
127-18-4	Tetrachloroethene	13.	U
79-34-5	1,1,2,2-Tetrachloroethane	13.	U
108-88-3	Toluene	13.	U
108-90-7	Chlorobenzene	13.	U
100-41-4	Ethylbenzene	13.	U
100-42-5	Styrene	13.	U
1330-20-7	Xylene (total)	13.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR23

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-004

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8750

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 25 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	Cyclotetrasiloxane, octameth	17.12	520.	JNB
2.		Unknown hydrocarbon	18.47	7.	J
3.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.74	130.	JNB
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8751

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 52 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	21.	U
74-83-9	Bromomethane	21.	U
75-01-4	Vinyl Chloride	21.	U
75-00-3	Chloroethane	21.	U
75-09-2	Methylene Chloride	62.	B
67-64-1	Acetone	91.	B
75-15-0	Carbon Disulfide	4.	JB
75-35-4	1,1-Dichloroethene	21.	U
75-34-3	1,1-Dichloroethane	21.	U
540-59-0	1,2-Dichloroethene (total)	21.	U
67-66-3	Chloroform	21.	U
107-06-2	1,2-Dichloroethane	21.	U
78-93-3	2-Butanone	14.	J
71-55-6	1,1,1-Trichloroethane	21.	U
56-23-5	Carbon Tetrachloride	21.	U
75-27-4	Bromodichloromethane	21.	U
78-87-5	1,2-Dichloropropane	21.	U
10061-01-5	cis-1,3-Dichloropropene	21.	U
79-01-6	Trichloroethene	21.	U
124-48-1	Dibromochloromethane	21.	U
79-00-5	1,1,2-Trichloroethane	21.	U
71-43-2	Benzene	21.	U
10061-02-6	trans-1,3-Dichloropropene	21.	U
75-25-2	Bromoform	21.	U
108-10-1	4-Methyl-2-Pentanone	21.	U
591-78-6	2-Hexanone	21.	U
127-18-4	Tetrachloroethene	21.	U
79-34-5	1,1,2,2-Tetrachloroethane	21.	U
108-88-3	Toluene	21.	U
108-90-7	Chlorobenzene	21.	U
100-41-4	Ethylbenzene	21.	U
100-42-5	Styrene	21.	U
1330-20-7	Xylene (total)	15.	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR24

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8751

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 52 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	107-39-1	1-Pentene, 2,4,4-trimethyl-	8.66	340.	JN
2.		Unknown	8.82	140.	J
3.	565-77-5	2-Pentene, 2,3,4-trimethyl-	9.22	100.	JN
4.		Unknown	9.56	100 ~~104~~.	J
5.	565-77-5	2-Pentene, 2,3,4-trimethyl-	10.40	12/18/97 180.	JN
6.		3-HEXENE, 3,4-DIMETHYL-	11.97	130.	J
7.		Unknown	13.10	37.	J
8.		Unknown hydrocarbon	14.62	41.	J
9.		Unknown hydrocarbon	15.24	60.	J
10.		Unknown hydrocarbon	15.78	77.	J
11.	79-92-5	Camphene + Unknown	16.54	51.	JN
12.		Unknown	16.70	43.	J
13.	556-67-2	Cyclotetrasiloxane, octameth	17.14	770.	JNB
14.		Unknown hydrocarbon	17.59	1100.	J
15.		Unknown hydrocarbon	17.78	1400.	J
16.		Unknown hydrocarbon	18.30	60.	J
17.		Unknown	18.45	220.	J
18.		Unknown	18.81	63.	J
19.		Unknown	19.11	120.	J
20.	493-01-6	Naphthalene, decahydro-, cis	19.25	130.	JN
21.		Unknown	19.75	170.	J
22.		Unknown hydrocarbon	19.98	58.	J
23.		Unknown	20.14	60.	J
24.		Unknown	20.27	54.	J
25.		Unknown	20.42	270.	J
26.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.72	200.	JNB
27.		Unknown	20.98	75.	J
28.		Unknown	21.16	46.	J
29.		Unknown hydrocarbon	21.77	65.	J
30.		Unknown	21.92	37.	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR25

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-006

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8752

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 32 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR25

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-006

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8752

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 32 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	12.51	9.	JNB
2.		Unknown hydrocarbon	15.66	13.	J
3.	556-67-2	Cyclotetrasiloxane, octameth	17.14	360.	JNB
4.		Unknown hydrocarbon	17.77	13.	J
5.		Unknown hydrocarbon	18.48	9.	J
6.		Unknown hydrocarbon	19.96	33.	J
7.		Unknown	20.42	32.	J
8.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.74	190.	JNB
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR27

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-007

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8753

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 31 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	36.	B
67-64-1	Acetone	36.	B
75-15-0	Carbon Disulfide	4.	JB
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR27

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-007

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8753

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 31 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	110-54-3	Hexane	4.15	7.	JN
2.	541-05-9	Cyclotrisiloxane, hexamethyl	12.54	9.	JNB
3.	556-67-2	Cyclotetrasiloxane, octameth	17.15	390.	JNB
4.		Unknown hydrocarbon	18.48	9.	J
5.		Unknown	19.95	11.	J
6.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.73	120.	JNB
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR28

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-008

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8754

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 47 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19.	U
74-83-9	Bromomethane	19.	U
75-01-4	Vinyl Chloride	19.	U
75-00-3	Chloroethane	19.	U
75-09-2	Methylene Chloride	34.	B
67-64-1	Acetone	31.	B
75-15-0	Carbon Disulfide	3.	JB
75-35-4	1,1-Dichloroethene	19.	U
75-34-3	1,1-Dichloroethane	19.	U
540-59-0	1,2-Dichloroethene (total)	19.	U
67-66-3	Chloroform	19.	U
107-06-2	1,2-Dichloroethane	19.	U
78-93-3	2-Butanone	19.	U
71-55-6	1,1,1-Trichloroethane	19.	U
56-23-5	Carbon Tetrachloride	19.	U
75-27-4	Bromodichloromethane	19.	U
78-87-5	1,2-Dichloropropane	19.	U
10061-01-5	cis-1,3-Dichloropropene	19.	U
79-01-6	Trichloroethene	19.	U
124-48-1	Dibromochloromethane	19.	U
79-00-5	1,1,2-Trichloroethane	19.	U
71-43-2	Benzene	19.	U
10061-02-6	trans-1,3-Dichloropropene	19.	U
75-25-2	Bromoform	19.	U
108-10-1	4-Methyl-2-Pentanone	19.	U
591-78-6	2-Hexanone	19.	U
127-18-4	Tetrachloroethene	19.	U
79-34-5	1,1,2,2-Tetrachloroethane	19.	U
108-88-3	Toluene	19.	U
108-90-7	Chlorobenzene	19.	U
100-41-4	Ethylbenzene	19.	U
100-42-5	Styrene	19.	U
1330-20-7	Xylene (total)	19.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR28

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-008

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8754

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 47 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	12.52	33.	JNB
2.	556-67-2	Cyclotetrasiloxane, octameth	17.15	890.	JNB
3.		Unknown hydrocarbon	18.48	13.	J
4.		Unknown siloxane	20.75	300.	J
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR29

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-009

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8755

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 21 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13.	U
74-83-9	Bromomethane	13.	U
75-01-4	Vinyl Chloride	13.	U
75-00-3	Chloroethane	13.	U
75-09-2	Methylene Chloride	36.	B
67-64-1	Acetone	17.	B
75-15-0	Carbon Disulfide	4.	JB
75-35-4	1,1-Dichloroethene	13.	U
75-34-3	1,1-Dichloroethane	13.	U
540-59-0	1,2-Dichloroethene (total)	13.	U
67-66-3	Chloroform	13.	U
107-06-2	1,2-Dichloroethane	13.	U
78-93-3	2-Butanone	13.	U
71-55-6	1,1,1-Trichloroethane	13.	U
56-23-5	Carbon Tetrachloride	13.	U
75-27-4	Bromodichloromethane	13.	U
78-87-5	1,2-Dichloropropane	13.	U
10061-01-5	cis-1,3-Dichloropropene	13.	U
79-01-6	Trichloroethene	13.	U
124-48-1	Dibromochloromethane	13.	U
79-00-5	1,1,2-Trichloroethane	13.	U
71-43-2	Benzene	13.	U
10061-02-6	trans-1,3-Dichloropropene	13.	U
75-25-2	Bromoform	13.	U
108-10-1	4-Methyl-2-Pentanone	13.	U
591-78-6	2-Hexanone	13.	U
127-18-4	Tetrachloroethene	13.	U
79-34-5	1,1,2,2-Tetrachloroethane	13.	U
108-88-3	Toluene	13.	U
108-90-7	Chlorobenzene	13.	U
100-41-4	Ethylbenzene	13.	U
100-42-5	Styrene	13.	U
1330-20-7	Xylene (total)	13.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR29

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-009

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8755

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 21 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	Cyclotetrasiloxane, octameth	17.16	290.	JNB
2.		Unknown siloxane	20.75	120.	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8756

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 40 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17.	U
74-83-9	Bromomethane	17.	U
75-01-4	Vinyl Chloride	17.	U
75-00-3	Chloroethane	17.	U
75-09-2	Methylene Chloride	52.	B
67-64-1	Acetone	29.	B
75-15-0	Carbon Disulfide	6.	JB
75-35-4	1,1-Dichloroethene	17.	U
75-34-3	1,1-Dichloroethane	17.	U
540-59-0	1,2-Dichloroethene (total)	17.	U
67-66-3	Chloroform	17.	U
107-06-2	1,2-Dichloroethane	17.	U
78-93-3	2-Butanone	2.	J
71-55-6	1,1,1-Trichloroethane	17.	U
56-23-5	Carbon Tetrachloride	17.	U
75-27-4	Bromodichloromethane	17.	U
78-87-5	1,2-Dichloropropane	17.	U
10061-01-5	cis-1,3-Dichloropropene	17.	U
79-01-6	Trichloroethene	17.	U
124-48-1	Dibromochloromethane	17.	U
79-00-5	1,1,2-Trichloroethane	17.	U
71-43-2	Benzene	17.	U
10061-02-6	trans-1,3-Dichloropropene	17.	U
75-25-2	Bromoform	17.	U
108-10-1	4-Methyl-2-Pentanone	17.	U
591-78-6	2-Hexanone	17.	U
127-18-4	Tetrachloroethene	17.	U
79-34-5	1,1,2,2-Tetrachloroethane	17.	U
108-88-3	Toluene	17.	U
108-90-7	Chlorobenzene	17.	U
100-41-4	Ethylbenzene	17.	U
100-42-5	Styrene	17.	U
1330-20-7	Xylene (total)	17.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR30

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8756

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 40 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	12.53	19.	JNB
2.	556-67-2	Cyclotetrasiloxane, octameth	17.19	550.	JNB
3.		Unknown siloxane	20.76	160.	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR32

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-011

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8757

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 30 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	71.	B
67-64-1	Acetone	24.	B
75-15-0	Carbon Disulfide	6.	JB
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-06-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-Pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
1330-20-7	Xylene (total)	14.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR32

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-011

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8757

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. 30 Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown hydrocarbon	4.15	8.	J
2.	556-67-2	Cyclotetrasiloxane, octameth	17.17	51.	JNB
3.		Unknown siloxane	20.75	18.	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR56

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-012

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9692

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR56

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-012

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9692

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	2-Propanol	3.12	520.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR68

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-013

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9693

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	14.	
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	2.	J
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR68

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-013

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9693

Level: (low/med) LOW Date Received:12/15/97

% Moisture: not dec. Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	2-Propanol	3.15	14.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

CASE 25919
SDG# FFR18

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: VBLKBN

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-014

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8743

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

% Moisture: not dec. 0 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

CASE 25919
SDG# FFR18

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: VBLKBN

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-014

Sample wt/vol: 5.00 (g/ml) G Lab File ID: B8743

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

% Moisture: not dec. 0 Date Analyzed:12/16/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	12.54	150.	JN
2.	556-67-2	Cyclotetrasiloxane, octameth	17.18	2500.	JN
3.	3789-85-3	Benzoic acid, 2-[(trimethyls	20.76	500.	JN
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKCX

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-016

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9691

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

% Moisture: not dec. Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

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

CASE 25919
SDG# FFR18

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: VBLKCX

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-016

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: C9691

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

% Moisture: not dec. Date Analyzed:12/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	75-07-0	Acetaldehyde	1.80	9.	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR18

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1716

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 51 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	40.	J
111-44-4	bis(2-Chloroethyl)ether	670.	U
95-57-8	2-Chlorophenol	670.	U
541-73-1	1,3-Dichlorobenzene	670.	U
106-46-7	1,4-Dichlorobenzene	670.	U
95-50-1	1,2-Dichlorobenzene	670.	U
95-48-7	2-Methylphenol	670.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	670.	U
106-44-5	4-Methylphenol	670.	U
621-64-7	N-Nitroso-di-n-propylamine	670.	U
67-72-1	Hexachloroethane	670.	U
98-95-3	Nitrobenzene	670.	U
78-59-1	Isophorone	670.	U
88-75-5	2-Nitrophenol	670.	U
105-67-9	2,4-Dimethylphenol	670.	U
111-91-1	bis(2-Chloroethoxy)methane	670.	U
120-83-2	2,4-Dichlorophenol	670.	U
120-82-1	1,2,4-Trichlorobenzene	670.	U
91-20-3	Naphthalene	670.	U
106-47-8	4-Chloroaniline	670.	U
87-68-3	Hexachlorobutadiene	670.	U
59-50-7	4-Chloro-3-methylphenol	670.	U
91-57-6	2-Methylnaphthalene	670.	U
77-47-4	Hexachlorocyclopentadiene	670.	U
88-06-2	2,4,6-Trichlorophenol	670.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	670.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	670.	U
208-96-8	Acenaphthylene	670.	U
606-20-2	2,6-Dinitrotoluene	670.	U
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	670.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR18

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1716

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 51 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	670.	U
121-14-2	2,4-Dinitrotoluene	670.	U
84-66-2	Diethylphthalate	670.	U
7005-72-3	4-Chlorophenyl-phenylether	670.	U
86-73-7	Fluorene	670.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	670.	U
101-55-3	4-Bromophenyl-phenylether	670.	U
118-74-1	Hexachlorobenzene	670.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	670.	U
120-12-7	Anthracene	670.	U
86-74-8	Carbazole	670.	U
84-74-2	Di-n-butylphthalate	670.	U
206-44-0	Fluoranthene	670.	U
129-00-0	Pyrene	670.	U
85-68-7	Butylbenzylphthalate	670.	U
91-94-1	3,3'-Dichlorobenzidine	670.	U
56-55-3	Benzo(a)anthracene	670.	U
218-01-9	Chrysene	670.	U
117-81-7	bis(2-Ethylhexyl)phthalate	58.	JB
117-84-0	Di-n-octylphthalate	670.	U
205-99-2	Benzo(b)fluoranthene	670.	U
207-08-9	Benzo(k)fluoranthene	670.	U
50-32-8	Benzo(a)pyrene	670.	U
193-39-5	Indeno(1,2,3-cd)pyrene	670.	U
53-70-3	Dibenz(a,h)anthracene	670.	U
191-24-2	Benzo(g,h,i)perylene	670.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FFR18

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-001

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1716

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 51 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs Found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.86	3200.	J
2.	822-67-3	2-Cyclohexen-1-ol	4.46	330.	JN
3.		Unknown	5.19	390.	J
4.		Unknown	5.36	250.	J
5.		trans-3-Hexene-2,5-dione	5.44	1900.	JB
6.		Unknown ketone	5.60	520.	J
7.		Unknown	6.06	2300.	J
8.		Unknown	6.34	2100.	J
9.		Unknown	6.71	280.	J
10.		Unknown	21.35	190.	J
11.		Unknown	21.83	300.	J
12.		DI-(2-ETHYLHEXYL) ESTER OF A	22.94	250.	J
13.		Unknown	23.74	180.	J
14.		NAUGARD 431	23.79	180.	J
15.		2-Methyl-4,6-bis(1-phenyleth	23.90	170.	J
16.		Unknown	24.31	360.	J
17.	55125-03-6	Phenanthrene, 3,9-bis(1,1-di	24.58	300.	JN
18.		Unknown	25.49	180.	J
19.	28553-12-0	1,2-Benzenedicarboxylic acid	25.97	360.	JN
20.		Unknown phthalate	26.66	170.	J
21.		Unknown	29.97	180.	J
22.		Unknown	30.67	170.	J
23.		Unknown	31.52	300.	J
24.		Unknown	34.01	460.	J
25.		Unknown	34.84	930.	J
26.	514-07-8	D-Friedoolean-14-en-3-one	36.30	1600.	JN
27.		Unknown	36.70	170.	J
28.		Unknown	36.87	200.	J
29.		Unknown	37.12	260.	J
30.		Unknown	37.62	2900.	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR19

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1717

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 52 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	690.	U
111-44-4	bis(2-Chloroethyl)ether	690.	U
95-57-8	2-Chlorophenol	690.	U
541-73-1	1,3-Dichlorobenzene	690.	U
106-46-7	1,4-Dichlorobenzene	690.	U
95-50-1	1,2-Dichlorobenzene	690.	U
95-48-7	2-Methylphenol	690.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	690.	U
106-44-5	4-Methylphenol	690.	U
621-64-7	N-Nitroso-di-n-propylamine	690.	U
67-72-1	Hexachloroethane	690.	U
98-95-3	Nitrobenzene	690.	U
78-59-1	Isophorone	690.	U
88-75-5	2-Nitrophenol	690.	U
105-67-9	2,4-Dimethylphenol	690.	U
111-91-1	bis(2-Chloroethoxy)methane	690.	U
120-83-2	2,4-Dichlorophenol	690.	U
120-82-1	1,2,4-Trichlorobenzene	690.	U
91-20-3	Naphthalene	690.	U
106-47-8	4-Chloroaniline	690.	U
87-68-3	Hexachlorobutadiene	690.	U
59-50-7	4-Chloro-3-methylphenol	690.	U
91-57-6	2-Methylnaphthalene	690.	U
77-47-4	Hexachlorocyclopentadiene	690.	U
88-06-2	2,4,6-Trichlorophenol	690.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	690.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	690.	U
208-96-8	Acenaphthylene	690.	U
606-20-2	2,6-Dinitrotoluene	690.	U
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	690.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR19

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1717

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 52 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	690.	U
121-14-2	2,4-Dinitrotoluene	690.	U
84-66-2	Diethylphthalate	690.	U
7005-72-3	4-Chlorophenyl-phenylether	690.	U
86-73-7	Fluorene	690.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	690.	U
101-55-3	4-Bromophenyl-phenylether	690.	U
118-74-1	Hexachlorobenzene	690.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	690.	U
120-12-7	Anthracene	690.	U
86-74-8	Carbazole	690.	U
84-74-2	Di-n-butylphthalate	690.	U
206-44-0	Fluoranthene	690.	U
129-00-0	Pyrene	690.	U
85-68-7	Butylbenzylphthalate	690.	U
91-94-1	3,3'-Dichlorobenzidine	690.	U
56-55-3	Benzo(a)anthracene	690.	U
218-01-9	Chrysene	690.	U
117-81-7	bis(2-Ethylhexyl)phthalate	64.	JB
117-84-0	Di-n-octylphthalate	690.	U
205-99-2	Benzo(b)fluoranthene	690.	U
207-08-9	Benzo(k)fluoranthene	690.	U
50-32-8	Benzo(a)pyrene	690.	U
193-39-5	Indeno(1,2,3-cd)pyrene	690.	U
53-70-3	Dibenz(a,h)anthracene	690.	U
191-24-2	Benzo(g,h,i)perylene	690.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR19

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-002

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1717

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 52 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR13

Number TICs Found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.45	550.	JN
2.		Unknown	5.19	630.	J
3.		Unknown	5.36	260.	J
4.		trans-3-Hexene-2,5-dione	5.44	2000.	JB
5.		Unknown ketone	5.59	610.	J
6.		Unknown	6.05	2500.	J
7.		Unknown	6.33	1900.	J
8.		Unknown	6.73	550.	J
9.	123-79-5	Hexanedioic acid, dioctyl es	22.94	370.	JNB
10.		Unknown	23.25	230.	J
11.		Unknown	23.59	300.	J
12.		2-Methyl-4,6-bis(1-phenyleth	23.79	320.	J
13.		Unknown	24.31	270.	J
14.	55125-03-6	Phenanthrene, 3,9-bis(1,1-di	24.58	580.	JN
15.		Unknown	24.74	380.	J
16.		Unknown phthalate	25.96	580.	J
17.		Unknown	30.13	300.	J
18.		Unknown	30.67	320.	J
19.		Unknown	31.53	410.	J
20.		Unknown	33.77	1600.	J
21.		Unknown	34.01	920.	J
22.		Unknown hydrocarbon	34.85	760.	J
23.		Unknown	35.97	270.	J
24.	514-07-8	D-Friedoolean-14-en-3-one	36.31	3800.	JN
25.		Unknown	36.71	240.	J
26.		Unknown hydrocarbon	36.87	980.	J
27.		Unknown	37.12	1100.	J
28.		Unknown	37.48	450.	J
29.		Unknown	37.63	3600.	J
30.	1058-61-3	(24R)-4-STIGMASTEN-3-ONE	38.99	380.	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR22

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-003

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1718

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 26 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440.	U
111-44-4	bis(2-Chloroethyl)ether	440.	U
95-57-8	2-Chlorophenol	440.	U
541-73-1	1,3-Dichlorobenzene	440.	U
106-46-7	1,4-Dichlorobenzene	440.	U
95-50-1	1,2-Dichlorobenzene	440.	U
95-48-7	2-Methylphenol	440.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	440.	U
106-44-5	4-Methylphenol	440.	U
621-64-7	N-Nitroso-di-n-propylamine	440.	U
67-72-1	Hexachloroethane	440.	U
98-95-3	Nitrobenzene	440.	U
78-59-1	Isophorone	440.	U
88-75-5	2-Nitrophenol	440.	U
105-67-9	2,4-Dimethylphenol	440.	U
111-91-1	bis(2-Chloroethoxy)methane	440.	U
120-83-2	2,4-Dichlorophenol	440.	U
120-82-1	1,2,4-Trichlorobenzene	440.	U
91-20-3	Naphthalene	440.	U
106-47-8	4-Chloroaniline	440.	U
87-68-3	Hexachlorobutadiene	440.	U
59-50-7	4-Chloro-3-methylphenol	440.	U
91-57-6	2-Methylnaphthalene	440.	U
77-47-4	Hexachlorocyclopentadiene	440.	U
88-06-2	2,4,6-Trichlorophenol	440.	U
95-95-4	2,4,5-Trichlorophenol	1100.	U
91-58-7	2-Chloronaphthalene	440.	U
88-74-4	2-Nitroaniline	1100.	U
131-11-3	Dimethylphthalate	440.	U
208-96-8	Acenaphthylene	440.	U
606-20-2	2,6-Dinitrotoluene	440.	U
99-09-2	3-Nitroaniline	1100.	U
83-32-9	Acenaphthene	440.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR22

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-003

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1718

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 26 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100.	U
100-02-7	4-Nitrophenol	1100.	U
132-64-9	Dibenzofuran	440.	U
121-14-2	2,4-Dinitrotoluene	440.	U
84-66-2	Diethylphthalate	440.	U
7005-72-3	4-Chlorophenyl-phenylether	440.	U
86-73-7	Fluorene	440.	U
100-01-6	4-Nitroaniline	1100.	U
534-52-1	4,6-Dinitro-2-methylphenol	1100.	U
86-30-6	N-Nitrosodiphenylamine (1)	440.	U
101-55-3	4-Bromophenyl-phenylether	440.	U
118-74-1	Hexachlorobenzene	440.	U
87-86-5	Pentachlorophenol	1100.	U
85-01-8	Phenanthrene	440.	U
120-12-7	Anthracene	440.	U
86-74-8	Carbazole	440.	U
84-74-2	Di-n-butylphthalate	440.	U
206-44-0	Fluoranthene	440.	U
129-00-0	Pyrene	440.	U
85-68-7	Butylbenzylphthalate	440.	U
91-94-1	3,3'-Dichlorobenzidine	440.	U
56-55-3	Benzo(a)anthracene	440.	U
218-01-9	Chrysene	440.	U
117-81-7	bis(2-Ethylhexyl)phthalate	160.	JB
117-84-0	Di-n-octylphthalate	27.	J
205-99-2	Benzo(b)fluoranthene	440.	U
207-08-9	Benzo(k)fluoranthene	440.	U
50-32-8	Benzo(a)pyrene	440.	U
193-39-5	Indeno(1,2,3-cd)pyrene	440.	U
53-70-3	Dibenz(a,h)anthracene	440.	U
191-24-2	Benzo(g,h,i)perylene	440.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR22

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-003

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1718

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 26 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CASE 25919
SDG# FFR19

Number TICs Found: 28

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.46	390.	JN
2.	17257-81-7	Ethanone, 1-(3-ethyloxiranyl	5.18	250.	JN
3.	930-68-7	2-Cyclohexen-1-one	5.36	98.	JN
4.		trans-3-Hexene-2,5-dione	5.44	1500.	JB
5.		Unknown	6.06	1500.	J
6.		Unknown	6.32	190.	J
7.		Unknown	6.73	790.	J
8.		Unknown	7.02	170.	J
9.	7206-21-5	5-Octadecene, (E)-	18.58	460.	JN
10.	57-10-3	Hexadecanoic acid	19.95	100.	JN
11.		Unknown	21.15	140.	J
12.		Unknown	21.21	91.	J
13.		Unknown	21.35	220.	J
14.		Unknown	21.53	120.	J
15.		Unknown	21.83	490.	J
16.		Unknown	22.19	130.	J
17.	123-79-5	Hexanedioic acid, dioctyl es	22.94	350.	JNB
18.		NAUGARD 431	23.79	180.	J
19.		2-Methyl-4,6-bis(1-phenyleth	23.90	200.	J
20.		Unknown phthalate	26.32	180.	J
21.		Unknown phthalate	26.69	240.	J
22.		Unknown	30.56	120.	J
23.		Unknown	34.86	1400.	J
24.		Unknown	35.55	380.	J
25.		Unknown	36.41	180.	J
26.		Unknown	36.69	370.	J
27.		Unknown	38.72	260.	J
28.	1058-61-3	(24R)-4-STIGMASTEN-3-ONE	39.00	340.	JN
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR23

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-004

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1724

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 24 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430.	U
111-44-4	bis(2-Chloroethyl)ether	430.	U
95-57-8	2-Chlorophenol	430.	U
541-73-1	1,3-Dichlorobenzene	430.	U
106-46-7	1,4-Dichlorobenzene	430.	U
95-50-1	1,2-Dichlorobenzene	430.	U
95-48-7	2-Methylphenol	430.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430.	U
106-44-5	4-Methylphenol	430.	U
621-64-7	N-Nitroso-di-n-propylamine	430.	U
67-72-1	Hexachloroethane	430.	U
98-95-3	Nitrobenzene	430.	U
78-59-1	Isophorone	430.	U
88-75-5	2-Nitrophenol	430.	U
105-67-9	2,4-Dimethylphenol	430.	U
111-91-1	bis(2-Chloroethoxy)methane	430.	U
120-83-2	2,4-Dichlorophenol	430.	U
120-82-1	1,2,4-Trichlorobenzene	430.	U
91-20-3	Naphthalene	430.	U
106-47-8	4-Chloroaniline	430.	U
87-68-3	Hexachlorobutadiene	430.	U
59-50-7	4-Chloro-3-methylphenol	430.	U
91-57-6	2-Methylnaphthalene	430.	U
77-47-4	Hexachlorocyclopentadiene	430.	U
88-06-2	2,4,6-Trichlorophenol	430.	U
95-95-4	2,4,5-Trichlorophenol	1100.	U
91-58-7	2-Chloronaphthalene	430.	U
88-74-4	2-Nitroaniline	1100.	U
131-11-3	Dimethylphthalate	430.	U
208-96-8	Acenaphthylene	430.	U
606-20-2	2,6-Dinitrotoluene	430.	U
99-09-2	3-Nitroaniline	1100.	U
83-32-9	Acenaphthene	430.	U

CASE 25919
SDG# FFR18 0533

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR23

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-004

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1724

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 24 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CASE 259
SDG# FFRT

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100.	U
100-02-7	4-Nitrophenol	1100.	U
132-64-9	Dibenzofuran	430.	U
121-14-2	2,4-Dinitrotoluene	430.	U
84-66-2	Diethylphthalate	27.	J
7005-72-3	4-Chlorophenyl-phenylether	430.	U
86-73-7	Fluorene	430.	U
100-01-6	4-Nitroaniline	1100.	U
534-52-1	4,6-Dinitro-2-methylphenol	1100.	U
86-30-6	N-Nitrosodiphenylamine (1)	430.	U
101-55-3	4-Bromophenyl-phenylether	430.	U
118-74-1	Hexachlorobenzene	430.	U
87-86-5	Pentachlorophenol	1100.	U
85-01-8	Phenanthrene	430.	U
120-12-7	Anthracene	430.	U
86-74-8	Carbazole	430.	U
84-74-2	Di-n-butylphthalate	430.	U
206-44-0	Fluoranthene	430.	U
129-00-0	Pyrene	430.	U
85-68-7	Butylbenzylphthalate	430.	U
91-94-1	3,3'-Dichlorobenzidine	430.	U
56-55-3	Benzo(a)anthracene	430.	U
218-01-9	Chrysene	430.	U
117-81-7	bis(2-Ethylhexyl)phthalate	130.	JB
117-84-0	Di-n-octylphthalate	430.	U
205-99-2	Benzo(b)fluoranthene	430.	U
207-08-9	Benzo(k)fluoranthene	430.	U
50-32-8	Benzo(a)pyrene	430.	U
193-39-5	Indeno(1,2,3-cd)pyrene	430.	U
53-70-3	Dibenz(a,h)anthracene	430.	U
191-24-2	Benzo(g,h,i)perylene	430.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR23

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-004

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1724

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 24 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CASE 25919
SDG# FFR18

Number TICs Found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.46	280.	JN
2.		Unknown	5.19	350.	J
3.	930-68-7	2-Cyclohexen-1-one	5.37	91.	JN
4.		trans-3-Hexene-2,5-dione	5.44	1300.	JB
5.		Unknown ketone	5.60	150.	J
6.		Unknown	6.06	1300.	J
7.		Unknown	6.73	660.	J
8.		Unknown	6.91	2200.	J
9.		Unknown	7.01	170.	J
10.		Unknown hydrocarbon	18.58	190.	J
11.		Unknown	19.85	110.	J
12.	57-10-3	Hexadecanoic acid	19.96	230.	JN
13.		Unknown	20.51	90.	J
14.		Unknown	21.83	250.	J
15.	123-79-5	Hexanedioic acid, dioctyl es	22.94	91.	JNB
16.		Unknown	30.58	100.	J
17.		Unknown	34.85	1100.	J
18.		Unknown	35.55	250.	J
19.		Unknown	36.42	160.	J
20.		Unknown	36.68	340.	J
21.		Unknown	37.61	360.	J
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1736

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	21000.	U
111-44-4	bis(2-Chloroethyl)ether	21000.	U
95-57-8	2-Chlorophenol	21000.	U
541-73-1	1,3-Dichlorobenzene	21000.	U
106-46-7	1,4-Dichlorobenzene	21000.	U
95-50-1	1,2-Dichlorobenzene	21000.	U
95-48-7	2-Methylphenol	21000.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	21000.	U
106-44-5	4-Methylphenol	21000.	U
621-64-7	N-Nitroso-di-n-propylamine	21000.	U
67-72-1	Hexachloroethane	21000.	U
98-95-3	Nitrobenzene	21000.	U
78-59-1	Isophorone	21000.	U
88-75-5	2-Nitrophenol	21000.	U
105-67-9	2,4-Dimethylphenol	21000.	U
111-91-1	bis(2-Chloroethoxy)methane	21000.	U
120-83-2	2,4-Dichlorophenol	21000.	U
120-82-1	1,2,4-Trichlorobenzene	21000.	U
91-20-3	Naphthalene	21000.	U
106-47-8	4-Chloroaniline	21000.	U
87-68-3	Hexachlorobutadiene	21000.	U
59-50-7	4-Chloro-3-methylphenol	21000.	U
91-57-6	2-Methylnaphthalene	5700.	J
77-47-4	Hexachlorocyclopentadiene	21000.	U
88-06-2	2,4,6-Trichlorophenol	21000.	U
95-95-4	2,4,5-Trichlorophenol	53000.	U
91-58-7	2-Chloronaphthalene	21000.	U
88-74-4	2-Nitroaniline	53000.	U
131-11-3	Dimethylphthalate	21000.	U
208-96-8	Acenaphthylene	21000.	U
606-20-2	2,6-Dinitrotoluene	21000.	U
99-09-2	3-Nitroaniline	53000.	U
83-32-9	Acenaphthene	21000.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1736

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	53000.	U
100-02-7	4-Nitrophenol	53000.	U
132-64-9	Dibenzofuran	21000.	U
121-14-2	2,4-Dinitrotoluene	21000.	U
84-66-2	Diethylphthalate	21000.	U
7005-72-3	4-Chlorophenyl-phenylether	21000.	U
86-73-7	Fluorene	1100.	J
100-01-6	4-Nitroaniline	53000.	U
534-52-1	4,6-Dinitro-2-methylphenol	53000.	U
86-30-6	N-Nitrosodiphenylamine (1)	21000.	U
101-55-3	4-Bromophenyl-phenylether	21000.	U
118-74-1	Hexachlorobenzene	21000.	U
87-86-5	Pentachlorophenol	53000.	U
85-01-8	Phenanthrene	3300.	J
120-12-7	Anthracene	21000.	U
86-74-8	Carbazole	21000.	U
84-74-2	Di-n-butylphthalate	21000.	U
206-44-0	Fluoranthene	1100.	J
129-00-0	Pyrene	3800.	J
85-68-7	Butylbenzylphthalate	21000.	U
91-94-1	3,3'-Dichlorobenzidine	21000.	U
56-55-3	Benzo(a)anthracene	1100.	J
218-01-9	Chrysene	2500.	J
117-81-7	bis(2-Ethylhexyl)phthalate	2400.	JB
117-84-0	Di-n-octylphthalate	21000.	U
205-99-2	Benzo(b)fluoranthene	21000.	U
207-08-9	Benzo(k)fluoranthene	21000.	U
50-32-8	Benzo(a)pyrene	1300.	J
193-39-5	Indeno(1,2,3-cd)pyrene	21000.	U
53-70-3	Dibenz(a,h)anthracene	21000.	U
191-24-2	Benzo(g,h,i)perylene	21000.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR24

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1736

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR13

Number TICs Found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.85	63000.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.44	16000.	JNB
3.	7756-94-7	1-Propene, 2-methyl-, trimer	6.32	140000.	JN
4.	7756-94-7	1-Propene, 2-methyl-, trimer	6.59	13000.	JN
5.		Unknown	7.01	29000.	J
6.	493-02-7	Naphthalene, decahydro-, tra	7.18	14000.	JN
7.		Unknown	7.68	55000.	J
8.		Unknown	7.76	15000.	J
9.		Unknown hydrocarbon	9.97	18000.	J
10.		Unknown	11.47	15000.	J
11.	15220-85-6	1-Propene, 2-methyl-, tetram	11.84	16000.	JN
12.		Unknown hydrocarbon	12.48	34000.	J
13.		Unknown	12.90	33000.	J
14.		Unknown	13.23	18000.	J
15.		Unknown	13.58	40000.	J
16.	575-43-9	Naphthalene, 1,6-dimethyl-	14.27	27000.	JN
17.		Unknown	14.65	50000.	J
18.		Unknown	15.25	65000.	J
19.		Unknown	15.43	35000.	J
20.		Unknown	16.08	40000.	J
21.	829-26-5	Naphthalene, 2,3,6-trimethyl	16.43	21000.	JN
22.		Unknown	17.40	23000.	J
23.		Unknown	20.89	17000.	J
24.		Unknown	21.49	94000.	J
25.		Unknown	23.10	18000.	J
26.		Unknown hydrocarbon	26.96	23000.	J
27.		Unknown	30.16	12000.	J
28.		Unknown	36.04	35000.	J
29.	83-46-5	5.ALPHA.-STIGMAST-3-ONE	37.13	25000.	JN
30.		Unknown	37.64	15000.	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR25

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1725

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 33 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	41.	J
111-44-4	bis(2-Chloroethyl)ether	490.	U
95-57-8	2-Chlorophenol	490.	U
541-73-1	1,3-Dichlorobenzene	490.	U
106-46-7	1,4-Dichlorobenzene	490.	U
95-50-1	1,2-Dichlorobenzene	490.	U
95-48-7	2-Methylphenol	490.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	490.	U
106-44-5	4-Methylphenol	490.	U
621-64-7	N-Nitroso-di-n-propylamine	490.	U
67-72-1	Hexachloroethane	490.	U
98-95-3	Nitrobenzene	490.	U
78-59-1	Isophorone	490.	U
88-75-5	2-Nitrophenol	490.	U
105-67-9	2,4-Dimethylphenol	490.	U
111-91-1	bis(2-Chloroethoxy)methane	490.	U
120-83-2	2,4-Dichlorophenol	490.	U
120-82-1	1,2,4-Trichlorobenzene	490.	U
91-20-3	Naphthalene	490.	U
106-47-8	4-Chloroaniline	490.	U
87-68-3	Hexachlorobutadiene	490.	U
59-50-7	4-Chloro-3-methylphenol	490.	U
91-57-6	2-Methylnaphthalene	490.	U
77-47-4	Hexachlorocyclopentadiene	490.	U
88-06-2	2,4,6-Trichlorophenol	490.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	490.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	490.	U
208-96-8	Acenaphthylene	490.	U
606-20-2	2,6-Dinitrotoluene	490.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	490.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR25

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1725

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 33 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	490.	U
121-14-2	2,4-Dinitrotoluene	490.	U
84-66-2	Diethylphthalate	490.	U
7005-72-3	4-Chlorophenyl-phenylether	490.	U
86-73-7	Fluorene	26.	J
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	490.	U
101-55-3	4-Bromophenyl-phenylether	490.	U
118-74-1	Hexachlorobenzene	490.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	380.	J
120-12-7	Anthracene	100.	J
86-74-8	Carbazole	38.	J
84-74-2	Di-n-butylphthalate	490.	U
206-44-0	Fluoranthene	630.	
129-00-0	Pyrene	630.	
85-68-7	Butylbenzylphthalate	490.	U
91-94-1	3,3'-Dichlorobenzidine	490.	U
56-55-3	Benzo(a)anthracene	200.	J
218-01-9	Chrysene	210.	J
117-81-7	bis(2-Ethylhexyl)phthalate	230.	JB
117-84-0	Di-n-octylphthalate	490.	U
205-99-2	Benzo(b)fluoranthene	120.	J
207-08-9	Benzo(k)fluoranthene	110.	J
50-32-8	Benzo(a)pyrene	120.	J
193-39-5	Indeno(1,2,3-cd)pyrene	64.	J
53-70-3	Dibenz(a,h)anthracene	26.	J
191-24-2	Benzo(g,h,i)perylene	66.	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR25

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-006

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1725

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 33 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CASE 25919
SDG# FFR18

Number TICs Found: 25

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	4.45	450.	J
2.		Unknown	5.18	100.	J
3.		Unknown	5.35	230.	J
4.		trans-3-Hexene-2,5-dione	5.44	3500.	JB
5.	3102-33-8	3-Penten-2-one, (E)-	5.52	160.	JN
6.		Unknown ketone	5.60	680.	J
7.		Unknown	5.69	110.	J
8.		Unknown	6.06	2200.	J
9.		Unknown	6.33	580.	J
10.		Unknown	6.72	480.	J
11.		Unknown	7.45	100.	J
12.		Unknown	8.96	110.	J
13.		Unknown	12.12	210.	J
14.		Unknown	14.29	640.	J
15.	54832-83-6	1H-Indene, octahydro-2,2,4,4	14.65	110.	JN
16.		Unknown	15.25	290.	J
17.		Unknown	15.43	150.	J
18.		Unknown	15.80	110.	J
19.		Unknown	16.09	230.	J
20.		Unknown	16.75	140.	J
21.		Unknown	17.05	100.	J
22.		Unknown	17.64	1500.	J
23.		Unknown	18.94	240.	J
24.		Unknown	33.33	320.	J
25.		Unknown hydrocarbon	34.86	860.	J
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR27

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-007

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1726

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 28 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460.	U
111-44-4	bis(2-Chloroethyl)ether	460.	U
95-57-8	2-Chlorophenol	460.	U
541-73-1	1,3-Dichlorobenzene	460.	U
106-46-7	1,4-Dichlorobenzene	460.	U
95-50-1	1,2-Dichlorobenzene	460.	U
95-48-7	2-Methylphenol	460.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460.	U
106-44-5	4-Methylphenol	460.	U
621-64-7	N-Nitroso-di-n-propylamine	460.	U
67-72-1	Hexachloroethane	460.	U
98-95-3	Nitrobenzene	460.	U
78-59-1	Isophorone	460.	U
88-75-5	2-Nitrophenol	460.	U
105-67-9	2,4-Dimethylphenol	460.	U
111-91-1	bis(2-Chloroethoxy)methane	460.	U
120-83-2	2,4-Dichlorophenol	460.	U
120-82-1	1,2,4-Trichlorobenzene	460.	U
91-20-3	Naphthalene	460.	U
106-47-8	4-Chloroaniline	460.	U
87-68-3	Hexachlorobutadiene	460.	U
59-50-7	4-Chloro-3-methylphenol	460.	U
91-57-6	2-Methylnaphthalene	460.	U
77-47-4	Hexachlorocyclopentadiene	460.	U
88-06-2	2,4,6-Trichlorophenol	460.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	460.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	460.	U
208-96-8	Acenaphthylene	460.	U
606-20-2	2,6-Dinitrotoluene	460.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	460.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR27

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-007

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1726

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 28 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	460.	U
121-14-2	2,4-Dinitrotoluene	460.	U
84-66-2	Diethylphthalate	460.	U
7005-72-3	4-Chlorophenyl-phenylether	460.	U
86-73-7	Fluorene	460.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	460.	U
101-55-3	4-Bromophenyl-phenylether	460.	U
118-74-1	Hexachlorobenzene	460.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	460.	U
120-12-7	Anthracene	460.	U
86-74-8	Carbazole	460.	U
84-74-2	Di-n-butylphthalate	460.	U
206-44-0	Fluoranthene	460.	U
129-00-0	Pyrene	460.	U
85-68-7	Butylbenzylphthalate	460.	U
91-94-1	3,3'-Dichlorobenzidine	460.	U
56-55-3	Benzo(a)anthracene	460.	U
218-01-9	Chrysene	460.	U
117-81-7	bis(2-Ethylhexyl)phthalate	81.	JB
117-84-0	Di-n-octylphthalate	29.	J
205-99-2	Benzo(b)fluoranthene	460.	U
207-08-9	Benzo(k)fluoranthene	460.	U
50-32-8	Benzo(a)pyrene	460.	U
193-39-5	Indeno(1,2,3-cd)pyrene	460.	U
53-70-3	Dibenz(a,h)anthracene	460.	U
191-24-2	Benzo(g,h,i)perylene	460.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR27

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-007

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1726

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 28 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CASE 25919
SDG# FFR18

Number TICs Found: 27

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.45	270.	JN
2.		Unknown	5.19	230.	J
3.	930-68-7	2-Cyclohexen-1-one	5.36	100.	JN
4.		trans-3-Hexene-2,5-dione	5.44	880.	JB
5.		Unknown ketone	5.60	130.	J
6.		Unknown	5.80	96.	J
7.		Unknown	6.06	960.	J
8.		Unknown	6.33	350.	J
9.		Unknown	6.71	200.	J
10.		Unknown	7.25	140.	J
11.		Unknown	14.28	120.	J
12.	54832-83-6	1H-Indene, octahydro-2,2,4,4	14.64	150.	JN
13.		Unknown	15.25	350.	J
14.		Unknown	15.43	170.	J
15.		Unknown aromatic	16.43	95.	J
16.		Unknown	16.76	140.	J
17.		Unknown	21.48	130.	J
18.		Unknown	22.80	180.	J
19.	123-79-5	Hexanedioic acid, dioctyl es	22.94	290.	JNB
20.		NAUGARD 431	23.79	180.	J
21.		2-Methyl-4,6-bis(1-phenyleth	23.90	110.	J
22.		Unknown hydrocarbon	25.21	770.	J
23.		Unknown	31.37	100.	J
24.		Unknown	32.68	1000.	J
25.		Unknown	34.86	160.	J
26.	83-46-5	5.ALPHA.-STIGMAST-3-ONE	37.15	500.	JN
27.		Unknown	37.64	720.	J
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR28

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-008

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1727

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 54 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	64.	J
111-44-4	bis(2-Chloroethyl)ether	720.	U
95-57-8	2-Chlorophenol	720.	U
541-73-1	1,3-Dichlorobenzene	720.	U
106-46-7	1,4-Dichlorobenzene	720.	U
95-50-1	1,2-Dichlorobenzene	720.	U
95-48-7	2-Methylphenol	720.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	720.	U
106-44-5	4-Methylphenol	720.	U
621-64-7	N-Nitroso-di-n-propylamine	720.	U
67-72-1	Hexachloroethane	720.	U
98-95-3	Nitrobenzene	720.	U
78-59-1	Isophorone	720.	U
88-75-5	2-Nitrophenol	720.	U
105-67-9	2,4-Dimethylphenol	720.	U
111-91-1	bis(2-Chloroethoxy)methane	720.	U
120-83-2	2,4-Dichlorophenol	720.	U
120-82-1	1,2,4-Trichlorobenzene	720.	U
91-20-3	Naphthalene	120.	J
106-47-8	4-Chloroaniline	720.	U
87-68-3	Hexachlorobutadiene	720.	U
59-50-7	4-Chloro-3-methylphenol	720.	U
91-57-6	2-Methylnaphthalene	540.	J
77-47-4	Hexachlorocyclopentadiene	720.	U
88-06-2	2,4,6-Trichlorophenol	720.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	720.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	720.	U
208-96-8	Acenaphthylene	720.	U
606-20-2	2,6-Dinitrotoluene	720.	U
99-09-2	3-Nitroaniline	1800.	U
83-32-9	Acenaphthene	720.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR28

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-008

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1727

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 54 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CASE 25919
SDG# FFR13

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	86.	J
121-14-2	2,4-Dinitrotoluene	720.	U
84-66-2	Diethylphthalate	720.	U
7005-72-3	4-Chlorophenyl-phenylether	720.	U
86-73-7	Fluorene	46.	J
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	720.	U
101-55-3	4-Bromophenyl-phenylether	720.	U
118-74-1	Hexachlorobenzene	720.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	590.	J
120-12-7	Anthracene	110.	J
86-74-8	Carbazole	720.	U
84-74-2	Di-n-butylphthalate	720.	U
206-44-0	Fluoranthene	96.	J
129-00-0	Pyrene	310.	J
85-68-7	Butylbenzylphthalate	720.	U
91-94-1	3,3'-Dichlorobenzidine	720.	U
56-55-3	Benzo(a)anthracene	260.	J
218-01-9	Chrysene	540.	J
117-81-7	bis(2-Ethylhexyl)phthalate	180.	JB
117-84-0	Di-n-octylphthalate	200.	J
205-99-2	Benzo(b)fluoranthene	230.	J
207-08-9	Benzo(k)fluoranthene	72.	J
50-32-8	Benzo(a)pyrene	270.	J
193-39-5	Indeno(1,2,3-cd)pyrene	210.	J
53-70-3	Dibenz(a,h)anthracene	360.	J
191-24-2	Benzo(g,h,i)perylene	530.	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR28

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-008

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1727

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 54 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CASE 25919
SDG# FFR18

Number TICs Found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		trans-3-Hexene-2,5-dione	5.44	3100.	JB
2.		Unknown ketone	5.59	900.	J
3.		Unknown	6.05	1800.	J
4.		Unknown	6.73	1100.	J
5.		Unknown	7.22	610.	J
6.	24949-42-6	6-Tridecene, 7-methyl-	11.00	860.	JN
7.		Unknown	12.76	600.	J
8.		Unknown	12.91	780.	J
9.		Unknown	13.24	790.	J
10.		Unknown	13.59	1100.	J
11.	581-42-0	Naphthalene, 2,6-dimethyl-	14.29	960.	JN
12.	575-41-7	Naphthalene, 1,3-dimethyl-	14.57	1200.	JN
13.	54832-83-6	1H-Indene, octahydro-2,2,4,4	14.66	2200.	JN
14.		Unknown	15.26	3400.	J
15.		Unknown	15.35	560.	J
16.		Unknown	15.44	1200.	J
17.	2027-17-0	Naphthalene, 2-(1-methylethy	15.84	600.	JN
18.	2131-42-2	Naphthalene, 1,4,6-trimethyl	16.23	1500.	JN
19.	2131-42-2	Naphthalene, 1,4,6-trimethyl	16.44	1400.	JN
20.		Unknown	16.61	1200.	J
21.	529-05-5	Azulene, 7-ethyl-1,4-dimethy	17.84	890.	JN
22.		Unknown	18.04	2200.	J
23.	112-39-0	Hexadecanoic acid, methyl es	19.71	2200.	JN
24.	57-10-3	Hexadecanoic acid	20.00	3500.	JN
25.		Unknown	20.71	3000.	J
26.		Unknown	21.53	8200.	J
27.		Unknown	32.21	15000.	J
28.		Unknown	33.48	8600.	J
29.		Unknown	36.30	16000.	J
30.	83-46-5	5.ALPHA.-STIGMAST-3-ONE	37.48	25000.	JN

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR29

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-009

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1728

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.4

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	480.	U
111-44-4	bis(2-Chloroethyl)ether	480.	U
95-57-8	2-Chlorophenol	480.	U
541-73-1	1,3-Dichlorobenzene	480.	U
106-46-7	1,4-Dichlorobenzene	480.	U
95-50-1	1,2-Dichlorobenzene	480.	U
95-48-7	2-Methylphenol	480.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	480.	U
106-44-5	4-Methylphenol	480.	U
621-64-7	N-Nitroso-di-n-propylamine	480.	U
67-72-1	Hexachloroethane	480.	U
98-95-3	Nitrobenzene	480.	U
78-59-1	Isophorone	480.	U
88-75-5	2-Nitrophenol	480.	U
105-67-9	2,4-Dimethylphenol	480.	U
111-91-1	bis(2-Chloroethoxy)methane	480.	U
120-83-2	2,4-Dichlorophenol	480.	U
120-82-1	1,2,4-Trichlorobenzene	480.	U
91-20-3	Naphthalene	480.	U
106-47-8	4-Chloroaniline	480.	U
87-68-3	Hexachlorobutadiene	480.	U
59-50-7	4-Chloro-3-methylphenol	480.	U
91-57-6	2-Methylnaphthalene	480.	U
77-47-4	Hexachlorocyclopentadiene	480.	U
88-06-2	2,4,6-Trichlorophenol	480.	U
95-95-4	2,4,5-Trichlorophenol	1200.	U
91-58-7	2-Chloronaphthalene	480.	U
88-74-4	2-Nitroaniline	1200.	U
131-11-3	Dimethylphthalate	480.	U
208-96-8	Acenaphthylene	480.	U
606-20-2	2,6-Dinitrotoluene	480.	U
99-09-2	3-Nitroaniline	1200.	U
83-32-9	Acenaphthene	480.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR29

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-009

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1728

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.4

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200.	U
100-02-7	4-Nitrophenol	1200.	U
132-64-9	Dibenzofuran	480.	U
121-14-2	2,4-Dinitrotoluene	480.	U
84-66-2	Diethylphthalate	480.	U
7005-72-3	4-Chlorophenyl-phenylether	480.	U
86-73-7	Fluorene	480.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	1200.	U
86-30-6	N-Nitrosodiphenylamine (1)	480.	U
101-55-3	4-Bromophenyl-phenylether	480.	U
118-74-1	Hexachlorobenzene	480.	U
87-86-5	Pentachlorophenol	1200.	U
85-01-8	Phenanthrene	480.	U
120-12-7	Anthracene	480.	U
86-74-8	Carbazole	480.	U
84-74-2	Di-n-butylphthalate	480.	U
206-44-0	Fluoranthene	480.	U
129-00-0	Pyrene	480.	U
85-68-7	Butylbenzylphthalate	480.	U
91-94-1	3,3'-Dichlorobenzidine	480.	U
56-55-3	Benzo(a)anthracene	480.	U
218-01-9	Chrysene	480.	U
117-81-7	bis(2-Ethylhexyl)phthalate	48.	JB
117-84-0	Di-n-octylphthalate	480.	U
205-99-2	Benzo(b)fluoranthene	480.	U
207-08-9	Benzo(k)fluoranthene	480.	U
50-32-8	Benzo(a)pyrene	480.	U
193-39-5	Indeno(1,2,3-cd)pyrene	480.	U
53-70-3	Dibenz(a,h)anthracene	480.	U
191-24-2	Benzo(g,h,i)perylene	480.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR29

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-009

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1728

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 31 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.4

CASE 25919
SDG# FFR18

Number TICs Found: 23

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.45	350.	JN
2.		Unknown	5.19	280.	J
3.	930-68-7	2-Cyclohexen-1-one	5.37	150.	JN
4.		trans-3-Hexene-2,5-dione	5.44	1300.	JB
5.		Unknown	6.07	2000.	J
6.		Unknown	6.33	180.	J
7.		Unknown	6.38	650.	J
8.		Unknown	6.91	1100.	J
9.		Unknown	15.01	130.	J
10.		Unknown	20.61	130.	J
11.		Unknown	20.91	110.	J
12.		Unknown	21.11	760.	J
13.		Unknown	21.20	290.	J
14.		Unknown	21.39	400.	J
15.		Unknown	21.84	1300.	J
16.		Unknown acid ester	22.95	720.	J
17.		Unknown	25.51	160.	J
18.		Unknown	26.31	200.	J
19.		Unknown	26.41	190.	J
20.		Unknown	26.69	120.	J
21.		Unknown	31.12	190.	J
22.		Unknown	34.61	640.	J
23.	14021-23-9	Taraxerol methyl ether	34.89	1400.	JN
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1729

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	560.	U
111-44-4	bis(2-Chloroethyl)ether	560.	U
95-57-8	2-Chlorophenol	560.	U
541-73-1	1,3-Dichlorobenzene	560.	U
106-46-7	1,4-Dichlorobenzene	560.	U
95-50-1	1,2-Dichlorobenzene	560.	U
95-48-7	2-Methylphenol	560.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	560.	U
106-44-5	4-Methylphenol	560.	U
621-64-7	N-Nitroso-di-n-propylamine	560.	U
67-72-1	Hexachloroethane	560.	U
98-95-3	Nitrobenzene	560.	U
78-59-1	Isophorone	560.	U
88-75-5	2-Nitrophenol	560.	U
105-67-9	2,4-Dimethylphenol	560.	U
111-91-1	bis(2-Chloroethoxy)methane	560.	U
120-83-2	2,4-Dichlorophenol	560.	U
120-82-1	1,2,4-Trichlorobenzene	560.	U
91-20-3	Naphthalene	560.	U
106-47-8	4-Chloroaniline	560.	U
87-68-3	Hexachlorobutadiene	560.	U
59-50-7	4-Chloro-3-methylphenol	560.	U
91-57-6	2-Methylnaphthalene	560.	U
77-47-4	Hexachlorocyclopentadiene	560.	U
88-06-2	2,4,6-Trichlorophenol	560.	U
95-95-4	2,4,5-Trichlorophenol	1400.	U
91-58-7	2-Chloronaphthalene	560.	U
88-74-4	2-Nitroaniline	1400.	U
131-11-3	Dimethylphthalate	560.	U
208-96-8	Acenaphthylene	560.	U
606-20-2	2,6-Dinitrotoluene	560.	U
99-09-2	3-Nitroaniline	1400.	U
83-32-9	Acenaphthene	560.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1729

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1400.	U
100-02-7	4-Nitrophenol	1400.	U
132-64-9	Dibenzofuran	560.	U
121-14-2	2,4-Dinitrotoluene	560.	U
84-66-2	Diethylphthalate	560.	U
7005-72-3	4-Chlorophenyl-phenylether	560.	U
86-73-7	Fluorene	560.	U
100-01-6	4-Nitroaniline	1400.	U
534-52-1	4,6-Dinitro-2-methylphenol	1400.	U
86-30-6	N-Nitrosodiphenylamine (1)	560.	U
101-55-3	4-Bromophenyl-phenylether	560.	U
118-74-1	Hexachlorobenzene	560.	U
87-86-5	Pentachlorophenol	1400.	U
85-01-8	Phenanthrene	560.	U
120-12-7	Anthracene	560.	U
86-74-8	Carbazole	560.	U
84-74-2	Di-n-butylphthalate	560.	U
206-44-0	Fluoranthene	560.	U
129-00-0	Pyrene	560.	U
85-68-7	Butylbenzylphthalate	560.	U
91-94-1	3,3'-Dichlorobenzidine	560.	U
56-55-3	Benzo(a)anthracene	560.	U
218-01-9	Chrysene	560.	U
117-81-7	bis(2-Ethylhexyl)phthalate	77.	JB
117-84-0	Di-n-octylphthalate	560.	U
205-99-2	Benzo(b)fluoranthene	560.	U
207-08-9	Benzo(k)fluoranthene	560.	U
50-32-8	Benzo(a)pyrene	560.	U
193-39-5	Indeno(1,2,3-cd)pyrene	560.	U
53-70-3	Dibenz(a,h)anthracene	560.	U
191-24-2	Benzo(g,h,i)perylene	560.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR30

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1729

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 25919
SDG# FFR18

Number TICs Found: 30

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.46	340.	JN
2.		Unknown	5.11	160.	J
3.		Unknown	5.19	380.	J
4.		Unknown	5.36	210.	J
5.		trans-3-Hexene-2,5-dione	5.44	1900.	JB
6.		Unknown ketone	5.60	390.	J
7.		Unknown	6.06	2200.	J
8.		Unknown	6.34	1300.	J
9.		Unknown	6.38	310.	J
10.		Unknown	6.73	210.	J
11.		Unknown	6.92	4300.	J
12.		Unknown	15.00	160.	J
13.		Unknown	21.39	480.	J
14.		Unknown	21.84	2500.	J
15.		Unknown	21.94	160.	J
16.	123-79-5	Hexanedioic acid, dioctyl es	22.94	380.	JNB
17.		Unknown	25.31	1000.	J
18.		Unknown	25.51	220.	J
19.		Unknown phthalate	26.34	300.	J
20.		Unknown	28.37	210.	J
21.		Unknown	30.01	400.	J
22.		Unknown	30.71	190.	J
23.		Unknown	31.54	250.	J
24.		Unknown	34.04	300.	J
25.		Unknown	34.40	690.	J
26.		Unknown hydrocarbon	34.88	1100.	J
27.		Unknown	35.07	970.	J
28.		Unknown	36.00	730.	J
29.		Unknown	37.15	510.	J
30.		Unknown	37.65	1200.	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR32

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-011

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1732

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 42 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CASE 25919 SDG# FFR18

CASE 25
SDG# FF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	570.	U
111-44-4	bis(2-Chloroethyl)ether	570.	U
95-57-8	2-Chlorophenol	570.	U
541-73-1	1,3-Dichlorobenzene	570.	U
106-46-7	1,4-Dichlorobenzene	570.	U
95-50-1	1,2-Dichlorobenzene	570.	U
95-48-7	2-Methylphenol	570.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	570.	U
106-44-5	4-Methylphenol	570.	U
621-64-7	N-Nitroso-di-n-propylamine	570.	U
67-72-1	Hexachloroethane	570.	U
98-95-3	Nitrobenzene	570.	U
78-59-1	Isophorone	570.	U
88-75-5	2-Nitrophenol	570.	U
105-67-9	2,4-Dimethylphenol	570.	U
111-91-1	bis(2-Chloroethoxy)methane	570.	U
120-83-2	2,4-Dichlorophenol	570.	U
120-82-1	1,2,4-Trichlorobenzene	570.	U
91-20-3	Naphthalene	570.	U
106-47-8	4-Chloroaniline	570.	U
87-68-3	Hexachlorobutadiene	570.	U
59-50-7	4-Chloro-3-methylphenol	570.	U
91-57-6	2-Methylnaphthalene	570.	U
77-47-4	Hexachlorocyclopentadiene	570.	U
88-06-2	2,4,6-Trichlorophenol	570.	U
95-95-4	2,4,5-Trichlorophenol	1400.	U
91-58-7	2-Chloronaphthalene	570.	U
88-74-4	2-Nitroaniline	1400.	U
131-11-3	Dimethylphthalate	570.	U
208-96-8	Acenaphthylene	570.	U
606-20-2	2,6-Dinitrotoluene	570.	U
99-09-2	3-Nitroaniline	1400.	U
83-32-9	Acenaphthene	570.	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR32

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-011

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1732

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 42 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CASE 25919
SDG# FFR13

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1400.	U
100-02-7	4-Nitrophenol	1400.	U
132-64-9	Dibenzofuran	570.	U
121-14-2	2,4-Dinitrotoluene	570.	U
84-66-2	Diethylphthalate	570.	U
7005-72-3	4-Chlorophenyl-phenylether	570.	U
86-73-7	Fluorene	570.	U
100-01-6	4-Nitroaniline	1400.	U
534-52-1	4,6-Dinitro-2-methylphenol	1400.	U
86-30-6	N-Nitrosodiphenylamine (1)	570.	U
101-55-3	4-Bromophenyl-phenylether	570.	U
118-74-1	Hexachlorobenzene	570.	U
87-86-5	Pentachlorophenol	1400.	U
85-01-8	Phenanthrene	570.	U
120-12-7	Anthracene	570.	U
86-74-8	Carbazole	570.	U
84-74-2	Di-n-butylphthalate	570.	U
206-44-0	Fluoranthene	570.	U
129-00-0	Pyrene	570.	U
85-68-7	Butylbenzylphthalate	570.	U
91-94-1	3,3'-Dichlorobenzidine	570.	U
56-55-3	Benzo(a)anthracene	570.	U
218-01-9	Chrysene	570.	U
117-81-7	bis(2-Ethylhexyl)phthalate	42.	JB
117-84-0	Di-n-octylphthalate	570.	U
205-99-2	Benzo(b)fluoranthene	570.	U
207-08-9	Benzo(k)fluoranthene	570.	U
50-32-8	Benzo(a)pyrene	570.	U
193-39-5	Indeno(1,2,3-cd)pyrene	570.	U
53-70-3	Dibenz(a,h)anthracene	570.	U
191-24-2	Benzo(g,h,i)perylene	570.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR32

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-011

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1732

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 42 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CASE 25919
SDG# FFR18

Number TICs Found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	822-67-3	2-Cyclohexen-1-ol	4.44	460.	JN
2.		Unknown	5.19	230.	J
3.		Unknown	5.35	260.	J
4.		trans-3-Hexene-2,5-dione	5.44	2500.	JB
5.		Unknown ketone	5.60	500.	J
6.		Unknown	6.06	2100.	J
7.		Unknown	6.33	880.	J
8.		Unknown	6.91	1500.	J
9.		Unknown	20.88	120.	J
10.		Unknown	21.36	130.	J
11.		Unknown	21.83	400.	J
12.	123-79-5	Hexanedioic acid, dioctyl es	22.94	210.	JNB
13.		Unknown	23.15	160.	J
14.		Unknown	25.76	130.	J
15.		Unknown phthalate	25.97	440.	J
16.		Unknown phthalate	26.68	130.	J
17.		Unknown	34.02	280.	J
18.		Unknown hydrocarbon	34.87	190.	J
19.		Unknown	36.32	160.	J
20.		Unknown	37.60	630.	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR56

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-012

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1763

Level: (low/med) LOW Date Received:12/15/97

% Moisture: decanted: (Y/N) Date Extracted:12/29/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 1/05/98

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CASE 25919
SDG# FFR1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	5.	J
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	25.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
99-09-2	3-Nitroaniline	25.	U
83-32-9	Acenaphthene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR56

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-012

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1763

Level: (low/med) LOW Date Received:12/15/97

% Moisture: decanted: (Y/N) Date Extracted:12/29/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 1/05/98

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25.	U
100-02-7	4-Nitrophenol	25.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	25.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
86-74-8	Carbazole	10.	U
84-74-2	Di-n-butylphthalate	0.6	J
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	2.	JB
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFR56

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) WATER Lab Sample ID:57283-012

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: G1763

Level: (low/med) LOW Date Received:12/15/97

% Moisture: decanted: (Y/N) Date Extracted:12/29/97

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 1/05/98

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CASE 25919 SDG# FFR19

Number TICs Found: 26

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	286-20-4	7-Oxabicyclo[4.1.0]heptane	3.66	37.	JNB
2.	822-67-3	2-Cyclohexen-1-ol	4.25	8.	JNB
3.		1-Formylcyclopentene	4.37	6.	J
4.	108-94-1	Cyclohexanone	4.51	4.	JNB
5.	930-68-7	2-Cyclohexen-1-one	5.21	7.	JNB
6.		Unknown	6.17	3.	J
7.		Unknown	6.55	12.	J
8.		Unknown	6.61	4.	J
9.	931-17-9	1,2-Cyclohexanediol	6.94	67.	JNB
10.		Unknown	7.80	2.	J
11.	112-75-4	1-Tetradecanamine, N,N-dimet	15.21	3.	JN
12.	822-67-3	2-Cyclohexen-1-ol	15.82	6.	JN
13.		Unknown	16.88	2.	J
14.		Unknown	17.60	3.	J
15.		Unknown	19.74	6.	J
16.		Unknown	21.19	3.	J
17.		Unknown	21.68	6.	J
18.	123-79-5	Hexanedioic acid, dioctyl es	22.78	4.	JN
19.		Unknown phthalate	25.45	3.	J
20.		Unknown phthalate	25.64	11.	J
21.		Unknown phthalate	26.05	6.	J
22.		Unknown phthalate	26.36	5.	J
23.		Unknown phthalate	26.51	2.	J
24.		Unknown phthalate	26.72	3.	J
25.		Unknown phthalate	26.85	3.	J
26.		Unknown phthalate	27.04	2.	J
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005MS

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1737

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 259
SDG# FFR

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	140000.	
111-44-4	bis(2-Chloroethyl)ether	21000.	U
95-57-8	2-Chlorophenol	130000.	
541-73-1	1,3-Dichlorobenzene	21000.	U
106-46-7	1,4-Dichlorobenzene	92000.	
95-50-1	1,2-Dichlorobenzene	21000.	U
95-48-7	2-Methylphenol	21000.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	21000.	U
106-44-5	4-Methylphenol	21000.	U
621-64-7	N-Nitroso-di-n-propylamine	99000.	
67-72-1	Hexachloroethane	21000.	U
98-95-3	Nitrobenzene	21000.	U
78-59-1	Isophorone	21000.	U
88-75-5	2-Nitrophenol	21000.	U
105-67-9	2,4-Dimethylphenol	21000.	U
111-91-1	bis(2-Chloroethoxy)methane	21000.	U
120-83-2	2,4-Dichlorophenol	21000.	U
120-82-1	1,2,4-Trichlorobenzene	90000.	
91-20-3	Naphthalene	21000.	U
106-47-8	4-Chloroaniline	21000.	U
87-68-3	Hexachlorobutadiene	21000.	U
59-50-7	4-Chloro-3-methylphenol	150000.	
91-57-6	2-Methylnaphthalene	5900.	J
77-47-4	Hexachlorocyclopentadiene	21000.	U
88-06-2	2,4,6-Trichlorophenol	21000.	U
95-95-4	2,4,5-Trichlorophenol	53000.	U
91-58-7	2-Chloronaphthalene	21000.	U
88-74-4	2-Nitroaniline	53000.	U
131-11-3	Dimethylphthalate	21000.	U
208-96-8	Acenaphthylene	21000.	U
606-20-2	2,6-Dinitrotoluene	21000.	U
99-09-2	3-Nitroaniline	53000.	U
83-32-9	Acenaphthene	92000.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005MS

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1737

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	53000.	U
100-02-7	4-Nitrophenol	130000.	
132-64-9	Dibenzofuran	21000.	U
121-14-2	2,4-Dinitrotoluene	96000.	
84-66-2	Diethylphthalate	21000.	U
7005-72-3	4-Chlorophenyl-phenylether	21000.	U
86-73-7	Fluorene	1100.	J
100-01-6	4-Nitroaniline	53000.	U
534-52-1	4,6-Dinitro-2-methylphenol	53000.	U
86-30-6	N-Nitrosodiphenylamine (1)	21000.	U
101-55-3	4-Bromophenyl-phenylether	21000.	U
118-74-1	Hexachlorobenzene	21000.	U
87-86-5	Pentachlorophenol	64000.	
85-01-8	Phenanthrene	3300.	J
120-12-7	Anthracene	21000.	U
86-74-8	Carbazole	21000.	U
84-74-2	Di-n-butylphthalate	21000.	U
206-44-0	Fluoranthene	21000.	U
129-00-0	Pyrene	110000.	
85-68-7	Butylbenzylphthalate	21000.	U
91-94-1	3,3'-Dichlorobenzidine	21000.	U
56-55-3	Benzo(a)anthracene	1500.	J
218-01-9	Chrysene	3000.	J
117-81-7	bis(2-Ethylhexyl)phthalate	2600.	JB
117-84-0	Di-n-octylphthalate	21000.	U
205-99-2	Benzo(b)fluoranthene	1600.	J
207-08-9	Benzo(k)fluoranthene	21000.	U
50-32-8	Benzo(a)pyrene	1400.	J
193-39-5	Indeno(1,2,3-cd)pyrene	21000.	U
53-70-3	Dibenz(a,h)anthracene	21000.	U
191-24-2	Benzo(g,h,i)perylene	1100.	J

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005MSD

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1738

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25[illegible]
SDG# FFR1[illegible]

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	150000.	
111-44-4	bis(2-Chloroethyl)ether	21000.	U
95-57-8	2-Chlorophenol	130000.	
541-73-1	1,3-Dichlorobenzene	21000.	U
106-46-7	1,4-Dichlorobenzene	95000.	
95-50-1	1,2-Dichlorobenzene	21000.	U
95-48-7	2-Methylphenol	21000.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	21000.	U
106-44-5	4-Methylphenol	21000.	U
621-64-7	N-Nitroso-di-n-propylamine	110000.	
67-72-1	Hexachloroethane	21000.	U
98-95-3	Nitrobenzene	21000.	U
78-59-1	Isophorone	21000.	U
88-75-5	2-Nitrophenol	21000.	U
105-67-9	2,4-Dimethylphenol	21000.	U
111-91-1	bis(2-Chloroethoxy)methane	21000.	U
120-83-2	2,4-Dichlorophenol	21000.	U
120-82-1	1,2,4-Trichlorobenzene	100000.	
91-20-3	Naphthalene	21000.	U
106-47-8	4-Chloroaniline	21000.	U
87-68-3	Hexachlorobutadiene	21000.	U
59-50-7	4-Chloro-3-methylphenol	160000.	
91-57-6	2-Methylnaphthalene	5300.	J
77-47-4	Hexachlorocyclopentadiene	21000.	U
88-06-2	2,4,6-Trichlorophenol	21000.	U
95-95-4	2,4,5-Trichlorophenol	53000.	U
91-58-7	2-Chloronaphthalene	21000.	U
88-74-4	2-Nitroaniline	53000.	U
131-11-3	Dimethylphthalate	21000.	U
208-96-8	Acenaphthylene	21000.	U
606-20-2	2,6-Dinitrotoluene	21000.	U
99-09-2	3-Nitroaniline	53000.	U
83-32-9	Acenaphthene	100000.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-005MSD

Sample wt/vol: 1.0 (g/ml) G Lab File ID: G1738

Level: (low/med) MED Date Received:12/15/97

% Moisture: 53 decanted: (Y/N) N Date Extracted:12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	53000.	U
100-02-7	4-Nitrophenol	150000.	
132-64-9	Dibenzofuran	21000.	U
121-14-2	2,4-Dinitrotoluene	110000.	
84-66-2	Diethylphthalate	21000.	U
7005-72-3	4-Chlorophenyl-phenylether	21000.	U
86-73-7	Fluorene	21000.	U
100-01-6	4-Nitroaniline	53000.	U
534-52-1	4,6-Dinitro-2-methylphenol	53000.	U
86-30-6	N-Nitrosodiphenylamine (1)	21000.	U
101-55-3	4-Bromophenyl-phenylether	21000.	U
118-74-1	Hexachlorobenzene	21000.	U
87-86-5	Pentachlorophenol	80000.	
85-01-8	Phenanthrene	3000.	J
120-12-7	Anthracene	21000.	U
86-74-8	Carbazole	21000.	U
84-74-2	Di-n-butylphthalate	21000.	U
206-44-0	Fluoranthene	21000.	U
129-00-0	Pyrene	120000.	
85-68-7	Butylbenzylphthalate	21000.	U
91-94-1	3,3'-Dichlorobenzidine	21000.	U
56-55-3	Benzo(a)anthracene	1200.	J
218-01-9	Chrysene	2700.	J
117-81-7	bis(2-Ethylhexyl)phthalate	4400.	JB
117-84-0	Di-n-octylphthalate	1200.	J
205-99-2	Benzo(b)fluoranthene	1500.	J
207-08-9	Benzo(k)fluoranthene	21000.	U
50-32-8	Benzo(a)pyrene	1500.	J
193-39-5	Indeno(1,2,3-cd)pyrene	21000.	U
53-70-3	Dibenz(a,h)anthracene	21000.	U
191-24-2	Benzo(g,h,i)perylene	21000.	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1730

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 2591
SDG# FFR1F

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3900.	
111-44-4	bis(2-Chloroethyl)ether	560.	U
95-57-8	2-Chlorophenol	3600.	
541-73-1	1,3-Dichlorobenzene	560.	U
106-46-7	1,4-Dichlorobenzene	2100.	
95-50-1	1,2-Dichlorobenzene	560.	U
95-48-7	2-Methylphenol	560.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	560.	U
106-44-5	4-Methylphenol	560.	U
621-64-7	N-Nitroso-di-n-propylamine	2500.	
67-72-1	Hexachloroethane	560.	U
98-95-3	Nitrobenzene	560.	U
78-59-1	Isophorone	560.	U
88-75-5	2-Nitrophenol	560.	U
105-67-9	2,4-Dimethylphenol	560.	U
111-91-1	bis(2-Chloroethoxy)methane	560.	U
120-83-2	2,4-Dichlorophenol	560.	U
120-82-1	1,2,4-Trichlorobenzene	2200.	
91-20-3	Naphthalene	560.	U
106-47-8	4-Chloroaniline	560.	U
87-68-3	Hexachlorobutadiene	560.	U
59-50-7	4-Chloro-3-methylphenol	4100.	
91-57-6	2-Methylnaphthalene	560.	U
77-47-4	Hexachlorocyclopentadiene	560.	U
88-06-2	2,4,6-Trichlorophenol	560.	U
95-95-4	2,4,5-Trichlorophenol	1400.	U
91-58-7	2-Chloronaphthalene	560.	U
88-74-4	2-Nitroaniline	1400.	U
131-11-3	Dimethylphthalate	560.	U
208-96-8	Acenaphthylene	560.	U
606-20-2	2,6-Dinitrotoluene	560.	U
99-09-2	3-Nitroaniline	1400.	U
83-32-9	Acenaphthene	2500.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30MS

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010MS

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1730

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1400.	U
100-02-7	4-Nitrophenol	4600.	E
132-64-9	Dibenzofuran	560.	U
121-14-2	2,4-Dinitrotoluene	2700.	
84-66-2	Diethylphthalate	560.	U
7005-72-3	4-Chlorophenyl-phenylether	560.	U
86-73-7	Fluorene	560.	U
100-01-6	4-Nitroaniline	1400.	U
534-52-1	4,6-Dinitro-2-methylphenol	1400.	U
86-30-6	N-Nitrosodiphenylamine (1)	560.	U
101-55-3	4-Bromophenyl-phenylether	560.	U
118-74-1	Hexachlorobenzene	560.	U
87-86-5	Pentachlorophenol	4300.	
85-01-8	Phenanthrene	560.	U
120-12-7	Anthracene	560.	U
86-74-8	Carbazole	560.	U
84-74-2	Di-n-butylphthalate	560.	U
206-44-0	Fluoranthene	560.	U
129-00-0	Pyrene	2800.	
85-68-7	Butylbenzylphthalate	560.	U
91-94-1	3,3'-Dichlorobenzidine	560.	U
56-55-3	Benzo(a)anthracene	560.	U
218-01-9	Chrysene	560.	U
117-81-7	bis(2-Ethylhexyl)phthalate	76.	JB
117-84-0	Di-n-octylphthalate	33.	J
205-99-2	Benzo(b)fluoranthene	560.	U
207-08-9	Benzo(k)fluoranthene	560.	U
50-32-8	Benzo(a)pyrene	560.	U
193-39-5	Indeno(1,2,3-cd)pyrene	560.	U
53-70-3	Dibenz(a,h)anthracene	560.	U
191-24-2	Benzo(g,h,i)perylene	560.	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1731

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 2591
SDG# FFR1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3200.	
111-44-4	bis(2-Chloroethyl)ether	560.	U
95-57-8	2-Chlorophenol	3000.	
541-73-1	1,3-Dichlorobenzene	560.	U
106-46-7	1,4-Dichlorobenzene	1800.	
95-50-1	1,2-Dichlorobenzene	560.	U
95-48-7	2-Methylphenol	560.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	560.	U
106-44-5	4-Methylphenol	560.	U
621-64-7	N-Nitroso-di-n-propylamine	2000.	
67-72-1	Hexachloroethane	560.	U
98-95-3	Nitrobenzene	560.	U
78-59-1	Isophorone	560.	U
88-75-5	2-Nitrophenol	560.	U
105-67-9	2,4-Dimethylphenol	560.	U
111-91-1	bis(2-Chloroethoxy)methane	560.	U
120-83-2	2,4-Dichlorophenol	560.	U
120-82-1	1,2,4-Trichlorobenzene	1900.	
91-20-3	Naphthalene	560.	U
106-47-8	4-Chloroaniline	560.	U
87-68-3	Hexachlorobutadiene	560.	U
59-50-7	4-Chloro-3-methylphenol	3300.	
91-57-6	2-Methylnaphthalene	560.	U
77-47-4	Hexachlorocyclopentadiene	560.	U
88-06-2	2,4,6-Trichlorophenol	560.	U
95-95-4	2,4,5-Trichlorophenol	1400.	U
91-58-7	2-Chloronaphthalene	560.	U
88-74-4	2-Nitroaniline	1400.	U
131-11-3	Dimethylphthalate	560.	U
208-96-8	Acenaphthylene	560.	U
606-20-2	2,6-Dinitrotoluene	560.	U
99-09-2	3-Nitroaniline	1400.	U
83-32-9	Acenaphthene	2000.	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30MSD

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.:25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water) SOIL Lab Sample ID:57283-010MSD

Sample wt/vol: 30.0 (g/ml) G Lab File ID: G1731

Level: (low/med) LOW Date Received:12/15/97

% Moisture: 41 decanted: (Y/N) N Date Extracted:12/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed:12/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1400.	U
100-02-7	4-Nitrophenol	3800.	
132-64-9	Dibenzofuran	560.	U
121-14-2	2,4-Dinitrotoluene	2200.	
84-66-2	Diethylphthalate	560.	U
7005-72-3	4-Chlorophenyl-phenylether	560.	U
86-73-7	Fluorene	560.	U
100-01-6	4-Nitroaniline	1400.	U
534-52-1	4,6-Dinitro-2-methylphenol	1400.	U
86-30-6	N-Nitrosodiphenylamine (1)	560.	U
101-55-3	4-Bromophenyl-phenylether	560.	U
118-74-1	Hexachlorobenzene	560.	U
87-86-5	Pentachlorophenol	3200.	
85-01-8	Phenanthrene	560.	U
120-12-7	Anthracene	560.	U
86-74-8	Carbazole	560.	U
84-74-2	Di-n-butylphthalate	560.	U
206-44-0	Fluoranthene	560.	U
129-00-0	Pyrene	2400.	
85-68-7	Butylbenzylphthalate	560.	U
91-94-1	3,3'-Dichlorobenzidine	560.	U
56-55-3	Benzo(a)anthracene	560.	U
218-01-9	Chrysene	560.	U
117-81-7	bis(2-Ethylhexyl)phthalate	44.	JB
117-84-0	Di-n-octylphthalate	560.	U
205-99-2	Benzo(b)fluoranthene	560.	U
207-08-9	Benzo(k)fluoranthene	560.	U
50-32-8	Benzo(a)pyrene	560.	U
193-39-5	Indeno(1,2,3-cd)pyrene	560.	U
53-70-3	Dibenz(a,h)anthracene	560.	U
191-24-2	Benzo(g,h,i)perylene	560.	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR18

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

CASE 2591
SDG# FFR

Matrix: (soil/water) SOIL Lab Sample ID: 57283-1

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

% Moisture: 51 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.5	U
319-85-7	beta-BHC	3.5	U
319-86-8	delta-BHC	3.5	U
58-89-9	gamma-BHC(Lindane)	3.5	U
76-44-8	Heptachlor	3.5	U
309-00-2	Aldrin	3.5	U
1024-57-3	Heptachlor epoxide	3.5	U
959-98-8	Endosulfan I	3.5	U
60-57-1	Dieldrin	6.7	U
72-55-9	4,4'-DDE	6.7	U
72-20-8	Endrin	6.7	U
33213-65-9	Endosulfan II	6.7	U
72-54-8	4,4'-DDD	6.7	U
1031-07-8	Endosulfan sulfate	6.7	U
50-29-3	4,4'-DDT	6.7	U
72-43-5	Methoxychlor	35.	U
53494-70-5	Endrin ketone	6.7	U
7421-93-4	Endrin aldehyde	6.7	U
5103-71-9	alpha-Chlordane	3.5	U
5103-74-2	gamma-Chlordane	3.5	U
8001-35-2	Toxaphene	350.	U
12674-11-2	Aroclor-1016	67.	U
11104-28-2	Aroclor-1221	140.	U
11141-16-5	Aroclor-1232	67.	U
53469-21-9	Aroclor-1242	67.	U
12672-29-6	Aroclor-1248	67.	U
11097-69-1	Aroclor-1254	67.	U
11096-82-5	Aroclor-1260	67.	U

RHC1-13-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR19

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

CASE 25919
SDG# FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-2

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

% Moisture: 52 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.5	U
319-85-7	beta-BHC	3.5	U
319-86-8	delta-BHC	3.5	U
58-89-9	gamma-BHC(Lindane)	3.5	U
76-44-8	Heptachlor	3.5	U
309-00-2	Aldrin	3.5	U
1024-57-3	Heptachlor epoxide	3.5	U
959-98-8	Endosulfan I	3.5	U
60-57-1	Dieldrin	6.9	U
72-55-9	4,4'-DDE	6.9	U
72-20-8	Endrin	6.9	U
33213-65-9	Endosulfan II	6.9	U
72-54-8	4,4'-DDD	6.9	U
1031-07-8	Endosulfan sulfate	6.9	U
50-29-3	4,4'-DDT	6.9	U
72-43-5	Methoxychlor	35.	U
53494-70-5	Endrin ketone	6.9	U
7421-93-4	Endrin aldehyde	6.9	U
5103-71-9	alpha-Chlordane	3.5	U
5103-74-2	gamma-Chlordane	3.5	U
8001-35-2	Toxaphene	350.	U
12674-11-2	Aroclor-1016	69.	U
11104-28-2	Aroclor-1221	140.	U
11141-16-5	Aroclor-1232	69.	U
53469-21-9	Aroclor-1242	69.	U
12672-29-6	Aroclor-1248	69.	U
11097-69-1	Aroclor-1254	69.	U
11096-82-5	Aroclor-1260	69.	U

RH 01-12-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR22

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-3

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

% Moisture: 26 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.5 Sulfur Cleanup: (Y/N) N

CASE 25919 SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.3	U
319-85-7	beta-BHC	2.3	U
319-86-8	delta-BHC	2.3	U
58-89-9	gamma-BHC(Lindane)	2.3	U
76-44-8	Heptachlor	2.3	U
309-00-2	Aldrin	2.3	U
1024-57-3	Heptachlor epoxide	2.3	U
959-98-8	Endosulfan I	2.3	U
60-57-1	Dieldrin	4.4	U
72-55-9	4,4'-DDE	4.4	U
72-20-8	Endrin	4.4	U
33213-65-9	Endosulfan II	4.4	U
72-54-8	4,4'-DDD	4.4	U
1031-07-8	Endosulfan sulfate	4.4	U
50-29-3	4,4'-DDT	4.4	U
72-43-5	Methoxychlor	23.	U
53494-70-5	Endrin ketone	4.4	U
7421-93-4	Endrin aldehyde	4.4	U
5103-71-9	alpha-Chlordane	2.3	U
5103-74-2	gamma-Chlordane	2.3	U
8001-35-2	Toxaphene	230.	U
12674-11-2	Aroclor-1016	44.	U
11104-28-2	Aroclor-1221	90.	U
11141-16-5	Aroclor-1232	44.	U
53469-21-9	Aroclor-1242	44.	U
12672-29-6	Aroclor-1248	44.	U
11097-69-1	Aroclor-1254	35.	JP
11096-82-5	Aroclor-1260	44.	U

RH 01-13-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR23

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-4

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

CASE 25919
SDG# FFR18

% Moisture: 24 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC(Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	0.71	J
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.3	U
72-55-9	4,4'-DDE	4.3	U
72-20-8	Endrin	4.3	U
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	4.3	U
1031-07-8	Endosulfan sulfate	4.3	U
50-29-3	4,4'-DDT	4.3	U
72-43-5	Methoxychlor	22.	U
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220.	U
12674-11-2	Aroclor-1016	43.	U
11104-28-2	Aroclor-1221	88.	U
11141-16-5	Aroclor-1232	43.	U
53469-21-9	Aroclor-1242	32.	JP
12672-29-6	Aroclor-1248	43.	U
11097-69-1	Aroclor-1254	37.	J
11096-82-5	Aroclor-1260	43.	U

RH 01-14-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR24

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-5

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

% Moisture: 53 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CASE 259
SDG# FFR-

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	25.	JP
319-85-7	beta-BHC	29.	U
319-86-8	delta-BHC	29.	U
58-89-9	gamma-BHC(Lindane)	31.	
76-44-8	Heptachlor	29.	U
309-00-2	Aldrin	64.	
1024-57-3	Heptachlor epoxide	71.	P
959-98-8	Endosulfan I	170.	P
60-57-1	Dieldrin	36.	JP
72-55-9	4,4'-DDE	13.	JP
72-20-8	Endrin	16.	JP
33213-65-9	Endosulfan II	56.	U
72-54-8	4,4'-DDD	89.	
1031-07-8	Endosulfan sulfate	56.	U
50-29-3	4,4'-DDT	56.	U
72-43-5	Methoxychlor	54.	JP
53494-70-5	Endrin ketone	46.	JP
7421-93-4	Endrin aldehyde	56.	U
5103-71-9	alpha-Chlordane	29.	U
5103-74-2	gamma-Chlordane	19.	JP
8001-35-2	Toxaphene	2900.	U
12674-11-2	Aroclor-1016	560.	U
11104-28-2	Aroclor-1221	1100.	U
11141-16-5	Aroclor-1232	560.	U
53469-21-9	Aroclor-1242	560.	U
12672-29-6	Aroclor-1248	560.	U
11097-69-1	Aroclor-1254	560.	U
11096-82-5	Aroclor-1260	560.	U

RH 01-14-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR25

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

CASE 25919
SDG#. FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-6

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

% Moisture: 33 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC(Lindane)	2.5	U
76-44-8	Heptachlor	2.5	U
309-00-2	Aldrin	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	4.9	U
72-55-9	4,4'-DDE	4.9	U
72-20-8	Endrin	4.9	U
33213-65-9	Endosulfan II	4.9	U
72-54-8	4,4'-DDD	4.9	U
1031-07-8	Endosulfan sulfate	4.9	U
50-29-3	4,4'-DDT	4.9	U
72-43-5	Methoxychlor	25.	U
53494-70-5	Endrin ketone	4.9	U
7421-93-4	Endrin aldehyde	4.9	U
5103-71-9	alpha-Chlordane	2.5	U
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	49.	U
11104-28-2	Aroclor-1221	100.	U
11141-16-5	Aroclor-1232	49.	U
53469-21-9	Aroclor-1242	49.	U
12672-29-6	Aroclor-1248	49.	U
11097-69-1	Aroclor-1254	49.	U
11096-82-5	Aroclor-1260	49.	U

RH 01-12-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR27

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-7

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

CASE 2591
SDG# FFR1

% Moisture: 28 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC(Lindane)	2.4	U
76-44-8	Heptachlor	2.4	U
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.6	U
72-55-9	4,4'-DDE	4.6	U
72-20-8	Endrin	4.6	U
33213-65-9	Endosulfan II	4.6	U
72-54-8	4,4'-DDD	4.6	U
1031-07-8	Endosulfan sulfate	4.6	U
50-29-3	4,4'-DDT	4.6	U
72-43-5	Methoxychlor	24.	U
53494-70-5	Endrin ketone	4.6	U
7421-93-4	Endrin aldehyde	4.6	U
5103-71-9	alpha-Chlordane	2.4	U
5103-74-2	gamma-Chlordane	2.4	U
8001-35-2	Toxaphene	240.	U
12674-11-2	Aroclor-1016	46.	U
11104-28-2	Aroclor-1221	93.	U
11141-16-5	Aroclor-1232	46.	U
53469-21-9	Aroclor-1242	46.	U
12672-29-6	Aroclor-1248	46.	U
11097-69-1	Aroclor-1254	46.	U
11096-82-5	Aroclor-1260	46.	U

RH 01-14-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR28

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-8

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

% Moisture: 54 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.8	JP
319-85-7	beta-BHC	1.2	JP
319-86-8	delta-BHC	17.	JP
58-89-9	gamma-BHC(Lindane)	30.	U
76-44-8	Heptachlor	30.	U
309-00-2	Aldrin	21.	JP
1024-57-3	Heptachlor epoxide	1.8	JP
959-98-8	Endosulfan I	34.	P
60-57-1	Dieldrin	12.	JP
72-55-9	4,4'-DDE	6.0	JP
72-20-8	Endrin	57.	U
33213-65-9	Endosulfan II	8.7	JP
72-54-8	4,4'-DDD	57.	U
1031-07-8	Endosulfan sulfate	57.	U
50-29-3	4,4'-DDT	57.	U
72-43-5	Methoxychlor	300.	U
53494-70-5	Endrin ketone	57.	U
7421-93-4	Endrin aldehyde	57.	U
5103-71-9	alpha-Chlordane	30.	U
5103-74-2	gamma-Chlordane	30.	U
8001-35-2	Toxaphene	3000.	U
12674-11-2	Aroclor-1016	570.	U
11104-28-2	Aroclor-1221	1200.	U
11141-16-5	Aroclor-1232	570.	U
53469-21-9	Aroclor-1242	570.	U
12672-29-6	Aroclor-1248	570.	U
11097-69-1	Aroclor-1254	570.	U
11096-82-5	Aroclor-1260	570.	U

RH 01-14-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR29

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-9

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

% Moisture: 31 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.4 Sulfur Cleanup: (Y/N) N

CASE 2591
SDG# FFR1

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC(Lindane)	2.5	U
76-44-8	Heptachlor	2.5	U
309-00-2	Aldrin	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	4.8	U
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	4.8	U
72-43-5	Methoxychlor	25.	U
53494-70-5	Endrin ketone	4.8	U
7421-93-4	Endrin aldehyde	4.8	U
5103-71-9	alpha-Chlordane	2.5	U
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	48.	U
11104-28-2	Aroclor-1221	97.	U
11141-16-5	Aroclor-1232	48.	U
53469-21-9	Aroclor-1242	48.	U
12672-29-6	Aroclor-1248	48.	U
11097-69-1	Aroclor-1254	48.	U
11096-82-5	Aroclor-1260	48.	U

RHc1-12-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.: 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-10

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

CASE 25919
SDG# FFR18

% Moisture: 41 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC(Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	5.6	U
72-55-9	4,4'-DDE	5.6	U
72-20-8	Endrin	5.6	U
33213-65-9	Endosulfan II	5.6	U
72-54-8	4,4'-DDD	5.6	U
1031-07-8	Endosulfan sulfate	5.6	U
50-29-3	4,4'-DDT	5.6	U
72-43-5	Methoxychlor	29.	U
53494-70-5	Endrin ketone	5.6	U
7421-93-4	Endrin aldehyde	5.6	U
5103-71-9	alpha-Chlordane	2.9	U
5103-74-2	gamma-Chlordane	2.9	U
8001-35-2	Toxaphene	290.	U
12674-11-2	Aroclor-1016	56.	U
11104-28-2	Aroclor-1221	110.	U
11141-16-5	Aroclor-1232	56.	U
53469-21-9	Aroclor-1242	56.	U
12672-29-6	Aroclor-1248	56.	U
11097-69-1	Aroclor-1254	56.	U
11096-82-5	Aroclor-1260	56.	U

RH 01-12-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR32

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-11

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

% Moisture: 42 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CASE 25919
SDG# FFR18

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC(Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	5.7	U
72-55-9	4,4'-DDE	5.7	U
72-20-8	Endrin	5.7	U
33213-65-9	Endosulfan II	5.7	U
72-54-8	4,4'-DDD	5.7	U
1031-07-8	Endosulfan sulfate	5.7	U
50-29-3	4,4'-DDT	5.7	U
72-43-5	Methoxychlor	29.	U
53494-70-5	Endrin ketone	5.7	U
7421-93-4	Endrin aldehyde	5.7	U
5103-71-9	alpha-Chlordane	2.9	U
5103-74-2	gamma-Chlordane	2.9	U
8001-35-2	Toxaphene	290.	U
12674-11-2	Aroclor-1016	57.	U
11104-28-2	Aroclor-1221	120.	U
11141-16-5	Aroclor-1232	57.	U
53469-21-9	Aroclor-1242	57.	U
12672-29-6	Aroclor-1248	57.	U
11097-69-1	Aroclor-1254	57.	U
11096-82-5	Aroclor-1260	57.	U

RH 01-12-98

CASE 25919
SDG# FFR18

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FFR56

Lab Name:CLAYTON LABORATORY Contract:68-D5-0005

Lab Code:CLAYTN Case No.25919 SAS No.: SDG No.:FFR18

Matrix: (soil/water)WATER Lab Sample ID: 57283-12

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

% Moisture: decanted: (Y/N) Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc)SEPF Date Extracted:12/17/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N)N pH: 0.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RHcl-12-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKW1

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) WATER Lab Sample ID: 57283-16

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

% Moisture: decanted: (Y/N) Date Received: / / CASE 25919 SDG# FFR18

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/17/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 0.0 Sulfur Cleanup: (Y/N) N

Instrument has a DB-608 column 30m x 0.53mm RH 01-14-98

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RH 01-12-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK1S

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-14

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

CASE 25919
SDG# FFR18

% Moisture: 0 decanted: (Y/N) N Date Received: / /

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC(Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17.	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170.	U
12674-11-2	Aroclor-1016	33.	U
11104-28-2	Aroclor-1221	67.	U
11141-16-5	Aroclor-1232	33.	U
53469-21-9	Aroclor-1242	33.	U
12672-29-6	Aroclor-1248	33.	U
11097-69-1	Aroclor-1254	33.	U
11096-82-5	Aroclor-1260	33.	U

RH 01-19-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30MS

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No.25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-10MS

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

CASE 25919
SDG# FFR1P

% Moisture: 41 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC(Lindane)	18.	
76-44-8	Heptachlor	16.	
309-00-2	Aldrin	18.	
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	39.	
72-55-9	4,4'-DDE	2.8	JP
72-20-8	Endrin	47.	
33213-65-9	Endosulfan II	5.6	U
72-54-8	4,4'-DDD	5.6	U
1031-07-8	Endosulfan sulfate	5.6	U
50-29-3	4,4'-DDT	43.	
72-43-5	Methoxychlor	29.	U
53494-70-5	Endrin ketone	5.6	U
7421-93-4	Endrin aldehyde	5.6	U
5103-71-9	alpha-Chlordane	2.9	U
5103-74-2	gamma-Chlordane	2.9	U
8001-35-2	Toxaphene	290.	U
12674-11-2	Aroclor-1016	56.	U
11104-28-2	Aroclor-1221	110.	U
11141-16-5	Aroclor-1232	56.	U
53469-21-9	Aroclor-1242	56.	U
12672-29-6	Aroclor-1248	56.	U
11097-69-1	Aroclor-1254	55.	JP
11096-82-5	Aroclor-1260	56.	U

RH 01-14-98

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFR30MSD

Lab Name: CLAYTON LABORATORY Contract: 68-D5-0005

Lab Code: CLAYTN Case No. 25919 SAS No.: SDG No.: FFR18

Matrix: (soil/water) SOIL Lab Sample ID: 57283-10MSD

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

CASE 25919
SDG# FFR18

% Moisture: 41 decanted: (Y/N) N Date Received: 12/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/18/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 1/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC(Lindane)	20.	P
76-44-8	Heptachlor	19.	
309-00-2	Aldrin	20.	
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	45.	
72-55-9	4,4'-DDE	2.6	J
72-20-8	Endrin	52.	
33213-65-9	Endosulfan II	5.6	U
72-54-8	4,4'-DDD	5.6	U
1031-07-8	Endosulfan sulfate	5.6	U
50-29-3	4,4'-DDT	45.	
72-43-5	Methoxychlor	29.	U
53494-70-5	Endrin ketone	5.6	U
7421-93-4	Endrin aldehyde	5.6	U
5103-71-9	alpha-Chlordane	2.9	U
5103-74-2	gamma-Chlordane	2.9	U
8001-35-2	Toxaphene	290.	U
12674-11-2	Aroclor-1016	56.	U
11104-28-2	Aroclor-1221	110.	U
11141-16-5	Aroclor-1232	56.	U
53469-21-9	Aroclor-1242	56.	U
12672-29-6	Aroclor-1248	56.	U
11097-69-1	Aroclor-1254	19.	JP
11096-82-5	Aroclor-1260	56.	U

RH 01-14-98

APPENDIX H

Analytical Data Assessment Checklist of CLP Data Packages

Analytical Data Assessment Checklist of CLP Data Packages

Site Name: McGinnis Industrial Maintenance Corporation (MIMC)

No. of samples collected and matrix type:

20 Sediment
7 Groundwater
3 Field Blanks
4 Equipment Rinsates

Laboratories:

The sediment and groundwater samples were analyzed for metals and cyanide by **Sentinel, Inc.** in **Huntsville, AL**. Volatiles, semivolatiles and pesticides were analyzed by **Clayton Environmental Services** in **Novi, MI**. In addition, seven sediments and three groundwater samples were analyzed for dioxins/furans by **MaximTechnologies** in **Minnesota**.

The resulting CLP data packages were reviewed and validated by EPA Region 6 according to the USEPA CLP Statement of Work for Inorganic Analysis (Document Number ILMO4.0), Organic Analysis (Document Number OLMO3.1), and National Functional Guidelines for Organic Data Review (EPA 1994) and Inorganic Analyses (EPA 1994). The EPA data validation reports are included in **Appendix C**. The dioxin/furan data was reviewed and verified according to the EPA Office of Water, Engineering and Analysis Division, method 1613 requirements.

Quality Assurance/Quality Control (QA/QC) Review

According to the Quality Assurance Project Plan (QAPP) for the TNRCC Preliminary Assessment/Site Inspection Program (FY 97), the TNRCC has reviewed the inorganic and organic analyses to ensure accuracy, precision, representativeness, comparability, field custody and completeness. The following is the result of that review presented as an account for the acceptance or rejection of data for its use in Superfund decision-making, including the scoring of this site.

Accuracy

ICP Interference Check Samples (ICS)

ICP Interference Check Samples (ICS) were analyzed at the beginning and end of each sample analysis run and no analytes were detected at levels near the interferant levels.

Laboratory Control Samples (LCS)

Lab Control Samples (LCS) were conducted at adequate frequencies and the analytes had acceptable percent recoveries.

Tuning

For organics, the Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks met the ion abundance criteria.

Internal Standards

Volatile, semivolatile and dioxin/furan internal standards for all the samples were within the QA/QC criteria specified.

Surrogate Recoveries

Volatile surrogate recoveries were acceptable for all samples.

Semivolatile surrogate recoveries were acceptable for all samples.

Pesticide surrogate recoveries were acceptable for all samples in SDG FFR12, and SDG FFR48. For SDG FFR18, the recovery of surrogate tetrachloro-m-xylene (TCX) was greater than the upper QC limit for sample FFR24 on column two. The EPA data summary tables accurately delineate the qualifications as estimated and biased high due to co-eluting interferences.

Release samples affected: FFR24

Matrix Spike Recoveries

For SDG MFHL82, Aluminum, Arsenic, Lead, Selenium and Cyanide had spike recoveries less than the QC limit. This QC problem was attributed to matrix effects and caused the results for these analytes to be qualified as estimated and biased low.

Release samples affected: None

For SDG MFHL40, Antimony and Lead had spike recoveries less then the lower QC limit. This QC problem was attributed to digestion effects and caused the results for Antimony and Lead to be qualified as estimated and biased low. Spike recoveries for Arsenic were marginally greater than the QC criteria but were not qualified.

Release samples affected: MFHL39

All volatile analytes had MS/MSD recoveries within the QC limits.

Several semivolatile analytes had MS/MSD recoveries outside the QC limits for SDG FFR12, FFR48 and FFR18. However, none of these caused any analytes to be qualified and no releases were affected.

All pesticide analytes had MS/MSD recoveries within the QC limits.

Spike recoveries for the dioxin/furan analyses were all within QC limits. However, recoveries of the labeled isomers were generally less than for the non-labeled isomers. This did not cause any results to be qualified and no releases were affected.

Blanks

Several analytes were detected in the inorganic blanks. However, the EPA data summary tables reflect the qualifications and presents several results as undetected with raised sample quantitation limits (SQLs). The raised SQLs did not affect release calculations' results.

No contaminants other than common laboratory contaminants, and several tentatively identified compounds were detected in the method blank results for the organic analyses. The common laboratory contaminants when detected were qualified as estimated with raised sample quantitation limits.

No analytes were detected in the dioxin/furan blanks, and all the recoveries were within QC limits.

Precision

Field Duplicates:

Field duplicate pairs were MFHL85/86, MFHL48/43, MFHL44/45, FFR26/21, FFR57/58 and FFR22/23. In SDG MFHL82, Arsenic had %RPD greater than 50% (Iron had %RPD of 37%). For SDG MFHL40, Arsenic had %RPD greater than 50%.

Release samples affected: None

Inorganic Laboratory Duplicates

For SDG MFHL82, the relative percent difference (% RPD) for Aluminum and Iron were outside the QC criteria, and these analytes when detected were qualified as estimated. This did not affect any release samples. For SDG MFHL40, Aluminum, Calcium, Chromium and Iron had %RPD outside the QC limits, but this did not affect the data quality.

Organic Matrix Spike Duplicate

All analytes were within the %RPD criteria.

ICP replicates reading

Analytes exceeding the coefficient of variation of 20 percent: Arsenic in samples MFHL85, MFHL38, MFHL43, MFHL45 and Selenium in sample MFHL47

Release samples affected: None

Representativeness

Field Blanks

Three field blanks were collected. Sample FFR68 (FB-03) arrived at the laboratory at 9°C and therefore analytes detected were qualified as unusable due to exceedence of holding temperature. Chloroform was the only analyte detected in sample FFR67 (FB-02) which did not affect the data quality.

Rinsate Samples

Decontamination Event Case Number 25725 and SDG Numbers: MFGQ96 and FEY35

The equipment rinsate and blank were analyzed for metals and cyanide by **Chemtech** Laboratory in **Englewood, NJ**. Volatiles, semivolatiles and pesticides were analyzed by **Datachem** Laboratory in **Salt Lake City, Utah.**

All sediment and soil samples were collected in dedicated bowls and spoons. The resulting data packages were reviewed and validated by EPA Region 6. The EPA data verification reports are included in **Appendix C**.

The following is a brief conclusion from the TNRCC review of the inorganic and organic analyses of these samples.

The analysis of the equipment rinsate sample, MFGQ97, revealed detectable amounts of the following analytes:

Analyte (ug/L)	MFGQ97 **(rinsate)**	MFGQ96 **(field blank)**	Calibration Blank Concentrations	IDL (ug/L)	CRDL (ug/L)
Aluminum	6.0(U)	24.5(LUC)*	46	6.0	200
Calcium	32.4(LUC)*	41.8(LUC)*	45.2	7.0	5000
Copper	1.1(LJ_v)	1.0(U)	1.0	1.0	25
Magnesium	13.0(U)	29.6(LUC)*	46.1	13.0	5000
Manganese	1.9(L)	1.0(U)	1.0	1.0	15
Silver	1.1(LUC)*	1.0(U)	1.3	1.0	10
Sodium	155(L)	130(L)	20	20.0	5000
Zinc	4.9(LUC)*	2.0(U)	2.0	2.0	20

Notes: U = Analyte concentration undetected at the laboratory reported detection limit (IDL).
J =The value is an estimated concentration because one or more quality control criteria have not been met.
J_v=Estimated value at the reported sample quantitation limit and biased low.
L = Reported concentration is between the IDL and the CRDL.
UC = Reported concentration should be used as a raised detection limit because of apparent blank contamination.
* = considered undetected because of calibration blank concentrations of these same analytes.

The sample results for calcium, silver and zinc detected in the equipment rinsate sample are considered undetected because of the calibration blank concentrations of these same analytes. Please note that the field blank, sample MFGQ96, was composed of only ultra-distilled water.

Release samples affected: **None** - TNRCC decontamination procedures did not cause any concentrations of the inorganic target analytes from this site screening inspection to be disqualified as releases. The TNRCC concludes that the decontamination procedures of the bowls and spoons did not contribute contamination to the samples.

For organics, the analysis of the equipment rinsate sample, FEY35, revealed detectable amounts of the following analytes:

Analyte (ug/L)	FEY36 **(rinsate)**	FEY35 **(field blank)**	CRQL (ug/L)
Phenol	1(J)	4(J)	10
4-Methylphenol	0.4(J)	12(U)**	10
4-Chloro-3-methylphenol	0.5(J)	0.4(J)	10
Diethylphthalate	0.9(J)	0.5(J)	10
Di-n-butylphthalate	1(J)	0.8(J)	10

Notes: U = Analyte concentration undetected at the reported sample quantitation limit.
J =The value is an estimated concentration because one or more quality control criteria have not been met.
** = Sample volume = 800 ml

The samples did not contain any Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL). The sample results for these analytes detected in the equipment rinsate sample are considered contamination introduced by the decontamination procedure. The data qualification for the sample results was necessary because the concentrations are below the Contract Required Quantitation Limit (CRQL). Please note that the field blank, sample FEY35, was composed of only ultra-distilled water.

Release samples affected: **None** - the contamination incurred through TNRCC decontamination procedures did not cause any concentrations of the organic target analytes from this site screening inspection to be disqualified as releases. The TNRCC concludes that the decontamination procedures of the bowls and spoons did not critically contribute contamination to the samples.

Four additional equipment rinsate samples were collected in the field. Several inorganic and organic constituents were detected. However, these did not affect any release samples.

Holding Times

Samples were collected between December 9-12, 1997. The laboratories received most samples by December 15, 1997. In SDG MFHL82, samples MFHL76, MFHL87, MFHL88 and MFHL89 were not received until December 19, 1997. Cyanide results were qualified as unusable since they were analyzed after the 14-day holding time. In SDG MFHL40, samples MFHL48, MFHL43, MFHL42, MFHL37, MFHL38, MFHL39, MFHL91, MFHL92 and MFHL34 were not received by the laboratory until December 19, 1997.

Cooler temperatures were reported at 4°C +/- 2°C. However, SDG MFHL40 and SDG FFR18, both had samples that arrived at the laboratory at 9°C. This caused two samples (FFR56 and FFR68) to be qualified as unusable due to temperature exceedence.

Comparability

Methodology

Standard EPA methodology was conducted.

ICP Calibrations

ICP inorganic analyte recoveries from calibration solutions met criteria and were conducted at adequate frequencies. ICP standard calibrations for the analytes were within limits. The CRDL standard for Nickel in both SDG MFHL40 and MFHL82 had recoveries greater than the QC criteria and this caused detected Nickel results to be qualified as estimated and biased high.

Organic Initial and Continuing Calibration

Most organic target analytes met the percent relative standard deviation initial calibration criteria and the percent difference continuing calibration criteria. A few target analytes were outside percent difference criteria, but since these are common laboratory contaminants they were not considered to have affected the data.

Calibrations for the dioxin/furan data met all the QC requirements of the method,

Serial Dilution

In SDG MFHL82, Aluminum, Calcium, Magnesium, Potassium and Sodium exceeded the serial dilution QC criteria. Results for Aluminum and Potassium were qualified as estimated and biased high. Magnesium results were qualified as estimated and biased low. Calcium and Sodium results were not qualified because they were only marginally outside the criteria. For SDG MFHL40,

Calcium, Chromium, Magnesium, Manganese, Potassium and Zinc results were qualified as estimated and biased low due to inconsistent serial dilution results.

Other ICP Criteria

The instrument detection limits, the ICP interelement correction factor, and the ICP linear range requirements were met.

EPA Contractual Assessment

EPA contractual assessment of the data packages documented a few items of contractual noncompliance. These items are listed by SDG number in the EPA data validation reports included in Appendix C, and did not disqualify any release constituents.

Field Custody

Custody seals were all present and intact. Sample condition was reported as intact for each sample received. Sample FFR56 for volatile analysis was received leaking with no sample volume in one vial.

Completeness

Number of sample results rejected: 169

Calculated % completeness: 96.6%

All acceptable CLP inorganic and organic data reported herein represent good quality data of reasonable confidence, and are suitable for use in Superfund decision-making, including the scoring of this site.

APPENDIX I

PCDD/PCDF Analyses

#2

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TMRCC		AIRBORNE EXPRESS

Regional Information	Sampler (Name)	Airbill Number
	Wesley Newberry	2423937633

Non-Superfund Program	Sampler Signature	5. Ship To
		MAXIM TECHNOLOGIES 2575 LONE STAR DRIVE DALLAS, TX 75212 ATTN: GLORIA CLARK

Site Name: MC GINNIS

City, State: GALVESTON, TX

Site Spill ID:

3. Purpose*

Lead	Early Action	Long-Term Action
[X] SF	[ ] CLEM	[ ] FS
[ ] PRP	[ ] PA	[ ] RD
[ ] ST	[ ] REM	[ ] RA
[ ] FED	[ ] RI	[ ] O&M
	[X] SI	[ ] NPLD
	[ ] ESI	

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) / Other	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform Eval. — = Not a QC Sample)
FFR27	5	LOW	COMP	5	D	I	O	X / I / N	6-163949-50	SE-04	12/11/97 1050	—	WN	—
FFR25	5	LOW	GRAB	5	D	I	O	X / I / N	6-163992-93	SE-05	12/11/97 1235	—	SP	—
FFR23	5	LOW	GRAB	5	D	I	O	X / I / N	6-164944	SE-12	12/11/97 1220	—	WN	—
FFR22	5	LOW	GRAB	5	D	I	O	X / I / N	6-164930	SE-11	12/11/97 1215	—	WN	—
FFR18	5	LOW	GRAB	5	D	I	O	X / I / N	6-164957-58	SE-13	12/11/97 1315	—	SP	—
FFR19	5	LOW	GRAB	5	D	I	O	X / I / N	6-164970-71	SE-14	12/11/97 1330	—	SP	—
FFR32	5	LOW	COMP	5	D	I	O	X / I / N	6-163929-30	SE-03	12/11/97 1620	—	SP	—

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Yes	1 of 1	FFB	Stephanie Rogers	

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Marshall Carlton	12/12/97 9:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-C12-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

000001

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information

Sampler *(Name)*: Marshall Cedilote

Airbill Number: 2423937235

Non-Superfund Program

Sampler Signature

5. Ship To: Maxim Technologies, 2575 Lone Star Drive, Dallas, TX 75212

ATTN: Gloria Clark (972)263-1133

Site Name: McGinley

3. Purpose*

Lead: [X] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI

Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

City, State: Galveston, TX

Site Spill ID

6. Matrix *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other *(Specify in Column A)*

7. Preservative *(Enter in Column D)*
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other *(Specify in Column D)*
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR64	2	Low	Grab	5	D	10	X	N	6-163956	GW-01	12/10/97 1125	MFHL88	MC	—

00002

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1	FFR64		

CHAIN OF CUSTODY RECORD

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Stephanie Pogue	12/11/97 0500				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

(8)

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25919

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	12/11/97	Airborne Express

Regional Information

Sampler (Name): Wesley Newberry

Airbill Number: 2423937132

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: MAXIM Technologies, 2575 Lone Star Drive, DALLAS, TX 75212, (972)(263-1133)

ATTN: GLORIA CLARK

Site Name: McGINNIS

City, State: GALVESTON, TX

Site Spill ID

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFR57	2	Low	Grab	5	D	O	X	IN	6-164917	GW-04	12/10/97 1605	MFHL85	WN	
FFR58	2	Low	Grab	5					6-164937	GW-05	12/10/97 1607	MFHL86	WN	D FFR57

Shipment for Case Complete? (Y)/(N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
[illegible]	1 of 1	FFR64		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	12/11/97 08:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV.

0000

Analysis Request and Chain of Custody Record

Page ____ of ____

MAXIM TECHNOLOGIES INC 61390

- ☐ **HOUSTON EAS** 222 CAVALCADE ST., HOUSTON, TEXAS 77009 (713) 692-9151
- FROM ☒ **DALLAS EAS** 2575 LONE STAR DR., DALLAS, TEXAS 75212 (214) 631-2700
- ☐ **MIDLAND EAS** 1703 WEST INDUSTRIAL, MIDLAND, TEXAS 79701 (915) 683-3349

Project no. | Client/Project: TNRCC/DALLAS MAXIM | P.O.#

Lab ID No.	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
	D71209S-01AV	12-11-97 10:50			2 4oz JARS	SOIL		DIOXIN	65223
	-02AV	12-11-97 12:35							65224
	-03AV	12-11-97 12:20			1 Jar recd				65225
	-04AV	12-11-97 12:15			1 Jar recd				65226
	-05AV	12-11-97 13:15							65227
	-06AV	12-11-97 13:30							65228
	-07AV	12-11-97 16:20							65229

00004

Samplers: (Print)	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	COC Seal No.
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	REC'D. ON ICE Yes ✓ No ____ 4°
Affiliation	Relinquished by: (Signature) Gloria Rogers	Date: 12-16-97 Time: 2:50	Received by Laboratory: (Signature) Leigh Krueger	Date: 12/17/97 Time: 10:45	Intact: YES
Results by ____ Rush Charges Authorized Yes ____ No ____	REMARKS: Lab's ID's are on outer wrapping of sample		Data Results To: 1. 2.		Laboratory No.

10 ... 61387

Analysis Request and Chain of Custody Record

Page _____ of _____

MAXIM TECHNOLOGIES INC

☐ **HOUSTON EAS** 222 CAVALCADE ST., HOUSTON, TEXAS 77009 (713) 692-9151
FROM ☒ **DALLAS EAS** 2575 LONE STAR DR., DALLAS, TEXAS 75212 (214) 631-2700
☐ **MIDLAND EAS** 1703 WEST INDUSTRIAL, MIDLAND, TEXAS 79701 (915) 683-3349

Project no.

Client/Project: TNRCC

~~P.O.#~~ Client # 108889

Lab ID No.	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
	D712079-01A	12-10-97 16:05		GR	ONE gal	Liquid		DIOXIN	65217
	02A	12-10-97 16:07							65218
	03A	12-11-97 11:25							65219
	03B GR.	12-11-97 11:25							Dup. 65220
	✓ FFR57/GW04	01A							
	✓ FFR58/GW05	02A							
	✓ FFR60/GW01	03A 03B							

Samplers: (Print)	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	COC Seal No.
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	REC'D. ON ICE Yes ✓ No ____
Affiliation	Relinquished by: (Signature) Gloria Rogers	Date: 12-15-97 Time: 2:30	Received by Laboratory: (Signature) Gayle Kruger	Date: 12/16/97 Time: 10:45	Intact: Yes @ 2.8°C

Results by _____

Rush Charges Authorized

Yes _____ No _____

REMARKS: Run all 4 samples

Data Results To:

1.

2.

Laboratory No.

00005

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712079-01A
TCT Sample ID.....65217
Filename.....V71229K
Injected By.....MCH
Total Amount Extracted... 1.05 L
% Moisture.....NA %
Dry Weight Extracted.....NA
ICAL Date.....12/15/97
CCAL Filename(s).....V71229B
Method Blank ID.....BLANK-121897

Matrix.....WATER
Dilution....NA
Collected...12/10/97
Received....12/16/97
Extracted...12/18/97
Analyzed....12/29/97 18:23

NATIVE ISOMERS	CONC ng/L	MDL ng/L	INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF	ND	0.010	2378-TCDF-13C....	2.00	63
TOTAL TCDF	ND	-----	2378-TCDD-13C....	2.00	58
			12378-PeCDF-13C..	2.00	85
2378-TCDD	ND	0.010	23478-PeCDF-13C..	2.00	92
TOTAL TCDD	ND	-----	12378-PeCDD-13C..	2.00	94
			123478-HxCDF-13C.	2.00	70
12378-PeCDF	ND	0.048	123678-HxCDF-13C.	2.00	71
23478-PeCDF	ND	0.048	234678-HxCDF-13C.	2.00	76
TOTAL PeCDF	ND	-----	123789-HxCDF-13C.	2.00	79
			123478-HxCDD-13C.	2.00	69
12378-PeCDD	ND	0.048	123678-HxCDD-13C.	2.00	76
TOTAL PeCDD	ND	-----	1234678-HpCDF-13C	2.00	69
			1234789-HpCDF-13C	2.00	78
123478-HxCDF	ND	0.048	1234678-HpCDD-13C	2.00	66
123678-HxCDF	ND	0.048	OCDD-13C.....	4.00	68
234678-HxCDF	ND	0.048			
123789-HxCDF	ND	0.048	1234-TCDD-13C....	2.00	NA
TOTAL HxCDF	ND	-----	123789-HxCDD-13C.	2.00	NA
123478-HxCDD	ND	0.048	2378-TCDD-37Cl4..	0.20	62
123678-HxCDD	ND	0.048			
123789-HxCDD	ND	0.048			
TOTAL HxCDD	ND	-----			
1234678-HpCDF	ND	0.048			
1234789-HpCDF	ND	0.048			
TOTAL HpCDF	ND	-----			
1234678-HpCDD	ND	0.048			
TOTAL HpCDD	ND	-----			
OCDF	ND	0.095			
OCDD	ND	0.095			

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61387

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712079-02A
TCT Sample ID.....65218
Filename.....V71229L
Injected By.....MCH
Total Amount Extracted... 0.96 L
% Moisture.....NA %
Dry Weight Extracted.....NA
ICAL Date.....12/15/97
CCAL Filename(s).....V71229B
Method Blank ID.....BLANK-121897

Matrix.....WATER
Dilution....NA
Collected...12/10/97
Received....12/16/97
Extracted...12/18/97
Analyzed....12/29/97 19:19

NATIVE ISOMERS	CONC ng/L	MDL ng/L
2378-TCDF	ND	0.010
TOTAL TCDF	ND	-----
2378-TCDD	ND	0.010
TOTAL TCDD	ND	-----
12378-PeCDF	ND	0.052
23478-PeCDF	ND	0.052
TOTAL PeCDF	ND	-----
12378-PeCDD	ND	0.052
TOTAL PeCDD	ND	-----
123478-HxCDF	ND	0.052
123678-HxCDF	ND	0.052
234678-HxCDF	ND	0.052
123789-HxCDF	ND	0.052
TOTAL HxCDF	ND	-----
123478-HxCDD	ND	0.052
123678-HxCDD	ND	0.052
123789-HxCDD	ND	0.052
TOTAL HxCDD	ND	-----
1234678-HpCDF	ND	0.052
1234789-HpCDF	ND	0.052
TOTAL HpCDF	ND	-----
1234678-HpCDD	ND	0.052
TOTAL HpCDD	ND	-----
OCDF	ND	0.100
OCDD	ND	0.100

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	69
2378-TCDD-13C....	2.00	64
12378-PeCDF-13C..	2.00	92
23478-PeCDF-13C..	2.00	94
12378-PeCDD-13C..	2.00	97
123478-HxCDF-13C.	2.00	73
123678-HxCDF-13C.	2.00	73
234678-HxCDF-13C.	2.00	78
123789-HxCDF-13C.	2.00	82
123478-HxCDD-13C.	2.00	71
123678-HxCDD-13C.	2.00	73
1234678-HpCDF-13C	2.00	65
1234789-HpCDF-13C	2.00	66
1234678-HpCDD-13C	2.00	65
OCDD-13C.....	4.00	61
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	72

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61387

662 Cromwell Avenue • St. Paul, MN 55114-1776 • 612-645-3601 • Fax: 612-659-7348

Asteco • Austin Research Engineers • Chen-Northern • Empire Soils Investigations • Kansas City Testing
Maxim Engineers • Nebraska Testing • Patzig Testing • Southwestern Laboratories • Thomas-Hartig • Twin City Testing

An Affirmative Action Equal Opportunity Employer

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712079-03A
TCT Sample ID.....65219
Filename.....V71229M
Injected By.....MCH
Total Amount Extracted... 0.97 L
% Moisture.....NA %
Dry Weight Extracted.....NA
ICAL Date.....12/15/97
CCAL Filename(s).....V71229B
Method Blank ID.....BLANK-121897

Matrix.....WATER
Dilution....NA
Collected...12/11/97
Received....12/16/97
Extracted...12/18/97
Analyzed....12/29/97 20:14

NATIVE ISOMERS	CONC ng/L	MDL ng/L	INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF	ND	0.010	2378-TCDF-13C....	2.00	58
TOTAL TCDF	ND	-----	2378-TCDD-13C....	2.00	51
			12378-PeCDF-13C..	2.00	81
2378-TCDD	ND	0.010	23478-PeCDF-13C..	2.00	85
TOTAL TCDD	ND	-----	12378-PeCDD-13C..	2.00	86
			123478-HxCDF-13C.	2.00	63
12378-PeCDF	ND	0.052	123678-HxCDF-13C.	2.00	60
23478-PeCDF	ND	0.052	234678-HxCDF-13C.	2.00	68
TOTAL PeCDF	ND	-----	123789-HxCDF-13C.	2.00	75
			123478-HxCDD-13C.	2.00	66
12378-PeCDD	ND	0.052	123678-HxCDD-13C.	2.00	68
TOTAL PeCDD	ND	-----	1234678-HpCDF-13C	2.00	68
			1234789-HpCDF-13C	2.00	80
123478-HxCDF	ND	0.052	1234678-HpCDD-13C	2.00	70
123678-HxCDF	ND	0.052	OCDD-13C.....	4.00	60
234678-HxCDF	ND	0.052			
123789-HxCDF	ND	0.052	1234-TCDD-13C....	2.00	NA
TOTAL HxCDF	ND	-----	123789-HxCDD-13C.	2.00	NA
123478-HxCDD	ND	0.052	2378-TCDD-37Cl4..	0.20	55
123678-HxCDD	ND	0.052			
123789-HxCDD	ND	0.052			
TOTAL HxCDD	ND	-----			
1234678-HpCDF	ND	0.052			
1234789-HpCDF	ND	0.052			
TOTAL HpCDF	ND	-----			
1234678-HpCDD	ND	0.052			
TOTAL HpCDD	ND	-----			
OCDF	ND	0.100			
OCDD	ND	0.100			

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61387

662 Cromwell Avenue • St. Paul, MN 55114-1776 • 612-645-3601 • Fax: 612-659-7348

Asteco • Austin Research Engineers • Chen-Northern • Enviro-Chem

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712079-03B
TCT Sample ID.....65220
Filename.....V71230K
Injected By.....MCH
Total Amount Extracted... 0.98 L
% Moisture.....NA %
Dry Weight Extracted.....NA
ICAL Date.....12/15/97
CCAL Filename(s).....V71230B
Method Blank ID.....BLANK-121897

Matrix.....WATER
Dilution....NA
Collected...12/11/97
Received....12/16/97
Extracted...12/18/97
Analyzed....12/30/97 18:42

NATIVE ISOMERS	CONC ng/L	MDL ng/L	INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF	ND	0.010	2378-TCDF-13C....	2.00	77
TOTAL TCDF	ND	-----	2378-TCDD-13C....	2.00	69
			12378-PeCDF-13C..	2.00	84
2378-TCDD	ND	0.010	23478-PeCDF-13C..	2.00	88
TOTAL TCDD	ND	-----	12378-PeCDD-13C..	2.00	81
			123478-HxCDF-13C.	2.00	84
12378-PeCDF	ND	0.051	123678-HxCDF-13C.	2.00	89
23478-PeCDF	ND	0.051	234678-HxCDF-13C.	2.00	87
TOTAL PeCDF	ND	-----	123789-HxCDF-13C.	2.00	94
			123478-HxCDD-13C.	2.00	75
12378-PeCDD	ND	0.051	123678-HxCDD-13C.	2.00	79
TOTAL PeCDD	ND	-----	1234678-HpCDF-13C	2.00	111
			1234789-HpCDF-13C	2.00	100
123478-HxCDF	ND	0.051	1234678-HpCDD-13C	2.00	73
123678-HxCDF	ND	0.051	OCDD-13C.....	4.00	67
234678-HxCDF	ND	0.051			
123789-HxCDF	ND	0.051	1234-TCDD-13C....	2.00	NA
TOTAL HxCDF	ND	-----	123789-HxCDD-13C.	2.00	NA
123478-HxCDD	ND	0.051	2378-TCDD-37Cl4..	0.20	70
123678-HxCDD	ND	0.051			
123789-HxCDD	ND	0.051			
TOTAL HxCDD	ND	-----			
1234678-HpCDF	ND	0.051			
1234789-HpCDF	ND	0.051			
TOTAL HpCDF	ND	-----			
1234678-HpCDD	ND	0.051			
TOTAL HpCDD	ND	-----			
OCDF	ND	0.100			
OCDD	ND	0.100			

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61387

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-07A
TCT Sample ID.....65229
Filename.....V80106J
Injected By.....MCH
Total Amount Extracted...0.0147 kg
% Moisture..... 30.9 %
Dry Weight Extracted.....0.0102 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V80106B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....01/06/98 18:26

NATIVE ISOMERS	CONC ng/kg	MDL ng/kg	INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF	ND	1.0	2378-TCDF-13C....	2.00	63
TOTAL TCDF	ND	-----	2378-TCDD-13C....	2.00	67
			12378-PeCDF-13C..	2.00	72
2378-TCDD	ND	1.0	23478-PeCDF-13C..	2.00	76
TOTAL TCDD	5.7	-----	12378-PeCDD-13C..	2.00	80
			123478-HxCDF-13C.	2.00	72
12378-PeCDF	ND	4.9	123678-HxCDF-13C.	2.00	72
23478-PeCDF	ND	4.9	234678-HxCDF-13C.	2.00	71
TOTAL PeCDF	ND	-----	123789-HxCDF-13C.	2.00	67
			123478-HxCDD-13C.	2.00	69
12378-PeCDD	ND	4.9	123678-HxCDD-13C.	2.00	69
TOTAL PeCDD	ND	-----	1234678-HpCDF-13C	2.00	62
			1234789-HpCDF-13C	2.00	40
123478-HxCDF	ND	4.9	1234678-HpCDD-13C	2.00	84
123678-HxCDF	ND	4.9	OCDD-13C.....	4.00	69
234678-HxCDF	ND	4.9			
123789-HxCDF	ND	4.9	1234-TCDD-13C....	2.00	NA
TOTAL HxCDF	ND	-----	123789-HxCDD-13C.	2.00	NA
123478-HxCDD	ND	4.9	2378-TCDD-37Cl4..	0.20	73
123678-HxCDD	ND	4.9			
123789-HxCDD	ND	4.9			
TOTAL HxCDD	14.0	-----			
1234678-HpCDF	ND	4.9			
1234789-HpCDF	ND	4.9			
TOTAL HpCDF	ND	-----			
1234678-HpCDD	8.6	4.9			
TOTAL HpCDD	38.0	-----			
OCDF	ND	9.8			
OCDD	180.0	9.8			

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-06A
TCT Sample ID.....65228
Filename.....V80106I
Injected By.....SWH
Total Amount Extracted...0.0208 kg
% Moisture..... 51.2 %
Dry Weight Extracted.....0.0101 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V80106B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....01/06/98 17:28

NATIVE ISOMERS	CONC ng/kg		MDL ng/kg
2378-TCDF	1.3	*	1.0
TOTAL TCDF	17.0		-----
2378-TCDD	ND		1.0
TOTAL TCDD	12.0		-----
12378-PeCDF	ND		4.9
23478-PeCDF	ND		4.9
TOTAL PeCDF	ND		-----
12378-PeCDD	ND		4.9
TOTAL PeCDD	25.0		-----
123478-HxCDF	ND		4.9
123678-HxCDF	ND		4.9
234678-HxCDF	ND		4.9
123789-HxCDF	ND		4.9
TOTAL HxCDF	ND		-----
123478-HxCDD	ND		4.9
123678-HxCDD	ND		4.9
123789-HxCDD	ND		4.9
TOTAL HxCDD	130.0		-----
1234678-HpCDF	ND		4.9
1234789-HpCDF	ND		4.9
TOTAL HpCDF	ND		-----
1234678-HpCDD	38.0		4.9
TOTAL HpCDD	160.0		-----
OCDF	ND		9.9
OCDD	430.0		9.9

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	48
2378-TCDD-13C....	2.00	52
12378-PeCDF-13C..	2.00	63
23478-PeCDF-13C..	2.00	71
12378-PeCDD-13C..	2.00	76
123478-HxCDF-13C.	2.00	68
123678-HxCDF-13C.	2.00	67
234678-HxCDF-13C.	2.00	68
123789-HxCDF-13C.	2.00	73
123478-HxCDD-13C.	2.00	69
123678-HxCDD-13C.	2.00	72
1234678-HpCDF-13C	2.00	49
1234789-HpCDF-13C	2.00	43
1234678-HpCDD-13C	2.00	77
OCDD-13C.....	4.00	81
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	51

* Value may include contributions from other TCDF isomers.

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-05A
TCT Sample ID.....65227
Filename.....V80106H
Injected By.....SWH
Total Amount Extracted...0.0209 kg
% Moisture..... 51.8 %
Dry Weight Extracted.....0.0101 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V80106B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....01/06/98 16:32

NATIVE ISOMERS	CONC ng/kg	MDL ng/kg
2378-TCDF	ND	1.0
TOTAL TCDF	1.1	-----
2378-TCDD	ND	1.0
TOTAL TCDD	10.0	-----
12378-PeCDF	ND	5.0
23478-PeCDF	ND	5.0
TOTAL PeCDF	ND	-----
12378-PeCDD	ND	5.0
TOTAL PeCDD	22.0	-----
123478-HxCDF	ND	5.0
123678-HxCDF	ND	5.0
234678-HxCDF	ND	5.0
123789-HxCDF	ND	5.0
TOTAL HxCDF	ND	-----
123478-HxCDD	ND	5.0
123678-HxCDD	ND	5.0
123789-HxCDD	ND	5.0
TOTAL HxCDD	80.0	-----
1234678-HpCDF	ND	5.0
1234789-HpCDF	ND	5.0
TOTAL HpCDF	ND	-----
1234678-HpCDD	19.0	5.0
TOTAL HpCDD	84.0	-----
OCDF	ND	9.9
OCDD	200.0	9.9

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	45
2378-TCDD-13C....	2.00	49
12378-PeCDF-13C..	2.00	59
23478-PeCDF-13C..	2.00	64
12378-PeCDD-13C..	2.00	65
123478-HxCDF-13C.	2.00	64
123678-HxCDF-13C.	2.00	63
234678-HxCDF-13C.	2.00	62
123789-HxCDF-13C.	2.00	58
123478-HxCDD-13C.	2.00	66
123678-HxCDD-13C.	2.00	67
1234678-HpCDF-13C	2.00	46
1234789-HpCDF-13C	2.00	39
1234678-HpCDD-13C	2.00	69
OCDD-13C.....	4.00	61
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	51

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

662 Cromwell Avenue • St. Paul, MN 55114-1776 • 612-645-3601 • Fax: 612-659-7348

Asteco • Austin Research Engineers • Chen-Northern • Empire Soils Investigations • Kansas City Testing
Maxim Engineers • Nebraska Testing • Patzig Testing • Southwestern Laboratories • Thomas-Hartig • Twin City Testing

An Affirmative Action Equal Opportunity Employer

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-04A
TCT Sample ID.....65226
Filename.....V80106G
Injected By.....DGP
Total Amount Extracted...0.0138 kg
% Moisture..... 24.1 %
Dry Weight Extracted.....0.0104 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V80106B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....01/06/98 15:42

NATIVE ISOMERS	CONC ng/kg		MDL ng/kg
2378-TCDF	43.0	*	1.0
TOTAL TCDF	75.0		-----
2378-TCDD	20.0		1.0
TOTAL TCDD	22.0		-----
12378-PeCDF	ND		4.8
23478-PeCDF	ND		4.8
TOTAL PeCDF	ND		-----
12378-PeCDD	ND		4.8
TOTAL PeCDD	ND		-----
123478-HxCDF	6.1		4.8
123678-HxCDF	ND		4.8
234678-HxCDF	ND		4.8
123789-HxCDF	ND		4.8
TOTAL HxCDF	6.1		-----
123478-HxCDD	ND		4.8
123678-HxCDD	ND		4.8
123789-HxCDD	ND		4.8
TOTAL HxCDD	5.8		-----
1234678-HpCDF	ND		4.8
1234789-HpCDF	ND		4.8
TOTAL HpCDF	ND		-----
1234678-HpCDD	6.1		4.8
TOTAL HpCDD	18.0		-----
OCDF	ND		9.6
OCDD	80.0		9.6

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	56
2378-TCDD-13C....	2.00	57
12378-PeCDF-13C..	2.00	65
23478-PeCDF-13C..	2.00	70
12378-PeCDD-13C..	2.00	62
123478-HxCDF-13C.	2.00	72
123678-HxCDF-13C.	2.00	73
234678-HxCDF-13C.	2.00	72
123789-HxCDF-13C.	2.00	74
123478-HxCDD-13C.	2.00	67
123678-HxCDD-13C.	2.00	74
1234678-HpCDF-13C	2.00	52
1234789-HpCDF-13C	2.00	42
1234678-HpCDD-13C	2.00	69
OCDD-13C.....	4.00	62
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	64

* Value may include contributions from other TCDF isomers.

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-03A
TCT Sample ID.....65225
Filename.....V80106F
Injected By.....DGP
Total Amount Extracted...0.0140 kg
% Moisture..... 26.6 %
Dry Weight Extracted.....0.0103 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V80106B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....01/06/98 14:44

NATIVE ISOMERS	CONC ng/kg		MDL ng/kg
2378-TCDF	35.0	*	1.0
TOTAL TCDF	63.0		-----
2378-TCDD	19.0		1.0
TOTAL TCDD	22.0		-----
12378-PeCDF	ND		4.9
23478-PeCDF	ND		4.9
TOTAL PeCDF	ND		-----
12378-PeCDD	ND		4.9
TOTAL PeCDD	ND		-----
123478-HxCDF	5.5		4.9
123678-HxCDF	ND		4.9
234678-HxCDF	ND		4.9
123789-HxCDF	ND		4.9
TOTAL HxCDF	5.5		-----
123478-HxCDD	ND		4.9
123678-HxCDD	ND		4.9
123789-HxCDD	ND		4.9
TOTAL HxCDD	6.5		-----
1234678-HpCDF	ND		4.9
1234789-HpCDF	ND		4.9
TOTAL HpCDF	ND		-----
1234678-HpCDD	7.1		4.9
TOTAL HpCDD	21.0		-----
OCDF	ND		9.7
OCDD	84.0		9.7

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	50
2378-TCDD-13C....	2.00	48
12378-PeCDF-13C..	2.00	57
23478-PeCDF-13C..	2.00	64
12378-PeCDD-13C..	2.00	67
123478-HxCDF-13C.	2.00	65
123678-HxCDF-13C.	2.00	65
234678-HxCDF-13C.	2.00	61
123789-HxCDF-13C.	2.00	60
123478-HxCDD-13C.	2.00	65
123678-HxCDD-13C.	2.00	65
1234678-HpCDF-13C	2.00	46
1234789-HpCDF-13C	2.00	35
1234678-HpCDD-13C	2.00	60
OCDD-13C.....	4.00	55
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	53

* Value may include contributions from other TCDF isomers.

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-02A
TCT Sample ID.....65224
Filename.....V71230M
Injected By.....MCH
Total Amount Extracted...0.0160 kg
% Moisture..... 33.9 %
Dry Weight Extracted.....0.0106 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V71230B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....12/30/97 20:29

NATIVE ISOMERS	CONC ng/kg		MDL ng/kg
2378-TCDF	4.5	*	1.0
TOTAL TCDF	8.2		-----
2378-TCDD	1.5		1.0
TOTAL TCDD	4.4		-----
12378-PeCDF	ND		4.7
23478-PeCDF	ND		4.7
TOTAL PeCDF	ND		-----
12378-PeCDD	ND		4.7
TOTAL PeCDD	ND		-----
123478-HxCDF	ND		4.7
123678-HxCDF	ND		4.7
234678-HxCDF	ND		4.7
123789-HxCDF	ND		4.7
TOTAL HxCDF	ND		-----
123478-HxCDD	ND		4.7
123678-HxCDD	ND		4.7
123789-HxCDD	ND		4.7
TOTAL HxCDD	25.0		-----
1234678-HpCDF	ND		4.7
1234789-HpCDF	ND		4.7
TOTAL HpCDF	ND		-----
1234678-HpCDD	14.0		4.7
TOTAL HpCDD	52.0		-----
OCDF	ND		9.5
OCDD	180.0		9.5

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	68
2378-TCDD-13C....	2.00	62
12378-PeCDF-13C..	2.00	70
23478-PeCDF-13C..	2.00	73
12378-PeCDD-13C..	2.00	74
123478-HxCDF-13C.	2.00	66
123678-HxCDF-13C.	2.00	67
234678-HxCDF-13C.	2.00	66
123789-HxCDF-13C.	2.00	68
123478-HxCDD-13C.	2.00	62
123678-HxCDD-13C.	2.00	62
1234678-HpCDF-13C	2.00	48
1234789-HpCDF-13C	2.00	65
1234678-HpCDD-13C	2.00	63
OCDD-13C.....	4.00	57
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	64

* Value may include contributions from other TCDF isomers.

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

MAXIM
TECHNOLOGIES INC

METHOD 1613 ANALYSIS RESULTS

Client....MAXIM

Client's Sample ID.....D712095-01A
TCT Sample ID.....65223
Filename.....V71230L
Injected By.....MCH
Total Amount Extracted...0.0141 kg
% Moisture..... 27.0 %
Dry Weight Extracted.....0.0103 kg
ICAL Date.....12/15/97
CCAL Filename(s).....V71230B
Method Blank ID.....BLANK-121897

Matrix.....SOIL
Dilution....NA
Collected...12/11/97
Received....12/17/97
Extracted...12/18/97
Analyzed....12/30/97 19:38

NATIVE ISOMERS	CONC ng/kg		MDL ng/kg
2378-TCDF	82.0	*	1.0
TOTAL TCDF	150.0		-----
2378-TCDD	53.0		1.0
TOTAL TCDD	57.0		-----
12378-PeCDF	ND		4.8
23478-PeCDF	ND		4.8
TOTAL PeCDF	ND		-----
12378-PeCDD	ND		4.8
TOTAL PeCDD	ND		-----
123478-HxCDF	ND		4.8
123678-HxCDF	ND		4.8
234678-HxCDF	ND		4.8
123789-HxCDF	ND		4.8
TOTAL HxCDF	ND		-----
123478-HxCDD	ND		4.8
123678-HxCDD	ND		4.8
123789-HxCDD	ND		4.8
TOTAL HxCDD	8.2		-----
1234678-HpCDF	ND		4.8
1234789-HpCDF	ND		4.8
TOTAL HpCDF	ND		-----
1234678-HpCDD	6.4		4.8
TOTAL HpCDD	21.0		-----
OCDF	ND		9.7
OCDD	78.0		9.7

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	68
2378-TCDD-13C....	2.00	63
12378-PeCDF-13C..	2.00	72
23478-PeCDF-13C..	2.00	76
12378-PeCDD-13C..	2.00	74
123478-HxCDF-13C.	2.00	71
123678-HxCDF-13C.	2.00	71
234678-HxCDF-13C.	2.00	72
123789-HxCDF-13C.	2.00	73
123478-HxCDD-13C.	2.00	66
123678-HxCDD-13C.	2.00	66
1234678-HpCDF-13C	2.00	66
1234789-HpCDF-13C	2.00	81
1234678-HpCDD-13C	2.00	69
OCDD-13C.....	4.00	65
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	67

* Value may include contributions from other TCDF isomers.

All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
MDL = Method Detection Limit
ND = Not Detected
NA = Not Applicable

Maxim/TCT Report No...3030 97-61390

662 Cromwell Avenue • St. Paul, MN 55114-1776 • 612-645-3601 • Fax: 612-659-7348

00016

Asteco • Austin Research Engineers • Chen-Northern • Empire Soils Investigations • Kansas City Testing
Maxim Engineers • Nebraska Testing • Patzig Testing • Southwestern Laboratories • Thomas-Hartig • Twin City Testing

An Affirmative Action Equal Opportunity Employer

APPENDIX J

State of Texas Water Quality Inventory
Vol. 4

The State of Texas Water Quality Inventory 96

SURFACE WATER QUALITY MONITORING PROGRAM

13th Edition, 1996 • Prepared Pursuant to Section 305(b) Federal Clean Water Act

Basin Summaries, Basin Maps, Graphical Basin Summaries, Segment Fact Sheets, and Water Quality Status Tables (Basins 21 - 25)

4

VOLUME FOUR

SFR-50 ◆ 12/96

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

THE STATE OF TEXAS WATER QUALITY INVENTORY

13th Edition
1996

Prepared Pursuant to
SECTION 305(b)
FEDERAL CLEAN WATER ACT

VOLUME 4

Basin Summaries, Graphical Basin Summaries, Basin Maps, Segment Fact Sheets and Water Quality Status Tables (Basins 21-25)

by the

Texas Natural Resource Conservation Commission

December 1996

Barry R. McBee, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*

Dan Pearson, *Executive Director*

Authorization for use or reproduction of any original material contained in this publication, i.e., not obtained from other sources, is freely granted. The Commission would appreciate acknowledgement.

Published and distributed
by the
Texas Natural Resource Conservation Commission
Post Office Box 13087
Austin, Texas 78711-3087

The TNRCC is an equal opportunity/affirmative action employer. The agency does not allow discrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual orientation or veteran status. In compliance with the Americans with Disabilities Act, this document may be requested in alternate formats by contacting the TNRCC at (512)239-0010, Fax 239-0055, or 1-800-RELAY-TX (TDD), or by writing P.O. Box 13087, Austin, TX 78711-3087.

FOREWORD

The 13th Edition (1996) of the State of Texas Water Quality Inventory Report includes presentation and screening of historical field measurements, water chemistry data, and data regarding toxic substances in water, sediments, and fish tissue. Including these data in the report provides a comprehensive information resource that permits an evaluation of the status of and trends in water quality statewide. However, including status tables for water quality, sediment quality, and tissue quality for each stream, reservoir, and bay segment for which historical data are available greatly adds to the size of the report. For this reason, the 13th Edition of the report is divided into four volumes to permit easier handling and review:

Volume 1: Surface and Groundwater Assessments and TNRCC Water Quality Management Programs

Volume 2: Basin Summaries, Graphical Basin Summaries, Basin Maps, Segment Fact Sheets, and Water Quality Status Tables (Basins 1-10)

Volume 3: Basin Summaries, Graphical Basin Summaries, Basin Maps, Segment Fact Sheets, and Water Quality Status Tables (Basins 11-20)

Volume 4: Basin Summaries, Graphical Basin Summaries, Basin Maps, Segment Fact Sheets, and Water Quality Status Tables (Basins 21-25)

Acronyms are used throughout the report to reduce its overall volume. Beginning with the Executive Summary, each acronym is identified in parentheses, following the complete spelling of the term, at it's first usage and is not normally repeated afterward. A complete listing of all acronyms used in the report is provided in Appendix A of Volume 1.

Single copies of each volume of the report may be obtained free of charge from the TNRCC's Public Information and Publications Division (Phone: 512/239-0028; FAX: 512/239-4488).

TABLE OF CONTENTS

VOLUME 4

Basin Summaries, Graphical Basin Summaries, Basin Maps, Segment Fact Sheets, and Water Quality Status Tables (Basins 21-25)

	Page
FOREWARD	iii
EXPLANATION OF BASIN/SEGMENT INFORMATION	1
Narrative Basin Summary	1
Graphical Basin Summary	1
Basin Map	1
Segment Fact Sheets	1
Name and Description	1
Length/Surface Area	2
Segment Classification	2
Designated Water Uses	2
Use Attainability Analysis	2
Stations Monitored in the Last Four Years	2
Published Studies	3
Ambient Toxicity Monitoring Stations	3
Summary of Fish Kills	3
Fish Consumption Advisories and/or Closures	4
Permitted Facilities	4
Segment Summary	4
Water Quality Status Tables	4

TABLE OF CONTENTS CONTINUED

VOLUME 4

	Page
Nueces River Basin	7
Segment 2101: Nueces River Tidal	11
Segment 2102: Nueces River below Lake Corpus Christi	16
Segment 2103: Lake Corpus Christi	19
Segment 2104: Nueces River above Frio River	21
Segment 2105: Nueces River above Holland Dam	23
Segment 2106: Nueces/Lower Frio River	26
Segment 2107: Atascosa River	30
Segment 2108: San Miguel Creek	33
Segment 2109: Leona River	35
Segment 2110: Lower Sabinal River	38
Segment 2111: Upper Sabinal River	40
Segment 2112: Upper Nueces River	46
Segment 2113: Upper Frio River	52
Segment 2114: Hondo Creek	56
Segment 2115: Seco Creek	60
Segment 2116: Choke Canyon Reservoir	65
Segment 2117: Frio River above Choke Canyon Reservoir	67
Nueces-Rio Grande Coastal Basin	69
Segment 2201: Arroyo Colorado Tidal	73
Segment 2202: Arroyo Colorado above Tidal	88

TABLE OF CONTENTS CONTINUED

VOLUME 4

	Page
Segment 2203: Petronila Creek Tidal	110
Segment 2204: Petronila Creek above Tidal	113
Rio Grande Basin	115
Segment 2301: Rio Grande Tidal	119
Segment 2302: Rio Grande below Falcon Reservoir	134
Segment 2303: International Falcon Reservoir	154
Segment 2304: Rio Grande below Amistad Reservoir	173
Segment 2305: International Amistad Reservoir	194
Segment 2306: Rio Grande above Amistad Reservoir	204
Segment 2307: Rio Grande below Riverside Diversion Dam	224
Segment 2308: Rio Grande below International Dam	244
Segment 2309: Devils River	264
Segment 2310: Lower Pecos River	284
Segment 2311: Upper Pecos River	304
Segment 2312: Red Bluff Reservoir	308
Segment 2313: San Felipe Creek	313
Segment 2314: Rio Grande above International Dam	333
Bays and Estuaries	357
Segment 2411: Sabine Pass	363
Segment 2412: Sabine Lake	368
Segment 2421: Upper Galveston Bay	376

TABLE OF CONTENTS CONTINUED

VOLUME 4

		Page
Segment 2422:	Trinity Bay	386
Segment 2423:	East Bay	396
Segment 2424:	West Bay	402
Segment 2425:	Clear Lake	408
Segment 2426:	Tabbs Bay	414
Segment 2427:	San Jacinto Bay	418
Segment 2428:	Black Duck Bay	421
Segment 2429:	Scott Bay	423
Segment 2430:	Burnett Bay	425
Segment 2431:	Moses Lake	429
Segment 2432:	Chocolate Bay	434
Segment 2433:	Bastrop Bay/Oyster Lake	437
Segment 2434:	Christmas Bay	440
Segment 2435:	Drum Bay	450
Segment 2436:	Barbours Cut	454
Segment 2437:	Texas City Ship Channel	456
Segment 2438:	Bayport Channel	462
Segment 2439:	Lower Galveston Bay	465
Segment 2441:	East Matagorda Bay	483
Segment 2442:	Cedar Lakes	486
Segment 2451:	Matagorda Bay/Powderhorn Lake	491

TABLE OF CONTENTS CONTINUED

VOLUME 4

		Page
Segment 2452:	Tres Palacios Bay/Turtle Bay	496
Segment 2453:	Lavaca Bay/Chocolate Bay	499
Segment 2454:	Cox Bay	515
Segment 2455:	Keller Bay	519
Segment 2456:	Carancahua Bay	523
Segment 2461:	Espiritu Santo Bay	526
Segment 2462:	San Antonio Bay/Hynes Bay/Guadalupe Bay	530
Segment 2463:	Mesquite Bay/Carlos Bay/Ayres Bay	534
Segment 2471:	Aransas Bay	538
Segment 2472:	Copano Bay/Port Bay/Mission Bay	541
Segment 2473:	St. Charles Bay	544
Segment 2481:	Corpus Christi Bay	548
Segment 2482:	Nueces Bay	564
Segment 2483:	Redfish Bay	568
Segment 2484:	Coprus Christi Inner Harbor	572
Segment 2485:	Oso Bay	588
Segment 2491:	Laguna Madre	593
Segment 2492:	Baffin Bay/Alazan Bay/Cayo del Grullo/ Laguna Salada	598
Segment 2493:	South Bay	601
Segment 2494:	Brownsville Ship Channel	603

EXPLANATION OF BASIN/SEGMENT FACT SHEET INFORMATION

In this section of the report, water quality within each stream, reservoir, estuary, and Gulf of Mexico segment is assessed individually. Basin summaries are provided for a cumulative overview of water quality. This assessment approach identifies problems that are unique to individual basins, spatially delineates problem areas, accounts for differences among basins, and evaluates cumulative pollution impacts. All 25 basins and 368 classified segments were included in the assessments, which begin with the Canadian Basin (numbered 0100) and end with the Gulf of Mexico (numbered 2500).

Narrative Basin Summary

The basin summary provides basic introductory information concerning geography, economy, size, and number of segments within the basin. The most prominent water quality problems and unique water quality characteristics are identified.

Graphical Basin Summary

The graphical basin summary provides a visual presentation of all classified segments within a basin regarding the status of use support, criteria support, and water quality concerns. The graphical basin summary is intended to provide a quick reference to prominent water quality problems within a basin. The segment fact sheets and water quality status tables should be reviewed if more detailed information is needed.

Basin Map

A map of the basin follows the basin summary. All major counties, cities, highways, and water bodies found within the basin are located on the map. Each classified segment within the basin is identified by number, and its boundaries are delineated.

Segment Fact Sheets

Fact sheets are provided for each classified segment found within each basin. The fact sheets are generally arranged from the most downstream segment to most upstream segment within each watershed of the basin. The basin map is a handy reference for locating segments and their number.

Name and Description

The segment name and description are taken directly from the TSWQS. The description provides the lower and upper segment boundaries for streams and rivers and the geographical boundaries for reservoirs and bays.

Length/Surface Area

The length or surface area for each segment was determined by physical measurement or computer-assisted techniques using USGS topographic maps (1:24,000 scale). Stream and river lengths are reported in miles and kilometers; reservoir area, in acres and hectares; and bays, in square miles and square kilometers.

Segment Classification

Classified surface waters are listed as water quality limited or effluent limited. Segments are classified as water quality limited if one or more of the following are applicable: (1) surface water quality monitoring data indicate significant violations of criteria in the TSWQS that are protective of aquatic life, contact recreation, public water supply, or oyster waters uses; (2) advanced waste treatment for point source wastewater discharges is required to meet water quality standards (advanced waste treatment is defined as treatment equal to or more stringent than 30-day average of 10 mg/L $CBOD_5$ and 12 mg/L ammonia nitrogen); (3) the segment is a public water supply reservoir (requires special wastewater treatment considerations; see Reservoir Control Programs section). All other segmented waters are classified effluent limited, indicating that water quality standards are being maintained and that conventional wastewater treatment is adequate to protect existing conditions.

Designated Water Uses

The listed designated uses were taken directly from the TSWQS and may include one or more of the following: aquatic life (limited to exceptional); contact recreation; noncontact recreation; public water supply; industrial supply water; agricultural water supply; navigation; aquifer protection; oyster waters.

Use Attainability Analysis

Use attainability analyses are conducted by the TNRCC to determine whether designated uses established for each classified segment in the TSWQS are appropriately set and whether those uses are impaired. The use attainability analysis identifies the causes of use impairments. The results of use attainability analyses typically bring about changes in use assignments and modification of supporting criteria. These changes are reflected in revisions to the TSWQS. Information concerning specific use attainability analyses may be obtained by contacting the TNRCC's Water Quality Standards Team.

Stations Monitored In The Last Four Years

The number of sites that have been monitored during the past four years (September 1990-August 1994) is provided. These include stations that are located on each classified water body (on segment) or on other tributary streams, reservoirs, and estuaries (off segment) that ultimately drain to the classified segment. Stations which are monitored by the TNRCC, USGS, International Boundary and Water Commission (IBWC), TDH, river authorities, cities, local

governments, and Texas Watch volunteers and for which water quality data are resident in the SWQM Database are included. SWQM data from these sites may be obtained by contacting the TNRCC's Surface Water Quality Monitoring Team.

Published Studies

The date(s) of intensive surveys and special studies which have been published by the TNRCC are listed, as well as the types of data collected, the TNRCC report number, and author of the report. Copies of the reports may be obtained by contacting the TNRCC's Public Information and Publications Division. Types of data codes shown on the segment fact sheets are:

A	Algal Growth Potential
B	Bacteriological
C	Chemical (nutrients, BOD, solids, salts)
D	Dye Studies
F	Field Measurements (DO, pH, temperature, conductivity, Secchi disk)
I	Benthic Macroinvertebrates
L	Tidal Data
M	Macrophytes (vascular aquatic plants)
N	Nekton (fish, shellfish)
O	Sediment Oxygen Demand
P	Plankton or Periphyton (drifting or attached microscopic plants)
Q	Flow Measurements
R	Reaeration Measurements
S	Metals or Organic Substances in Sediment
T	Metals or Organic Substances in Animal Tissue
W	Metals or Organic Substances in Water
X	Stream Width Measurements

Ambient Toxicity Monitoring Stations

The number of monitoring sites, both on and off the classified segment, where water and/or sediment samples are collected for bioassay purposes is provided. The data from these sites are stored on a personal computer Paradox database and may be obtained by contacting the TNRCC's Surface Water Quality Monitoring Team.

Summary of Fish Kills

The number of fish kills that have occurred within the segment is provided. The water body is identified and information is provided concerning the date of the kill, the identified cause(s), and size of the kill. Fish kill data are currently maintained on a mainframe database and may be obtained by contacting the Surface Water Quality Monitoring Team.

Fish Consumption Advisories and/or Closures

The Texas Department of Health is responsible for issuance of fish/shellfish consumption advisories, aquatic life closures, and commercial bans. Those that have been issued and affect all or portions of the classified segment or other waters that have drainage to the segment are provided on the fact sheets.

Permitted Facilities

The number of domestic and industrial outfalls permitted by the TNRCC as of August 31, 1994 and their cumulative effluent volumes is provided. Large-volume permitted cooling water discharges were not included in the inventory. The number of outfalls does not necessarily equal the number of permittees, since a single permittee may have more than one outfall.

Segment Summary

An overview of the more prominent water quality problems, TNRCC regulatory actions, and ongoing studies is provided. Water quality parameters that exceed criteria or screening levels, and are causes of use nonsupport or concern are identified and discussed. The methodology for determination of use support is explained in Volume 1. The rating criteria were developed as a quantitative assessment tool consistent with EPA guidance for preparation of the 305b report. Determination of the actual use support and compliance with TSWQS requires further qualitative assessment by professional staff, consideration of additional information, and comparison with use support definitions specified in the TSWQS. That process was not used in the development of this document. Historical water quality perspectives and long-term trends are also discussed.

Water Quality Status Tables

The methodologies for determining use support, water quality concerns, and support of selected parameter criteria are fully discussed in the Surface Water Assessment Section. This section also provides details on how some of the data (field measurement profiles, nondetects, conversions of conductivity to TDS) shown in the water quality status tables were manipulated. Following each segment fact sheet are water quality status tables. Common to all the segments is a Field Measurements and Water Chemistry Table. If toxic substances were monitored within the segment, one or more of the following tables may also be provided: Toxic Substances in Water, Toxic Substances in Sediment, or Toxic Substances in Fish Tissue. Each table provides a cumulative summary of data which were collected from all "on segment" SWQM sites. Four years of data (September 1990-August 1994) are summarized in the Field Measurements and Water Chemistry and Toxic Substances in Water Tables. A 10-year period of record (September 1984-August 1994) was employed in the Toxic Substances in Sediment and Toxic Substances in Fish Tissue Tables.

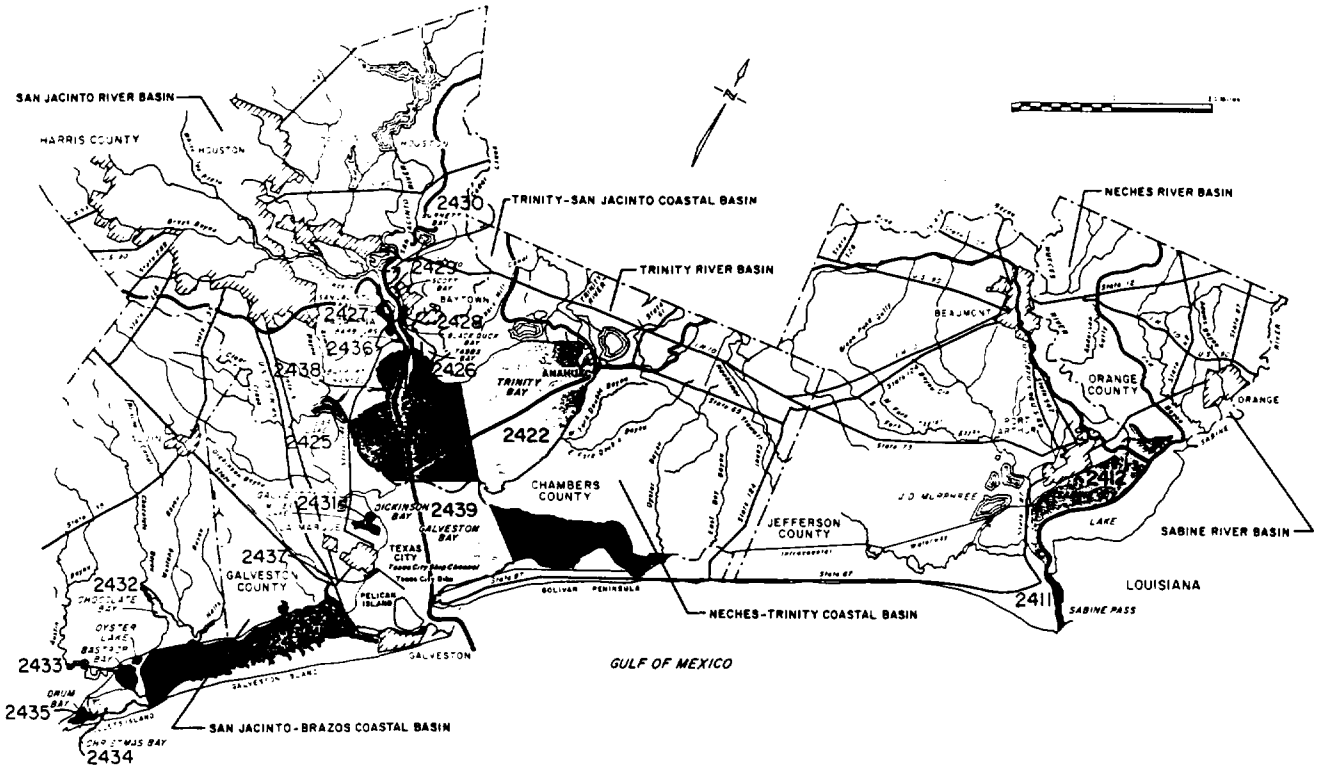
On each water quality status table, the appropriate water quality criterion or screening level for each parameter is provided. Summary statistics for each parameter include the number of samples, number of detects (reported values exceeding a minimum level of detection), and the

minimum, maximum, and mean values. The number of values and/or detects outside the criteria or screening levels are also provided for each parameter. Only reported values above a minimum level of detection were used to determine compliance with criteria and/or screening levels established for field measurements, water chemistry and toxic substances in water, sediment and tissue. These numbers, expressed as a percentage of the total number of samples and/or detects, were used to generally determine support of uses and criteria and identify water quality concerns. Screening levels were developed for this report by incorporating all values in the SWQM Database, including nondetects (reported values less than a minimum level of detection as 50% of their values). Summary statistics (minimum, maximum, and mean) include nondetects as 50% of their value. In some instances, mean and maximum values may be reported that exceed a referenced screening level, while the number of detects on the same line is reported as zero. This reporting conflict reflects inclusion of nondetects with elevated minimum levels of detection in the computation of summary statistics. For a more thorough discussion of screening levels and their development refer to the Surface Water Assessment Section in Volume 1 of this report.

BAYS AND ESTUARIES SUMMARY

Bays and Estuaries Segments	Segment 2456	Segment 2461	Segment 2462	Segment 2463	Segment 2471	Segment 2472	Segment 2473	Segment 2481	Segment 2482	Segment 2483	Segment 2484	Segment 2485	Segment 2491	Segment 2492	Segment 2493	Segment 2494
DESIGNATED USE SUPPORT																
Contact Recreation	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	○	♦	♦	♦	♦	♦
Public Water Supply	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Oyster Waters	☒	♦	☒	♦	♦	♦	♦	☒	☒	♦	♦	☒	♦	♦	♦	♦
Fish Consumption	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
AQUATIC LIFE																
Dissolved Oxygen	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Water Toxics	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	☒	♦	♦	♦	♦	♦
CRITERIA SUPPORT																
Water Temperature	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
pH	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Chloride	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Sulfate	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Total Dissolved Solids	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
CONCERNS																
Ammonia	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Nitrite + Nitrate	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Total Phosphorus	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Orthophosphorus	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Chlorophyll *a*	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
SEDIMENT	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
FISH TISSUE	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦

♦=SUPPORT ☒=NONSUPPORT ♦= NO CONCERN ♦=CONCERN ○= DOES NOT APPLY



Bays

[redacted]

SEGMENT 2424 OF THE BAYS AND ESTUARIES

NAME: West Bay

DESCRIPTION:

LENGTH/SURFACE AREA: 69.3 square miles (179.5 square kilometers)

SEGMENT CLASSIFICATION: Effluent Limited

DESIGNATED WATER USES: Contact Recreation
High Aquatic Life
Oyster Waters

USE ATTAINABILITY ANALYSIS: None

STATIONS MONITORED IN THE LAST FOUR YEARS ON SEGMENT: 21 OFF SEGMENT: 2

PUBLISHED STUDIES: None

AMBIENT TOXICITY MONITORING STATIONS: None

SUMMARY OF FISH KILLS: 1

Water Body	Date	Cause	Size of Kill
Sea Isle Subdivision	05/19/92	Unknown	11-100
Jones Bay-Highland Bayou Diversion Canal	02/27/94	Natural winter bloom	5,280
West Bay	03/15/93	Yellow substance on water	Not Reported
Isla Del Sol Subdivision	07/08/93	Low DO, poor circulation	Not Reported
Sea Isle Subdivision	07/21/93	Low DO, poor circulation	No count

FISH CONSUMPTION ADVISORIES AND/OR CLOSURES: None

PERMITTED FACILITIES (FINAL):

Domestic	13 outfalls	16.95 MGD
Industrial	1 outfall	0.01 MGD
Agricultural	0 outfalls	0.00 MGD
Total	14 outfalls	16.96 MGD

SEGMENT SUMMARY:

Based on the TNRCC criterion, the oyster water use was partially supported due to moderately elevated fecal coliform levels throughout the bay. Time, extent, and area of actual shellfish closures are based on criteria administered by the Texas Department of Health. Other water quality standards and designated uses were supported. Low dissolved oxygen levels are common in the dead-end canals of subdivisions located adjacent to West Bay due to poor circulation. Elevated nutrients trapped in these canals can cause excess algal growth and subsequent oxygen depletion, especially during warm summer months.

APPENDIX K

Communication with Texas Department of Health

Texas Department of Health
SEAFOOD SAFETY DIVISION
1100 West 49th Street
Austin, Texas 78756-3199
(512) 719-0215
FAX (512) 719-0220

FAX TRANSMITTAL

To: Mr. Marshall Cedilote, TNRCC

Fax: (512) 239-2469

Date: 3/25/98

From:

____ Mr. Richard Thompson	____ Mr. Kirk Wiles
____ Mr. Mike Ordner	____ Mr. David Estlack
____ Mr. Jeff Kirkpatrick	____ Mr. Norman Rice
_X_ Mr. Gary Heideman	____ Ms. Denette Plessala
____ Ms. Mary Amaya	

COMMENTS:

West Bay shellfish map & legal description of areas

NUMBER OF PAGES (including cover sheet): 3

000021

03/25/98 14:15 TEXAS DEPT. HEALTH SHELLFISH 002

CLASSIFICATION OF SHELLFISH HARVESTING AREAS

OF

WEST GALVESTON BAY

TEXAS DEPARTMENT OF HEALTH
SEAFOOD SAFETY DIVISION

DATE: NOVEMBER 1, 1997 ORDER NUMBER: MR-608

The status of shellfish growing waters in Texas estuaries is subject to change by the Texas Department of Health at any time. These changes may be due to high rainfall and runoff, flooding, hurricanes and other extreme weather conditions, major spills, red tides, or the failure or inefficient operation of wastewater treatment facilities. Current status of shellfish harvesting areas may be obtained from your local Texas Parks and Wildlife Department office or by calling, toll-free, 1-800-685-0361.

PROHIBITED AREAS: All areas not specifically designated as Restricted, Conditionally Approved or Approved are classified as Prohibited and are closed for the harvesting of molluscan shellfish.

RESTRICTED AREAS: (closed to the taking of shellfish)

Chocolate Bay northwest of a line from Alligator Point to Intracoastal Waterway Channel Marker #15.

That area east of a line beginning at the northeast side of Greens Lake Cut to West Bay Shellfish Marker #1 in the middle of West Galveston Bay to Hoeckers Point on Galveston Island near Pirates Beach Subdivision.

All of the Intracoastal Waterway, Halls Lake, Cox Lake, Lost Lake, Lake Como, Oak Bayou, Cold Pass, Eckert Bayou, Bolivar Roads, the Lagoon, Salt Lake, Wolf Lake and Nick's Lake, Greens Lake, Caracahua Lake, Sydnor Bayou, Sweetwater Lake, Hance Bayou, Austin Bayou, Tucker Bayou, Dalehite Cove, Lake Como to the entrance at Dana Cove, and Maggies Cove.

That part of Drum Bay lying south of the old Intracoastal Waterway and west of a line from an unnamed point of land north of the San Luis Beach subdivision northward to the spoil of the old Intracoastal Waterway.

All areas within a 50 yard radius of recreational cabins and houseboats located on the bay.

All residential subdivision channels and harbor areas up to a radius of 300 yards offshore from the shoreline where the channels become land bound.

APPROVED AREAS: For current status, contact your local Texas Parks and Wildlife Department office, or call, toll-free, 1-800-685-0361.

The approved area of West Bay is all area inside of a line beginning at the southwest shoreline at the San Luis Pass bridge, following the shoreline to Intracoastal Waterway Channel Marker #15, then along the Intracoastal Waterway to Alligator Point, then following the shoreline to the northeast side of Greens Lake Cut, then to West Bay Shellfish Marker #1, then to Hoeckers Point on Galveston Island, then in a southwesterly direction to a point of land between Dalehite Cove and Dana Cove, continuing in a southwesterly direction along the Galveston Island shoreline (excluding Dana Cove, Butterowe Bayou, Caracahua Cove, Jumbile Cove, Ostermayer Bayou, Bird Island Cove, Maggies Cove, Snake Island Cove), remaining 300 yards offshore from all residential subdivision channels and harbor areas where the channels become land bound, continuing along the shoreline to the northeast end of the San Luis Pass bridge and returning along the bridge pilings to the southwest shoreline of the San Luis Pass bridge.

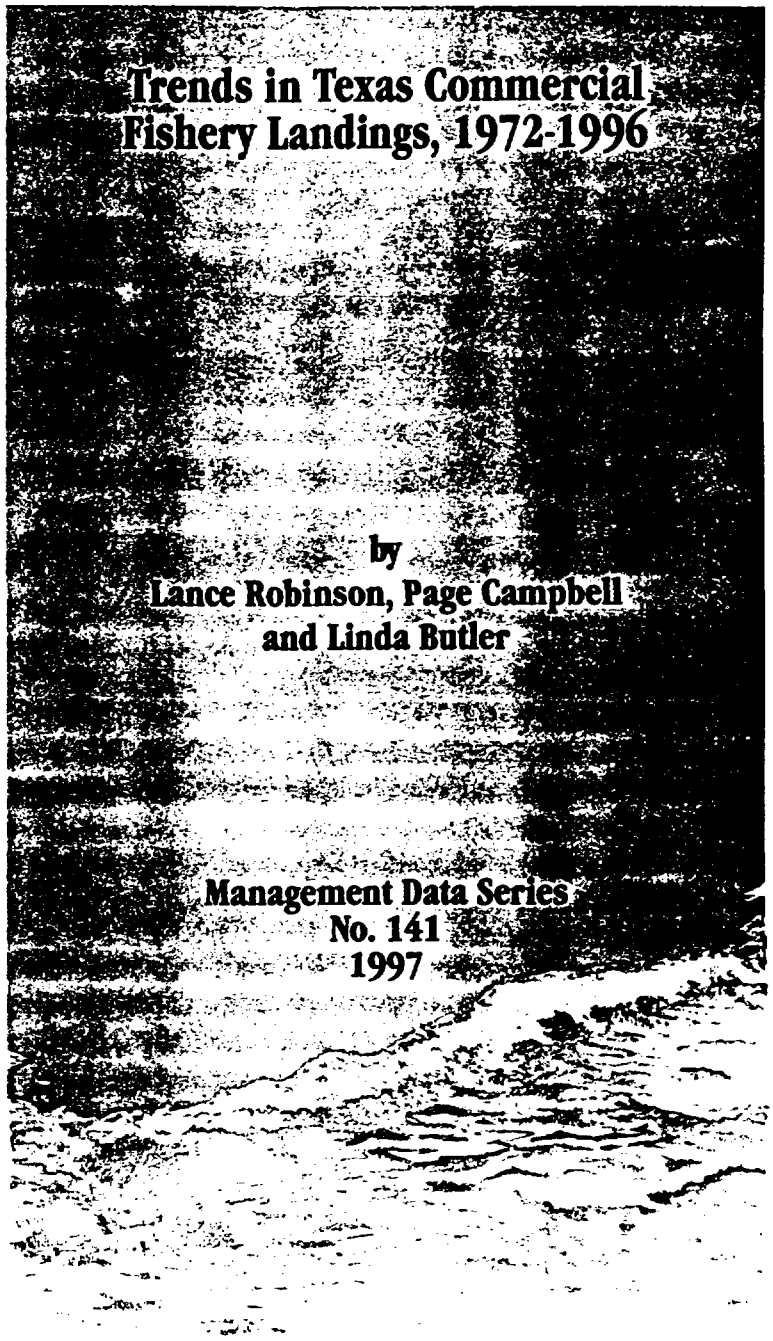
All areas of Christmas Bay and Bastrop Bay southeast of the Intracoastal Waterway are approved.

All of Drum Bay north of a line from an unnamed point of land north of San Luis Beach subdivision northeastward to the spoil of the old Intracoastal Waterway is approved.

Excluded from these areas are the restricted areas around cabins, houseboats, subdivision channels, and harbor areas described above.

APPENDIX L

Trends in Commercial Fishery Landings 1972-1996



TEXAS
PARKS &
WILDLIFE

COASTAL FISHERIES DIVISION

4200 Smith School Road
Austin, Texas 78744

TRENDS IN TEXAS COMMERCIAL FISHERY LANDINGS, 1972-1996

by

Lance Robinson, Page Campbell, and Linda Butler

MANAGEMENT DATA SERIES
No. 141
1997

Texas Parks and Wildlife Department
Coastal Fisheries Division
4200 Smith School Road
Austin, Texas 78744

LIST OF TABLES

Table 1. List of common and scientific names of species caught or landed in Texas 7

Table 2. Summary of commercial fishing seasons in Texas marine waters during 1996 10

Table 3. Texas commercial finfish and shellfish landings (lb x 1000), 1972-1996 11

Table 4. Texas commercial finfish and shellfish ex-vessel value ($ x 1000), 1972-1996 13

Table 5. Weight (lb x 1000) of each species landed commercially from Texas bay systems, 1972-1996 15

Table 6. Ex-vessel value ($ x 1000) of each species landed commercially from Texas bay systems, 1972-1996 17

Table 7. Weight (lb x 1000) of "other" finfish species landed commercially from Texas bay systems, 1972-1996 19

Table 8. Ex-vessel value ($ x 1000) of "other" finfish species landed commercially from Texas bay systems, 1972-1996 21

Table 9. Weight (lb x 1000) of "other" shellfish species landed commercially from Texas bay systems, 1972-1996 23

Table 10. Ex-vessel value ($ x 1000) of "other" shellfish species landed commercially from Texas bay systems, 1972-1996 24

Table 11. Weight (lb x 1000) of each species landed commercially from the Gulf of Mexico, 1972-1996 25

Table 12. Ex-vessel value ($ x 1000) of each species landed commercially from the Gulf of Mexico, 1972-1996 27

Table 13. Weight (lb x 1000) of "other" finfish species landed commercially from the Gulf of Mexico, 1972-1996 29

Table 14. Ex-vessel value ($ x 1000) of "other" finfish species landed commercially from the Gulf of Mexico, 1972-1996 31

Table 15. Weight (lb x 1000) of "other" shellfish species landed commercially from the Gulf of Mexico, 1972-1996 33

Table 16. Ex-vessel value ($ x 1000) of "other" shellfish species landed commercially from the Gulf of Mexico, 1972-1996 34

Table 17. Ex-vessel price ($/lb) of finfish, 1972-1996 35

Table 18. Ex-vessel price ($/lb) of shellfish, 1972-1996 36

LIST OF FIGURES

Figure 1. Texas bay systems and Gulf of Mexico grid zones 37

Figure 2. Monthly Aquatic Products Report (MAPR) form 38

Figure 3. Texas commercial landings (lb) and ex-vessel value ($) for all seafood from bays and the Gulf (grand total), by year for 1972-1996 39

Figure 4. Texas commercial landings (lb) and ex-vessel value ($) of brown and pink shrimp, white shrimp, other shrimp and total shrimp landed for 1972-1996. 40

Figure 5. Texas commercial landings (lb) and ex-vessel value ($) of blue crab, Eastern oyster, other shellfish and total shellfish landed for 1972-1996 41

Figure 6. Texas commercial landings (lb) and ex-vessel value ($) of black drum, flounder, sheepshead, and snapper (all species) landed for 1972-1996 42

Figure 7. Texas commercial landings (lb) and ex-vessel value ($) of total finfish for 1972-1996 43

Figure 8. Percent of total coastwide bay and Gulf landings and ex-vessel value contributed by major commercial species groups for the interval 1991-1996 44

Figure 9. Percent of total landings of brown and pink shrimp, white shrimp, blue crabs, and Eastern oysters contributed by each major bay system for the interval 1991-1996 45

Figure 10. Percent of total finfish landings from bays contributed by each bay system and percent of total finfish landings from the Gulf contributed by each grid zone for the interval 1991-1996 46

LIST OF APPENDICES

Appendix A. Conversion factors used for finfish and shellfish 47

Appendix B. Weight (lb) and ex-vessel value ($), by bay system, of commercial finfish and shellfish landings along the Texas coast during 1972-1996 50

Appendix C. Weight (lb) and ex-vessel value ($), by grid zone, of commercial finfish and shellfish, except shrimp, landings from the Gulf of Mexico off Texas during 1972-1996 87

Appendix D. Monthly commercial finfish and shellfish landings (lb) and ex-vessel value ($), by bay system, for Texas bays during 1996 108

Appendix E. Monthly commercial finfish and shellfish landings (lb) and ex-vessel value ($), by grid zone, for the Gulf of Mexico off Texas during 1996 127

Appendix F. Weight (lb) and ex-vessel value ($) of menhaden caught off Texas but landed commercially in Louisiana during 1977-1996 140

Appendix G. Weight (lb) of Eastern oyster meat transplanted to private oyster leases, and weight and ex-vessel value ($) of reported commercial landings from private oyster leases in Texas bay systems during 1977-1996 142

Appendix H. Number of commercial licenses sold in Texas in each fiscal year (September-August) from 1956-1996 146

Appendix I. Weight (lb) and ex-vessel value ($), coastwide and by bay system, of bait shrimp (live and dead) landed along the Texas coast during 1996 151

Appendix J. Weight (lb) and ex-vessel value ($),coastwide and by grid zone, of bait shrimp (live and dead) landed from the Gulf of Mexico off Texas during 1996 163

ACKNOWLEDGEMENTS

This project was jointly funded by the Texas Parks and Wildlife Department and the U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service under SF-51. Peng Chai provided the programming expertise needed to summarize data in tabular form.

ABSTRACT

This report summarizes annual commercial landings and ex-vessel value statistics of finfish and shellfish harvested from Texas bays and the Gulf of Mexico off Texas. Seafood dealers submitted monthly reports of purchases of shrimp, finfish, crabs, and oysters to either Texas Parks and Wildlife Department or National Marine Fisheries Service. These landings and value data for individual species groups are summarized according to bay system or Gulf area from which the product was taken and by month landed. Total coastwide landings in 1996 were more than 89 million pounds and ex-vessel value was over $182 million.

Shrimp accounted for 78% of the weight and 86% of ex-vessel value of all seafood landed in calendar year 1996. During 1996 blue crabs, Eastern oysters and finfish made up 7%, 6%, and 9% of total landings, respectively, and 2%, 7%, and 5% of the total ex-vessel value, respectively. The average 1996 unit price for brown and pink shrimp and "other" shrimp species remained about the same as the 1995 unit prices. The 1996 average unit prices for white shrimp declined 3% from 1995 values. Blue crab prices in 1996 fell 4% from 1995 but Eastern oyster prices were up 17% from 1995 levels. Although finfish landings comprise only 9% of the total seafood landings they increased 22% over 1995. Black drum contributed 54% of the finfish landings and increased 46% over 1995.

INTRODUCTION

Gulland (1977) emphasized the importance to the fishery manager of knowing the landings of a marine resource. Landings data from both recreational and commercial fishermen are required to assess the needs for and the impacts of saltwater fishing regulations. Economic and sociologic information can also be inferred from landings data to allow for management based on the concept of optimum sustainable yield (Radovich 1975; Demory and Golden 1983; and Prochaska and Cato 1983). Annual recreational fish landings in Texas have been estimated since 1974 based on on-site interviews at fishing access sites (Warren et al. 1994).

Reports of commercial landings of marine species from Texas bays and the Gulf of Mexico (Gulf) off Texas (Figure 1) have been collected from seafood dealers since 1887 (Perret et al. 1980). These early data were collected sporadically until 1936 when annual surveys were initiated (Game, Fish and Oyster Commission 1937). Since 1936, the Texas Parks and Wildlife Department (TPWD) has monitored the landings and value of marine fishes, oysters, crabs and shrimp through a mandatory self-reporting system currently known as the Monthly Aquatic Products Report (MAPR, Figure 2) which is completed by seafood dealers (and bait dealers since September 1991). Since 1956, the National Marine Fisheries Service (NMFS) has collected landings data on shrimp through dealer reports and shrimp vessel crew interviews (Prytherch 1980) while TPWD has continued to collect data on finfish, crabs and oysters. An informal data exchange between agencies permitted the compilation of total self-reported landings of marine species. Beginning 1 April 1985, TPWD and NMFS instituted a formal cooperative agreement to collect and exchange commercial fisheries statistics.

From 1977 through 1981, additional landings information, including daily landings by species, was required of commercial finfish fishermen through Individual Sales Transaction (IST) forms. The use of the IST form was discontinued in March 1982 by the Texas Parks and Wildlife Commission because the data were inaccurate and the reporting system was largely duplicative (Green and Thompson 1981).

This report summarizes the landings and ex-vessel value of seafood purchased from commercial fishermen by seafood dealers and reported to TPWD, and landings and ex-vessel value data collected by NMFS, from 1972 through 1996.

MATERIALS AND METHODS

Licensed seafood dealers were required to complete an MAPR (Table 1) each month, listing the total weight and price paid for each species purchased from commercial fishermen. A MAPR from each dealer, detailing the preceding month's transactions, was due at TPWD's Seabrook Marine Laboratory office on or before the 10th day of each month. The Division of Statistics-Market News, NMFS, collected shrimp and menhaden landings and value data. Shrimp landings reported on MAPR's (except those reported as live and dead bait) were provided to NMFS and landings of shrimp, finfish and other seafood products gathered by NMFS were provided to TPWD. Finfish landings collected by NMFS but not purchased or handled by licensed seafood dealers are not included in this report. Commercial fishermen fishing in 1996 were subject to the fishing seasons listed in Table 2.

All MAPR's were checked for completeness by TPWD personnel. If errors were suspected, the submitting dealer was contacted to verify the accuracy of the data. Except for Eastern oysters (Crassostrea virginica) all seafood products not reported in live weight by dealers were converted to live weight (round weight) using conversion factors listed in Appendix A. Eastern oyster landings were converted to meat weight (Appendix A: Table A.2).

Landings of Eastern oysters from leases were reported by leaseholders through MAPR's, monthly oyster harvest reports submitted to the Seabrook office of TPWD and annual summary forms submitted to the Texas Department of Health, Austin, Texas. In case of discrepancies between monthly and annual summaries, the highest values for landings were used.

Gulf shrimp landed at Texas ports and reported to TPWD by the Division of Statistics-Market News, NMFS, may include shrimp harvested from the waters of other states or from areas outside the territorial waters of the U.S. in addition to those from Texas waters. NMFS reports shrimp landings from statistical grid zones along the entire U.S. Gulf coast, including Texas, in their publication Gulf Coast Shrimp Data. Gulf shrimp landings in this report are pooled for all grid zones off Texas. Unless otherwise noted, the shrimp landings reported do not include live or dead bait.

Any difference in this report compared to previous reports is due to updating of the data base and the most recent report should be considered the most accurate. Except where noted, data are reported by calendar year.

RESULTS

During 1972-96 more than 2.4 billion pounds of seafood products valued at over $4 billion were reported harvested from Texas bays and the Gulf of Mexico, and landed in Texas (Tables 3-16). Total landings fluctuated irregularly during that interval, while ex-vessel value generally increased through 1986 (Figure 3). Long term trends in landings and ex-vessel value of shrimp, crabs, oysters and finfish are presented in Figures 4, 5, 6 and 7.

During 1992-1996, brown shrimp (Penaeus aztecus), pink shrimp (P. duorarum), and white shrimp (P. setiferus), represented approximately 76% of the total coastwide bay and Gulf landings by weight and 88% of total ex-vessel value (Figure 8). Blue crabs (Callinectes sapidus), represented 7% of total landings and 2% of ex-vessel value. Eastern oysters represented 5% of total landings and 4% of ex-vessel value. Finfish collectively represented 6% of total landings and 4% of ex-vessel value. Gulf landings constituted 64% of total landings and 78% of total ex-vessel value.

A comparison of landings among bay systems for 1992 through 1996, indicates that landings from the Galveston Bay system (Figure 9) exceeded all others for white shrimp (43%). The majority of brown and pink shrimp landings (72%) were from the Galveston, Matagorda, and Aransas bay systems. Blue crabs (48%) were landed predominately from Galveston and San Antonio bay systems. Eastern oysters were landed almost exclusively from the Galveston Bay system (91%). The majority of finfish (80%) were landed in the three bay systems along the lower coast of Texas; Corpus Christi, upper Laguna Madre, and lower Laguna Madre (Figure 10). A comparison of the distribution of finfish landings among Gulf grid zones during the same interval indicates that landings were greatest (52%) in grid zone 18 (Figure 10).

During the last five years (1992-1996), mean price per pound paid to commercial fishermen for black drum (Pogonias cromis) and flounder has

generally increased (Table 17). The 1996 mean price per pound for black drum and flounder are the highest reported over the twenty-five year period covered by this report. Black drum landings and ex-vessel value increased 46% and 54%, respectively, compared to 1995. Flounder landings and value decreased 21% and 16%, respectively, in 1996 from 1995. However, 1996 price per pound for flounder increased 6% over the 1995 average (Table 17). Snapper mean price per pound was down slightly in 1996. Prices paid for brown and pink shrimp did not change appreciably from 1995 to 1996. White shrimp price per pound was down 3% from 1995 levels. Although the average price paid for blue crabs fell 4% in 1996, the reported value is still the second highest on record for the years covered in this report (Table 18). Price per pound of Eastern oysters has risen steadily during the last four years rising 17% in 1996 over 1995 levels (Table 18).

Annual summaries of landings and ex-vessel value by bay system and Gulf grid zone are presented in Appendices B and C. Monthly summaries of 1996 landings and ex-vessel values for Texas bay systems and for Gulf grid zones off Texas are presented in Appendices D and E, respectively.

Annual weight and ex-vessel value of menhaden (Brevoortia sp.) caught off Texas but landed commercially in Louisiana during 1977-1996 are presented in Appendix F. During that 20-year period, landings and ex-vessel value of menhaden have fluctuated substantially but a long-term upward or downward trend is not indicated.

The volume of Eastern oysters transplanted annually to private oyster leases in Texas bays, and the weight and ex-vessel value of oysters harvested annually from leases from 1977 to 1996 are presented in Appendix G. The number of leases and total acreage leased have remained relatively constant since 1979, while total weight landed and ex-vessel value have fluctuated widely among years. During 1996, over 1.4 million pounds of meat with an ex-vessel value of over $3.2 million were landed in Texas from oyster leases. These are the highest reported landings since 1986 and the highest reported ex-vessel value reported during the past twenty years.

The number of commercial licenses sold in Texas in each fiscal year (September-August) from 1956 to 1996 are presented in Appendix H. During the last five years (1992-1996), the general trend in the number of retail fish dealer licenses has been up (Appendix H: Table H.1.). During 1996, total retail license sales were up 7% from 1995. The number of wholesale dealer licenses has shown an increasing trend since 1992 with a 20% increase in 1996 over 1995 levels.

Annual and monthly bait shrimp summaries of 1996 landings and ex-vessel value by bay system and Gulf grid zone are presented in Appendices I and J, respectively. Shrimp landings reported as bait and ex-vessel value increased by 40% and 25%, respectively, over 1995 levels. Over 44% of the reported live bait shrimp and 59% of the dead bait shrimp were landed in the Galveston Bay system. This represents approximately 51% and 43%, respectively, of the total ex-vessel value reported for live and dead bait shrimp.

DISCUSSION

About 89.2 million pounds of seafood with an ex-vessel value of $182 million were reported for 1996. Total landings in 1996 were only slightly higher than 1995. Using an approximate expansion factor of three (Grubb 1973), the total economic impact of this industry at the wholesale level in Texas for 1996 was over $548 million. This expansion does not include over 75 million pounds of menhaden worth approximately $3.7 million

(ex-vessel) caught in 1996 off Texas but landed in Louisiana, nor does it include over 1.4 million pounds of bait shrimp (live and dead) worth over $3.0 million caught in Texas.

Historically, the value of the Texas bay fishery has relied on brown and pink shrimp, followed by white shrimp (Table 6). For the first time in the 25-years covered by this report, oysters (31%) represented the single most valuable species landed from Texas bays (Table 6). This increase may be due, in part, to an increase in demand for Texas oysters. The closure in 1996 of waters containing productive oyster beds in Louisiana, Mississippi, and Alabama due to the occurance of toxic plankton resulted in reduced landings from these states (R. Dugas, LA; S. Gordon, MS; M. VanHoese, AL; Personal communication). Following oysters, the value of the bay fishery in 1996 was represented by white shrimp (26%), brown and pink shrimp (21%), blue crabs (11%) and finfish (11%) (Table 6).

Although dealer reports have been used to determine relative commercial seafood landings, several assumptions must be made. In particular, the amount of inaccurate or incomplete reporting is unknown and must be considered constant when making temporal or spatial comparisons. Different reporting requirements can affect the amount of non-reporting, and thus estimates of relative abundance based on reported landings (Green and Thompson 1981). The problem of non-reporting by seafood dealers is seldom considered by fisheries managers when using commercial landings data as the basis for management decisions (Cushing 1970).

Deficiencies in reporting requirements and enforcement also affect the utility of commercial landings data. The 72nd Legislature enacted legislation, effective 1 September 1991, which increased the maximum penalty to $500 and possible license forfeiture for failing to file a required report (Anonymous 1991). Present Texas law, however, does not require all commercial landings to be reported. Unlicensed consumers who purchase seafood products directly from commercial fishermen without the intent to resell the products are exempt from reporting. Non-reporting for this sector may continue to be abnormally high while the program is further developed. Marine products harvested by licensed commercial fishermen and sold directly to a restaurant owner, operator or employee for consumption by the restaurant's patrons on the restaurant's premises are not reportable. Marine products harvested as bait and sold to a licensed bait or seafood dealer were not reportable until September 1991. However, comprehensive implementation of the bait program was not completed until 1994. Increases in reported landings in bait shrimp from 1995 to 1996 may have been due to non-reporting. Reporting compliance has improved, due primarily to increased personal contacts and improved law enforcement. Another deficiency in the present reporting system is that even though the MAPR's provide a section for gear used, reporting compliance is low. This limits the ability to provide estimates of commercial fishing effort by gear type for each species landed. These deficiencies may limit the use of these commercial data for fisheries management purposes.

LITERATURE CITED

Anonymous. 1991. Texas Parks and Wildlife Laws: State of Texas 1991-1992. West Publishing Company, St. Paul, Minnesota.

Chin, Edward. 1960. The bait shrimp fishery of Galveston Bay, Texas. Transactions of the American Fisheries Society, 89(2):135-141.

Christmas, J. Y. and D. J. Etzold, editors. 1977. The shrimp fishery of the Gulf of Mexico United States: a regional management plan. Gulf Coast Research Laboratory, Technical Report Series, Number 2. Ocean Springs, Mississippi.

Cushing, D. H. 1970. Fisheries biology: A study in population dynamics. University of Wisconsin Press, Madison.

Demory, R. L. and J. T. Golden. 1983. Sampling the commercial catch. In: Fisheries Techniques (L.A. Nielsen and D.L. Johnson, eds.). American Fisheries Society, Bethesda, Maryland.

Game, Fish and Oyster Commission. 1937. Annual Report, Fiscal Year 1936-37. Austin, Texas.

Green, A. W. and K. L. Thompson. 1981. Comparison between reported and estimated commercial finfish landings from the central Texas coast. Texas Parks and Wildlife Department, Coastal Fisheries Branch, Management Data Series Number 20. Austin, Texas.

Grubb, H. W. 1973. The structure of the Texas economy. Volume I. Office of the Governor, Austin, Texas.

Gulland, J. A. 1977. The management of marine fisheries. University of Washington Press, Seattle.

Hofstetter, R. P. 1977. Trends in population levels of the American oyster (Crassostrea virginica, Gmelin) on public reefs in Galveston Bay, Texas. Texas Parks and Wildlife Department, Technical Series Number 24. Austin, Texas.

Leary, S. P. 1967. The crabs of Texas. Texas Parks and Wildlife Department, Bulletin Number 43. Austin, Texas.

Perret, W. S., J. E. Weaver, R. O. Williams, P. L. Johansen, T. D. McIlwain, R. D. Raulerson, and W. M. Tatum. 1980. Fishery profiles of red drum and spotted seatrout. Gulf States Marine Fisheries Commission Report Number 6. Ocean Springs, Mississippi.

Prochaska, F. J. and J. C. Cato. 1983. Economic considerations for fishery management. In: Fisheries Techniques (L.A. Nielsen and D.L. Johnson, eds.). American Fisheries Society, Bethesda, Maryland.

Prytherch, H. F. 1980. A directory of fishery data collection activities conducted by the Statistical Surveys Division in the southeast region of the United States. United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Center.

Radovich, J. 1975. Application of optimum sustainable yield theory to marine fisheries. In: P. M. Roedel, editor, Optimum sustainable yield as a concept in fisheries management. Special Publication Number 9, American Fisheries Society, Washington, District of Columbia.

Rathjen, W. F. 1973. Northwest Atlantic squids. Marine Fisheries Review. 35(12):20-26.

Robins, R. C., R. M. Bailey, C. E. Bond, J. R. Brooker, E. A. Lachner, R. N. Lea, and W. B. Scott. 1991. A list of common and scientific names of fishes from the United States and Canada, 5th edition. American Fisheries Society, Special Publication Number 20. Bethesda, Maryland.

Turgeon, D. D., A. E. Bogan, E. V. Coan, W. K. Emerson, W. G. Lyons, W. L. Pratt, C. F. D. Roper, A. Scheltema, F. G. Thompson, and J. D. Williams. 1988. Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks. American Fisheries Society Special Publication 16.

Warren, T. A. L. M. Green, and K. W. Spiller. 1994. Trends in finfish landings of sport-boat anglers in Texas marine waters, May 1974-May 1992. (Management Data Series Number 109) Texas Parks and Wildlife Department, Coastal Fisheries Division, Austin, Texas.

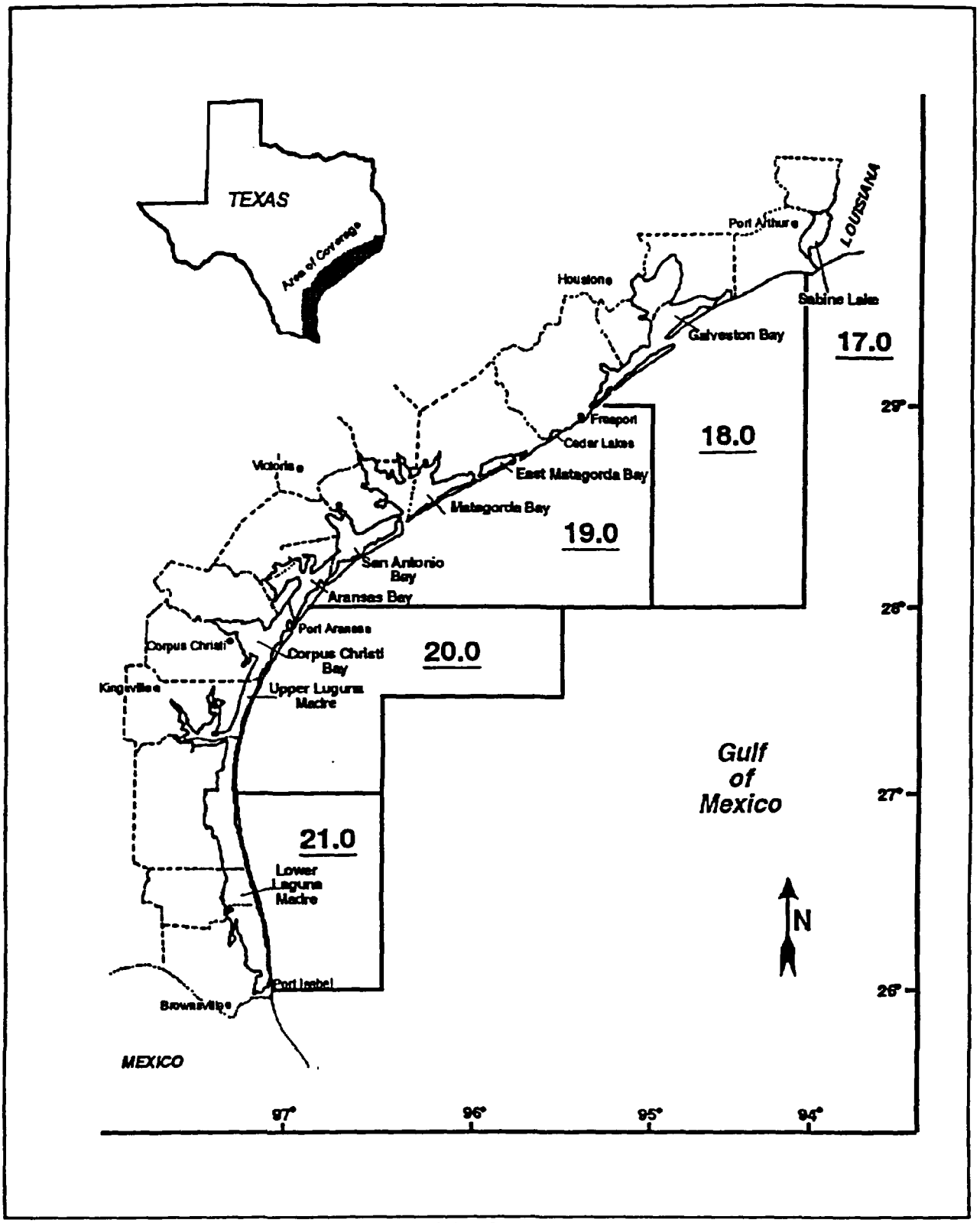


Figure 1. Texas bay systems and Gulf of Mexico grid zones.

Table E.3. Weight (lb) of each species, except shrimp, landed commercially from Gulf of Mexico grid zone 18.0 during 1996.

Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
FINFISH													
Atlantic croaker	1541	311	586	845	0	0	0	0	320	0	0	278	3881
Atlantic spadefish	0	0	0	0	100	0	0	0	22	0	0	0	122
Black drum	0	140	0	0	0	0	0	0	0	421	0	0	561
Blue runner	799	591	370	905	681	775	0	41	2011	758	4090	2756	13777
Bluefish	0	0	0	0	0	0	0	0	529	0	0	0	529
Cobia	884	1234	1326	1416	516	578	864	261	174	14	282	0	7549
Dolphin	0	0	21	0	826	1257	2725	1883	655	35	0	0	7402
Eels, cusk	0	0	0	0	71	0	0	0	0	0	0	0	71
Florida pompano	0	0	0	0	108	0	0	0	0	0	0	0	108
Flounder, unclassified	650	97	429	353	21	923	0	0	0	11	2942	997	6423
Great barracuda	0	23	0	0	416	394	139	87	235	27	430	0	1751
Greater amberjack	1837	1390	4088	9471	3481	23319	43012	17238	25015	1124	5327	1444	136746
Grouper, black	104	66	101	0	0	0	0	0	0	0	0	0	271
Grouper, scamp	155	286	209	165	137	553	0	152	0	0	0	0	1657
Grouper, unclassified	1858	2436	808	1021	627	460	262	464	502	131	4604	0	13173
Grouper, warsaw	107	765	191	156	651	1057	513	153	212	0	0	0	3805
Grouper, yellowedge	1846	0	14	2511	2320	1765	877	35	170	0	0	0	9538
Kingfish, unclassified	0	0	0	0	0	0	0	0	0	0	58	1682	1740
Mackerel, king	0	0	0	0	0	0	91772	57249	0	0	0	0	149021
Mackerel, Spanish	0	0	0	0	0	0	59	0	0	0	0	0	59
Mullet, unclassified	0	0	0	85	0	130	0	210	67	86	22	158	758
Oilfish	218	1311	749	1195	2024	1824	2078	450	1340	450	0	0	11639
Porgy, unclassified	0	0	0	0	3	3	4	0	0	0	0	0	10
Shark, blacktip	28191	0	162	0	0	0	0	0	0	0	0	0	28353
Shark, shortfin mako	62	38	0	0	679	0	0	0	0	0	0	0	779
Shark, unclassified	2629	11131	12087	21748	21409	0	23239	41297	160	0	0	0	133700
Shark, Great hammerhea	0	0	1376	0	54	0	0	0	0	0	0	0	1430
Sheepshead	0	0	243	0	0	0	0	0	0	0	0	0	243
Snapper, lane	0	0	0	0	0	0	0	0	0	0	300	90	390
Snapper, red	483	375843	184973	637	0	0	30	0	274412	73157	30	0	909565
Snapper, silk	41	0	0	0	0	0	0	0	0	0	0	0	41
Snapper, unclassified	1321	2351	4030	205	1	9380	0	0	1522	595	2208	0	21613
Snapper, vermilion	4697	10299	24701	10193	17610	3970	2872	1441	8958	9284	13294	20080	127399
Swordfish	25	1295	339	97	495	459	1137	712	369	0	70	1150	6148
Tilefish	2367	0	0	0	0	652	0	0	0	0	2706	0	5725
Triggerfish, gray	328	1676	1112	756	1791	2835	1031	468	619	114	561	89	11380
Tuna, blackfin	0	839	178	0	0	0	0	20	0	0	0	0	1037
Tuna, bluefin	0	0	1280	1396	4433	383	0	0	0	0	0	0	7492
Tuna, unclassified	0	179	0	1815	10489	169	980	0	0	0	0	164	13796
Tuna, yellowfin	5276	5693	2916	5831	62077	51209	42778	16384	11668	641	575	11563	216611
Tuna, Atlantic bonito	0	0	300	0	0	0	461	94	0	0	0	0	855
Unclassified food	178	0	0	41	330	25	223	149	0	2041	542	832	4361
Unclassified scrap	0	32	9	0	4	0	0	0	0	20	32	0	97
Wahoo	0	267	164	650	414	787	799	796	413	92	0	0	4382
Total finfish	55597	418293	242762	61492	131768	102907	215855	139584	329373	89001	38073	41283	1865988

Table E.3. (Continued).

Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
SHELLFISH													
Crab, blue	0	47	0	0	0	0	0	2443	0	0	0	0	2490
Squid, unclassified	17	102	612	425	487	0	0	59	305	0	0	0	2007
Total shellfish	17	149	612	425	487	0	0	2502	305	0	0	0	4497
Grand Total	55614	418442	243374	61917	132255	102907	215855	142086	329678	89001	38073	41283	1870485

APPENDIX M

Field Audit Report

FIELD AUDIT CHECKLIST

Project No. **25919**

Project Name: ***McGinnis Industrial Maintenance Corporation Site***

Site Investigation Manager: ***Marshall Cedilote***

Auditor: ***Catriona V. Smith***

Dates of Field Audit: ***12/8/97 - 12/12/97***

A: Health and Safety Passed ✔ Failed _____

1. The Site-Specific Health and Safety Plan was prepared by the TNRCC Site Investigation Manager and approved by the TNRCC Program Manager and TNRCC Health and Safety Officer prior to arrival to the site.

Yes ✔ No _____

Comments_____

_____

2. The Site-Specific Health and Safety Plan has been signed by all who intend to enter within the site boundaries prior to entry onto the site.

Yes ✔ No _____

Comments_____

_____

B: Project Organization Adequate ✔ Marginal_____ Failed_____

1. Did the Site Investigation Manager hold a briefing with each participant to go over any concerns or questions for project organization?

Yes ✔ No _____

Comments: **Arriving on site at around 9-10 am meant that sampling often did not start until around 11 am, and sometimes there was not enough time during the day to complete all the tasks assigned.**

2. Did the Site Investigation Manager provide appropriate number and types of material supplies necessary to collect samples (jars, bottles, gloves, pens, coolers, coolant, preservatives, protective gear, Work Plan, Health and Safety Plan, CLP, QAPP or other reference material)?

Yes ✔ No _____

Comments_____

_____

3. Were additional instructions given to each participant not otherwise found in the preliminary written material, such as the Site-Specific Work Plan, Health and Safety Plan, CLP or QAPP?

Not Applicable ✔

Additional Instructions_____

_____

C: Sample Collection Procedures Adequate_____ Marginal ✔ Failed_____

1a. Did the Site Investigation Manager ensure that the sampler collected adequate volumes of sample to allow for the planned sample analyses and field duplicates, plus any laboratory QC blanks and laboratory QC duplicates/spikes, as applicable?

Yes _____ No ✔

Comments: **With several samples, there was not enough sample collected to fill all the sample jars. Sometimes this was due to the compacted nature of the sediments where the sample was collected. When this had occurred, at least one jar for each analysis was filled, and for some samples the cyanide analysis was waived since it was not a major contaminant of concern at this site. Also, several of the VOA sediment samples were shipped with headspace in the jars - sometimes this was unavoidable due to the small amount of sample which was collected. This may cause some of these results to be disqualified during the data validation process.**

1b. Did the Site Investigation Manager provide a supply of the appropriate type of sample containers for the samples collected?

Yes ✔ No _____ No Modifications _____ Modifications _____

Comments_____

_____

2. Were samples collected as stated in the Site-Specific Work Plan (number, frequency, and type)?

Yes _____ No _____ No Modifications _____ Modifications ✔

Sample Modifications: **Day 4 of the SSI (third sampling day) was originally scheduled to be sediment sampling from a boat. However the weather that day did not allow us to use the boat for safety reasons. Therefore the samples were collected on foot and some sample locations (notably background samples) had to be changed to accommodate this change.**

D: Chain of Custody Passed ✔ Failed _____

1a. Did the Site Investigation Manager ensure that the sample tags were properly completed and attached to each sample container?;

Yes ✔ No _____

Comments_____

_____

1b. Did the Site Investigation Manager ensure that the custody seals were properly completed and attached to each sample container in unbroken condition?

Yes ✔ No _____

Comments: **Some samples were shipped without the CLP sample number on the custody seal. The Project Manager was made aware of this by the auditor, but chose to disregard the recommendation. Procedures were corrected later on the advice of the Site Health and Safety Officer.**

1c. Did the Site Investigation Manager ensure that each sample container was labeled with the sample number and protected with clear tape?

Yes ✔ No _____

Comments_____

_____

2. Was each traffic report completed, faxed to EPA, original copy mailed to EPA, and copies corrected as necessary?

Yes ✔ No _____

Comments: **It is essential that the Project Manager checks the traffic reports for accuracy and completeness before the samples are shipped. Traffic reports were checked, but not necessarily by the Project Manager.**

3. Did the traffic report accompany each shipment to the correct EPA contract lab?

Yes ✔ No _____

Comments: **However, sample SE-07 extractables did not arrive at the assigned CLP organic lab. They were wrapped and packed, and noted on the traffic report, but have not yet been recovered.**

E: Field Observations Adequate ✔ Marginal_____ Failed_____

1. Were field observations written in ink and presented accurately in the field logbook, and was each page is signed and dated?

Yes ✔ No _____

Comments_____

_____

2. Were photographs logged in the logbook with the date, time, location, name of person taking the picture, type of sample, sample number, and the photo number?

Yes ✔ No _____

Comments_____

_____

3. Prior to use, did the Site Investigation Manager ensure that the measuring equipment was calibrated to standard procedures as presented in accompanied documents written specifically for the instrument?

Yes _____ No ✔

Comments: **pH meter was not calibrated until it was to be used during the well purging activities. Ground water pump did not work on its first use and had to be fixed before use. Hand held radios were not charged until after the first full sampling day and were used successfully after that. No emergency field phone was available for this SSI.**

4. Have any accountable documents been lost?

Not Applicable ✔

Documents Lost_____

_____

General Comments or Concerns Regarding the Sampling Procedures, Field Observations, Organization, and Site Investigation Management:

Project Manager could benefit from greater delegation of duties and tasks to team members, both before and during the sampling event.

Printed Name of Auditor: CATRIONA V. SMITH

Signature of Auditor Catriona V. Smith Date 12/22/97

APPENDIX N

Field Notes

Tuesday — Decon all sediment sampler tips; take rinsate sample and field blank
Purge ground water wells
Take 12 sediment samples

- SE-01 - Background
- SE-02 - Background
- SE-03 - Background *
- SE-04 - Impoundment 4A *
- SE-05 - Impoundment ~~1 or 2~~ 8
- SE-06 - Impoundment 4
- SE-07 - Impoundment ~~13~~ 10
- SE-08 - In barge canal *
- SE-11 - NPDES outfall *
- SE-12 - NPDES outfall (duplicate of SE-11) *
- SE-13 - Carancahua Lake *
- SE-14 - Carancahua Lake *

Wednesday — Take 7 groundwater samples

- GW-01 - Background * BGW2
- GW-02 - Background BGW3
- GW-03 - Background BGW4
- GW-04 - Well W-1 *
- GW-05 - Well W-1 (duplicate of GW-04) *
- GW-06 - Well W-5 3
- GW-07 - Well W-23 2

Thursday — Take 11 sediment samples

- SE-09 - Adjacent to barge canal
- SE-10 - Adjacent to barge canal (duplicate of SE-09)
- SE-15 - Caracahua Bayou
- SE-16 - Southwest edge of MIMC property
- SE-17 - Greens Lake
- SE-18 - Jones Bay
- SE-19 - West Galveston Bay
- SE-20 - Hall's Lake
- SE-21 - Hall's Bayou
- SE-22 - Chocolate Bay
- SE-23 - Chocolate Bayou

Decon all sediment sampler tips; take rinsate sample and field blank

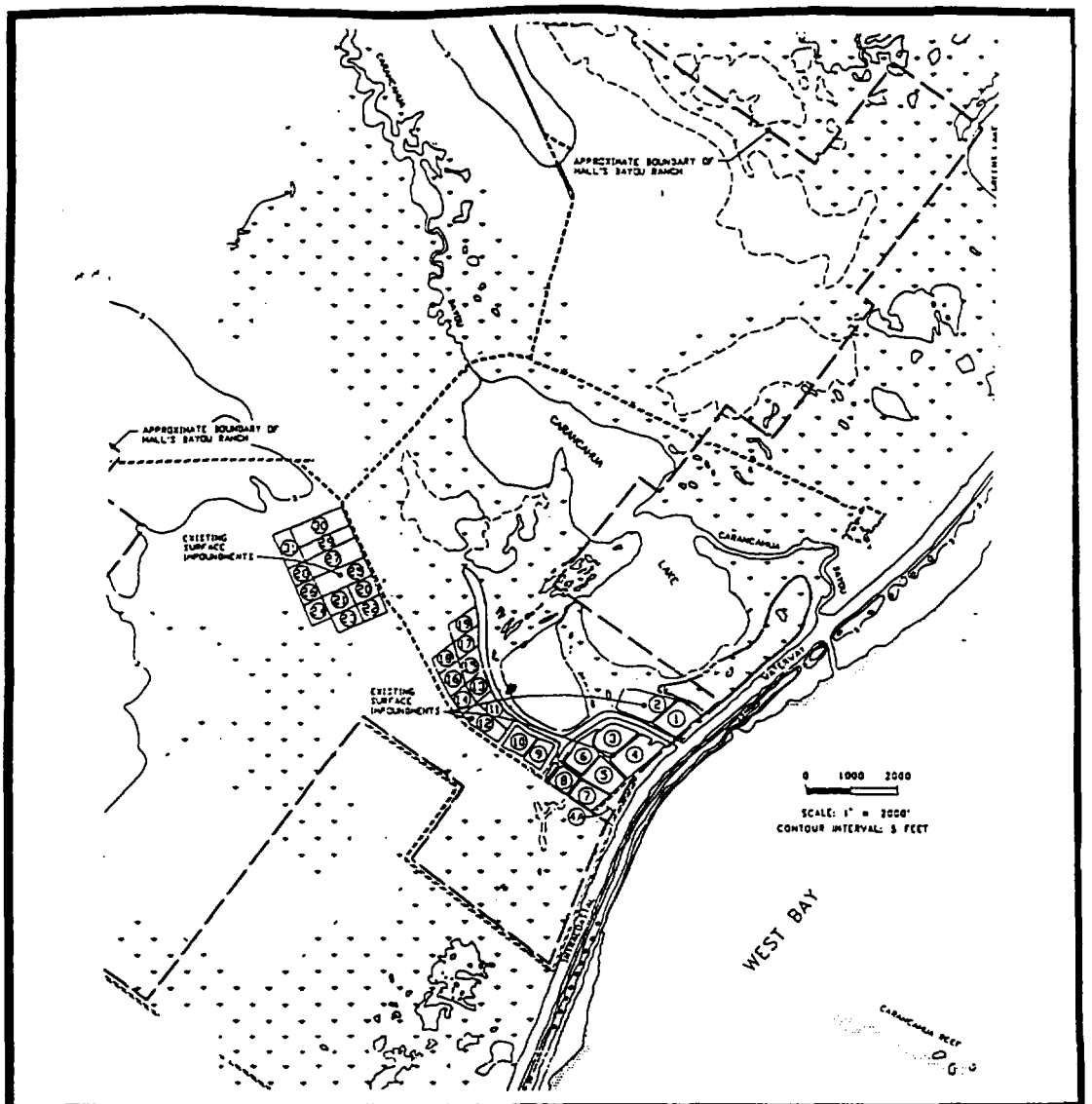
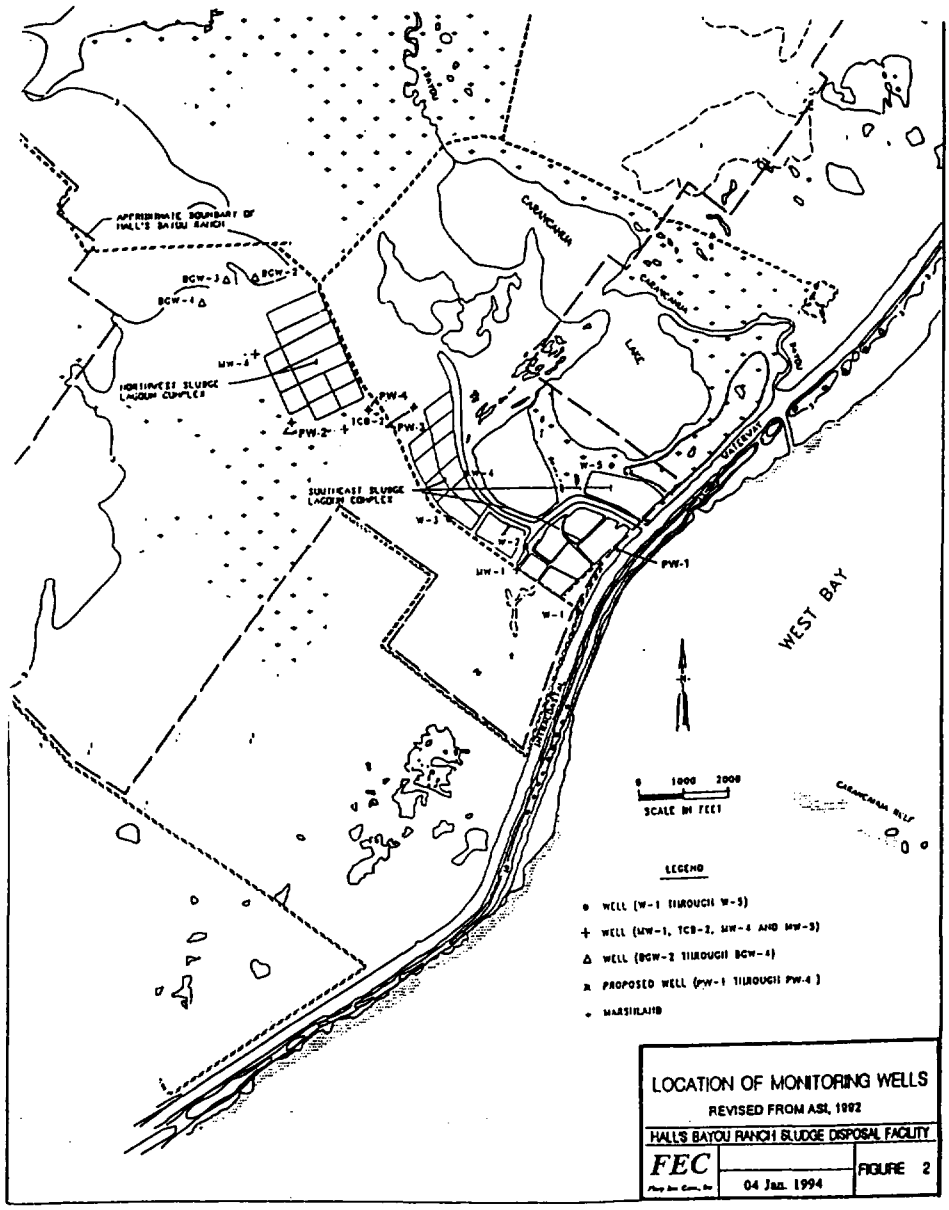


FIGURE 2: Surface Impoundment Layout and Numbering Convention
McGinnes Industrial Maintenance Corporation
CERCLIS # TXD980697031

Near Hitchcock, Galveston County, Texas


APPROXIMATE BOUNDARY OF HALL'S BAYOU RANCH
BGW-3
BGW-2
BGW-4
MW-3
NORTHWEST SLUDGE LAGOON COMPLEX
PW-4
TCB-2
PW-2
PW-3
SOUTHEAST SLUDGE LAGOON COMPLEX
W-4
W-5
W-3
W-2
MW-1
W-1
PW-1
CARANCAHUA
LAKE
CARANCAHUA
WATERWAY
WEST BAY
N
0 1000 2000
SCALE IN FEET
CARANCAHUA REEF
LEGEND
WELL (W-1 THROUGH W-5)
WELL (MW-1, TCB-2, MW-4 AND MW-3)
WELL (BGW-2 THROUGH BGW-4)
PROPOSED WELL (PW-1 THROUGH PW-4)
MARSHLAND
LOCATION OF MONITORING WELLS
REVISED FROM ASI, 1992
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY
FEC
04 Jan. 1994
FIGURE 2

12/9/97

Arrived at boat ramp @ 8:30 am to begin decon

Wes & Johnny left to return hose for another size

Cat and Stephanie doing decon

FB-1 9:00 AM - Stephanie Pogue

ER-1 9:05 AM - Stephanie Pogue

Conditions - Sunny, breezy, slight fog ~ 65° F

Wes Newberry conducted safety Meeting

Loaded equipment onto R-12 boat - Ralph Calvino

Jone's Bay first - very Shallow

RoverFile R120916B

Sample SE-18 by M. Cedilote at 10:32 AM

Sunny, breezy, light fog, SW wind, clear water ~70°F

Green's Lake

Rover File R120917A

SE-17 by M. Cedilote at 11:13 AM

Partly cloudy, breezy, SW wind, clear water ~70°F

SE-15 - Carancahua Bayou

Rover File R120917B

SE-15 by M. Cedilote at 11:26 AM

Mostly cloudy, breezy, SW wind, clear water ~70°F

SE-19 West Galveston Bay

Rover File R120917C

SE-19 by M. Cedilote 11:48 am

Mostly cloudy, light breeze, clear water ~70°F

12/9/97
S. Pogue

12/9/97

SE-23 Chocolate Bayou
Rover File R120918A
SE-23 by 12:44 pm Marshall Cedilote
Mostly Cloudy, breezy out of SW, water turbid

SE-22 Chocolate Bay
Rover File R120918B
SE-22 by M. Cedilote 1:03 pm
Mostly cloudy, slight breeze SW ~70° F

SE-16 Southwest edge of MIMC property
Rover File R120919A
SE-16 by M. Cedilote 1:43 pm
Mostly cloudy, slight breeze SW ~72° F

SE-09 Adjacent to barge canal
Rover File R120919B
SE-09 by M. Cedilote 1:59 pm
Mostly cloudy, breezy SW, ~72° F

SE-10 Adjacent to barge canal (duplicate of SE-09)
Rover File: same as SE-09
SE-10 by M. Cedilote 2:01 pm
Mostly cloudy, breezy SW, ~72° F

Returned to site at 3:00 PM
Began to process samples
Left site at 5:00 pm
Will purge 3 monitor wells on wed

Marshall Cedilote
12/9/97

12/10/97

Arrived at site 8:30 AM

Began to bag ice

Johnny & Wes working on pump

McGinnes representatives arrived at site 9:15

Drove back to site

Wes Newberry conducted safety meeting

Wes & Johnny to do decon on pump

ER-3 will be the decon at the pump

VOA FFR6S

VOA FFR6S Time 10:20

EXT FFR6S Mostly sunny, windy, ~ 50°F

TOT MFHL93

CYN MFHL93

ER-3 preserved by Johnny Kennedy

GW-01 sampled @ 11:25 am by M. Cedilote
(duplicate) (BGW-2)

GW-02 sampled @ 1200 by M. Cedilote
(BGW-3)

GW-03 Sampled @ ~~12:45~~ ap 12:45 pm by M. Cedilote
(BGW-4) triple volume

GW-06 sampled @ 3:12 pm by M. Cedilote
(well 3)

GW-07 Sampled @ 3:37 pm by M. Cedilote
(well 2)

~~Stephanie~~ Pogue
12/10/97

12/10/97

FB-2 at 3:57 PM by M. Cedilote

GW-04 Collected at 16:05 } Samples Collected
GW-05 Collected at 16:07 } by Wes Newberry

ER4 will be decon of pump at end of Wed

VOA	FFR4X	6-162350	
VOA	4X	6-162351	
EXT	4X	6-162352	Taken by W. Newberry @ 1655
TOT	MFHL76	6-162353	
CYN	MFHL76	6-162354	

12/11/97

Arrived at site 9:15

Johnny; Stephanie arrived 9:30

Bagged ice

Wes conducted safety meeting

McGinnes reps arrived @ 10:00 am

SE-4 Location

W. Newberry Sampler

Mostly cloudy, windy from N, ~50°F Composite

Rover File R121116A

10:50 AM

SE-6 Location

W. Newberry-Sampler

Mostly cloudy, windy from N ~50°F

Roverfile R121117A

11:15 AM

SE-5 Location

W. Newberry Sampler

Mostly cloudy, windy from N ~50°F Composite

Rover File R121117C

11:30 AM

SE-7 Location

W. Newberry - Sampler

Mostly cloudy, windy from N ~50°F

Rover File R121117D

11:45 AM

SE-11 SE-12 Location

MAC 12/11/97 ~~S. Pogue~~ - Sampler & W. Newberry

Mostly cloudy, windy from N ~ 45°F

Roller File R121118 A

SE-11 12:15

SE-12 12:20

SE-8 sample Location

Sampler - S. Pogue

Mostly cloudy, windy from N ~ 45°F

Roller File R121118 B

12:35 PM

SE-13 Sample Location

Sampler - S. Pogue

Mostly cloudy, windy from N ~ 45°F

13:15

SE-14 Sample Location

Sampler - S. Pogue

Mostly cloudy, windy from N ~ 45°F

13:30

SE-01 Sample location

Sampler S. Pogue

Overcast, windy from N, ~ 45°F

1600

MAC 12/11/97 ~~SE-02~~ SE-03 Sample Location

S. Pogue - Sampler

Overcast, windy From N ~ 40°F

1620

FR-02

MAC 12/11/97 ~~to Newberry~~-Samples M. Cedilote

~~1850~~ 1750

MAC 12/11/97

FB-03

MAC 12/11/97 ~~to Newberry~~-Sampler M. Cedilote

~~1855~~ 1755

MAC 12/11/97

Called samples in to Dyncorp @ 6:45PM Left messages

PHOTOS
Roll 1

#	Subject	Direction	Photog
1	Decon sampler tips	N	Cedilote
2	ER-1 Ext. sample	WNW	Smith
3	ER-1 TMetals sample	WNW	Smith
4	SE-18 Jones Bay	SE SW	Pogue
5	SE-17 Greens Lake	SW	Pogue
6	SE-15 Caracahua Bayou	SW	Pogue
7	SE-19 West Galveston Bay	SW	Pogue
8	SE-23 Chocolate Bayou	SW	Pogue
9	SE-22 Chocolate Bay	SW	Pogue
10	SE-16 Southwest edge of MIMC property	SW	Pogue
11	SE-09 Adjacent to barge canal	SW	Pogue
12	Decon of pump	S	Cedilote
13	Taking pump decon SXS ER-3 Vcks	S	Smith
14	GW-01 Bkgd (BGW well 2)	N	Smith
15	GW-02 Bkgd (BGW3 well)	N	Smith
16	GW-03 Bkgd (BGW4 well)	N	Pogue
17	GW-06 (Well 3)	E	Jon Floy · MIMC
18	GW-07 (Well 2)	SE	Jon Floy
19	GW-04 + GW-05 (Well 1)	SW	KENNEDY
20	SE-01	S	M. Cedilote
21	SE-01	N	M Cedilote
22	SE-05	S	M. Cedilote
23	SE-07	E	M. Cedilote
24	SE-11, SE-12	S	M. Cedilote

Roll 2

#	Subject	Direction	Photographer
1	SE-8 Location	S	M. Cedolote
2	SE-13	W	M. Cedolote
3	SE-14	W	M Cedolote
4	SE-01	S	M. Cedolote
5	SE-02	S	M Cedolote
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Tuesday — Decon all sediment sampler tips; take rinsate sample and field blank
Purge ground water wells
Take 12 sediment samples

- SE-01 - Background
- SE-02 - Background
- SE-03 - Background *
- SE-04 - Impoundment 4A *
- SE-05 - Impoundment 1 or 2
- SE-06 - Impoundment 4
- SE-07 - Impoundment 13
- SE-08 - In barge canal *
- SE-11 - NPDES outfall *
- SE-12 - NPDES outfall (duplicate of SE-11) *
- SE-13 - Carancahua Lake *
- SE-14 - Carancahua Lake *

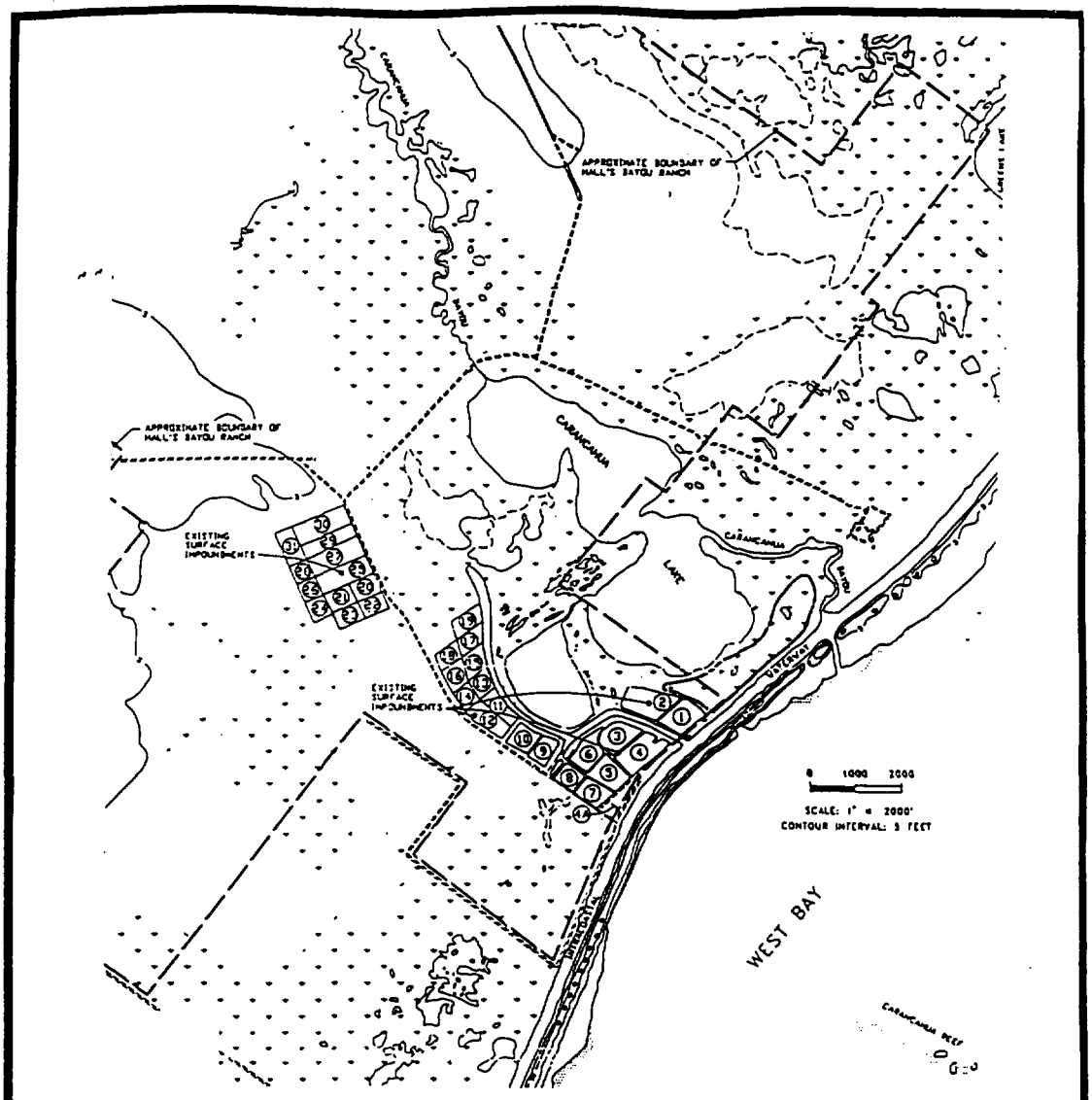
Wednesday — Take 7 groundwater samples

- GW-01 - Background *
- GW-02 - Background
- GW-03 - Background
- GW-04 - Well W-1 *
- GW-05 - Well W-1 (duplicate of GW-04) *
- GW-06 - Well W-5
- GW-07 - Well W-2

Thursday — Take 11 sediment samples

- SE-09 - Adjacent to barge canal
- SE-10 - Adjacent to barge canal (duplicate of SE-09)
- SE-15 - Caracahua Bayou
- SE-16 - Southwest edge of MIMC property
- SE-17 - Greens Lake
- SE-18 - Jones Bay
- SE-19 - West Galveston Bay
- SE-20 - Hall's Lake
- SE-21 - Hall's Bayou
- SE-22 - Chocolate Bay
- SE-23 - Chocolate Bayou

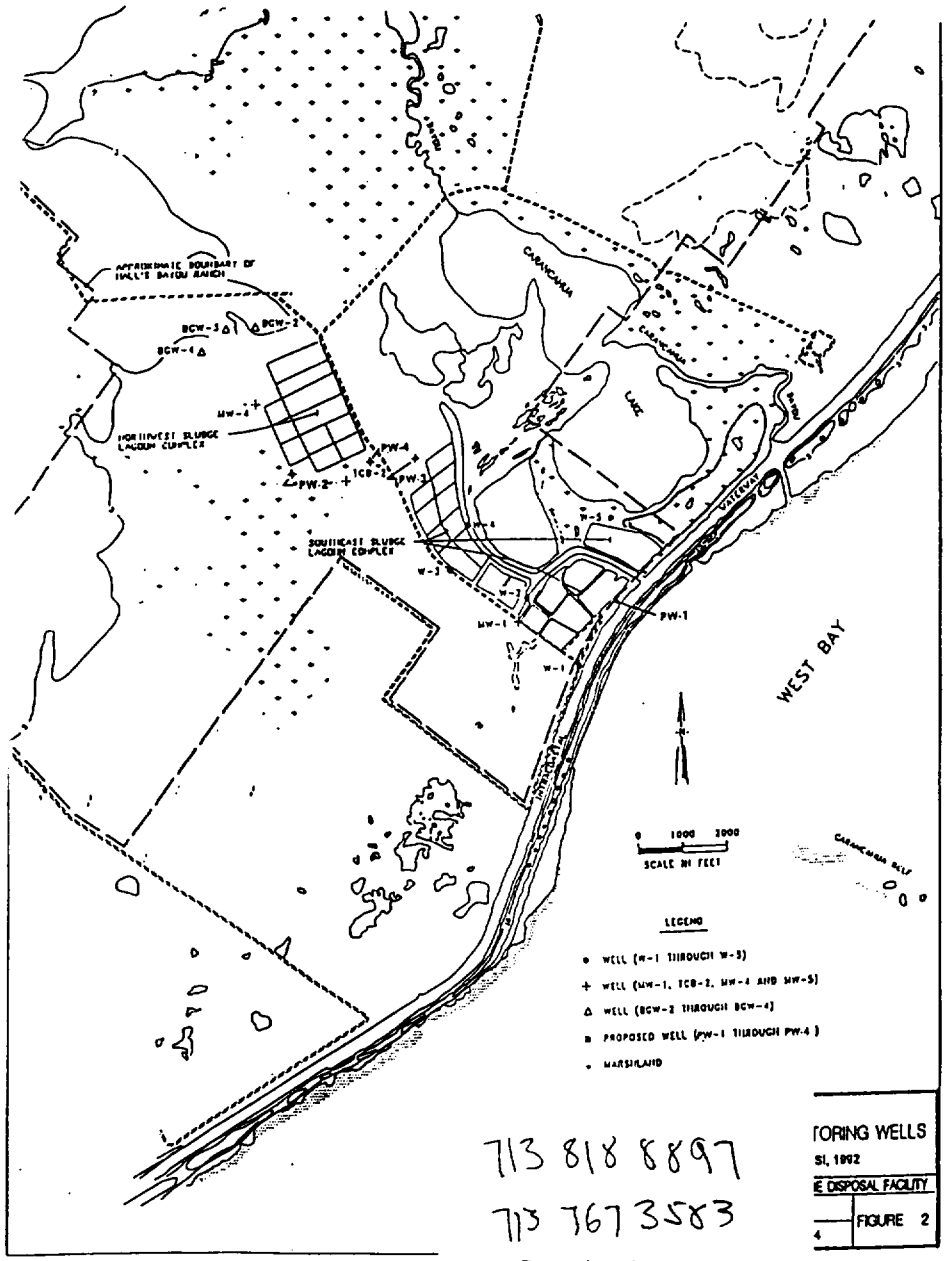
Decon all sediment sampler tips; take rinsate sample and field blank



TNRCC

FIGURE 2: Surface Impoundment Layout and Numbering Convention
McGinnes Industrial Maintenance Corporation
CERCLIS # TXD980697031

Near Hitchcock, Galveston County, Texas



713 818 8897

713 767 3583

Ralph

12-9-97

pH meter calibrated
11:15 am
2 pt. cal. standards 7 pH
4 pH

11.45am BGW-3 5.48 feet to top of water
20.1 feet deep.
2" diameter

πr^2 (.163)
3.14
.163
732
18840
31400
5.1172

0.5 gall/ft
× 14.62
⇓
7.31 gall one vol. × 3 = 22 gall.
~~1 gallon = 3 vol.~~
ans.

11.55 BGW-2 3.93' to top of water
2" ϕ 29.7' deep.

πr^2 (0.163) $3.14 \times 1^2 \times 0.163$
0.5 gall/ft
× 25.77
⇓
12.88 gall/one vol
×3 38.64 gall/3 vols

12/9/97

ans 12/9/97

12-9-97 BGMW 3 1st pH 6.60 12.12 pm
temp 23.6 °C
cond. 31.4 rel mV

2nd pH 6.7 12.30 pm
temp 23.6 °C
cond. 27.8 rel mV
27.9 mV

3rd pH 6.7 12.40
temp 23.3 °C
cond. 27.6 rel mV
27.6 mV

4th pH 6.70 12.45
temp 23.3
cond. 27.0 rel. mV.
26.9 mV

purged ≈ 28 gall finished ≈1245
started 1155

Catriona V. Smith 12/9/97

12/9/97 BGW ~~2~~ 4 (NS.)

	①	②	③	④
pH	6.72	6.68	6.68	6.7
temp	23.5°C	23.1	23.0	23.2
(rel. mV) cond.	26.5	28.3	28.4	26.8
time →	1255	~~0100~~ 1300	~~0105~~ 1305	~~0112~~ 1312
@	29 gall	32 gal	35 gall	39 gall

40 gall total. 1315 finished.
1205 started

BGW 2

depth to water 5.04'
depth of well 23.0

18' column height × factor ⇒ 9 × 3 ⇒ 27 gall
~~8 0.5~~

started 1308

	①	②	③	④	⑤
pH	6.36	6.47	6.55	6.57	6.57
temp	23.3°C	23.0°C	23.1	23.0	23.2
rel mV cond	46.2	39.8	35.7	34.5	34.8
time	1340	1347	1400	1405	1407
@ gall	15	20	25	27	30

Catrine V. Smith 12/9/97

12/9/97 Well 3 4" ϕ $\pi r^2 (0.163)$

$3.14 \times 2^2 \times 0.163$

3.14
× 4
12.56
× 0.163
3768
75360
125600
2.04728

depth to water 3.15'
depth of well 26.94'

26.94
3.15
23.79

23.8 × 2 ⇒ 47.6 gall
× 3
142.8 - 3 vols

purge started @ 1532
could not get pump working - set up was OK, but pump kept overloading & heating up.

12/9/97

Catriona V. Smith 12/9/97

12/10/97

MW-3

10:40 Depth to Water 3.13'

Note: THIS Depth Was taken at the top of the Casing. THE Cap and Collar were not attached to the top of the Casing

Total depth from 12/9/97 26.94

26.94
3.13
23.81

23.81
2
47.62 = 1 Well Volume

47.62
3
142.86

11:00 START Purging Well MW#3
Measurement 5 gallons in 2 minutes
@ 121 Hz.
Total Purge time 56 minutes

11:12 Calibrate pH meter @ 4 and 7 pH

11:20 1st pH @ approximately 1 Well Volume
Temp 21.3
pH 6.13
Rel mV 63.5

11:40 2nd pH @ approximately 2 well volume
Temp 21.3
pH ~~6.04~~ 6.40
Rel mV 48.5

12/10/97

MW-3

12/10/97

11:50 3rd Parameter Reading
Temp 20.6
pH 6.54
Rel mV 41.7

4th Parameter Reading @ 3 Volumes
11:56 21.0 Temp
6.54 pH
42.5 Rel mV

12:00 5th Parameter Reading
Temp 21.5
pH 6.53
Rel mV 43.4

12:03 6th Parameter Reading
Temp 21.2
pH 6.55
Rel mV 41.9

12:04 Stop Purging MW-3

12/10/97

12-10-97 MW-2 14:0

E-Line top of casing to H_2O 2.30 ft
total Depth 26.72 ft
Height of Col = 24.42 ft

14:1E

$$\begin{array}{r} 24.42 \\ \times \quad 2 \\ \hline 48.84 \\ \times \quad 3 \\ \hline 146.52 \end{array}$$

14:1

Start purging 13:38
5 gal = 45 sec

$$\begin{array}{r} 25.3 \\ 45 \\ \hline 1265 \\ 1012 \\ \hline 1138.5 \end{array} \qquad \begin{array}{r} 18.9 \\ 60\overline{)1138.5} \\ 60 \\ \hline 538 \\ 480 \\ \hline 585 \end{array}$$

4 min 45 sec
@ 290 Hz
~ 46 gals

14:

14:

178 Hz = 5 gal = 1 min 40 sec
1.6 m = 5 gal × 20 = 32 min

15:0

14:00 Collect 1st parameter Reading @ 2 Well Volumes
Temp 22.4
pH 6.79
Rel mV 29.0

John Dennedy 12/10/97

14:08 2nd Parameter Reading @ 2½ Well Volume
Temp 23.2
pH 6.78
Rel mV 29.1

14:16 3rd Parameter Reading @ 3 Well Volumes
Temp 23.0
pH 6.82
Rel mV 27.0

14:18 4th Parameter Reading
Temp 22.9
pH 6.82
Rel mV 27.0

14:19 Stop Purging

14:25 E-Line - 8.24 ft to bottom water

MW-1

15:05 Eline MW-1 4.00'
Total Depth 22.28

22.28
4.00
18.28
.85
9140
146240
155380

18.28
2
36.56 x 3
3
109.68

22.28
15.54
6.74

John Clements
12/10/97

12/10/97

15:20 Begin Purging MW-1
15% Hz
1 Minute 30 Second per 5 gallons

1.5 x 22 = 33 Minutes
1 Volume = 11 minutes

13:31 1st Parameter Sample @ 1 Volume
Temp 22.3
PH 7.06
Rel mV 13.0

13:42 2nd well Vol sample
Temp 21.8
pH 7.08
Rel mV 11.9

15:54 3rd Parameter Reading.
Temp 22.4
PH 7.04
Rel mV 14.1

15:57 4th Parameter Reading
Temp 23.0
PH 7.04
Rel mV 13.9

16.00 5th Parameter Reading
Temp 23.2
PH 7.05
Rel mV 13.6

16:01 Stop Purging

12/10/97

APPENDIX O

Sample Designation Group MFGQ96

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 11-18-1997

Subject: Contract Laboratory Program Data Review

From: Melvin L. Ritter, ESAT RPO, 6MD-HC

To: B. Canellas , 6SF-LT

Site: TX AIRCRAFT & ENGINE
Case#: 25725
SDG#: MFG-Q96

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

(X) Acceptable: No major problems with data package.

( ) Provisional: Data is acceptable for Regional use. Problems are noted in the review report.

( ) Unacceptable: Some or all of data should not be used. Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2146.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator
Files (2)

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: November 14, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom Chiang, ESAT Team Manager, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-8021A, ESAT File No. I2147
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case #25725
SDG #MFGO96
Site TX AIRCRAFT & ENGINE

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

The laboratory was contractually compliant as noted by hard copy review. The CCS report was not available at the time of this report preparation.

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 48 results were reviewed for this data package. The package is technically acceptable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25725 SITE TX AIRCRAFT & ENGINE
LABORATORY CHEM NO. OF SAMPLES 2
CONTRACT # 68-D5-0166 MATRIX water
SDG # MFGO96 REVIEWER (IF NOT ESD) ESAT
SOW# ILM04.0 REVIEWER'S NAME Linda Hoffman
ACCT # 8FAXJN05 SF # FAXUZZ COMPLETION DATE November 14, 1997

SAMPLE NO.:					
	MFG-Q96				
	MFG-Q97				

DATA ASSESSMENT SUMMARY

	ICP	HG	CYANIDE
1. HOLDING TIMES	O	O	O
2. CALIBRATIONS	O	O	O
3. BLANKS	O	O	O
4. MATRIX SPIKES	O	O	O
5. DUPLICATE ANALYSIS	O	O	O
6. ICP QC	O		
7. FAA QC			
8. LCS	O	N/A	O
9. SAMPLE VERIFICATION	O	O	O
10. OTHER QC	N/A	N/A	N/A
11. OVERALL ASSESSMENT	O	O	O

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
N/A = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN:

NOTABLE PERFORMANCE:

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25725 SDG MFGQ96 Site TX AIRCRAFT & ENGINE Lab CHEM

COMMENTS: The package consisted of data for two water samples for total metals and cyanide analyses by ILM04.0. The sampler designated sample MFGQ96 as a field blank sample and as the QC sample and sample MFGQ97 as a rinsate. The laboratory met the 35-day turnaround time requirement. All the reported results were below the CRDL's.

The data package is technically acceptable. The technical usability of all reported results is indicated in the Data Summary Table.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is included as part of this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. Contractual and technical holding times and sample preservation criteria were met.

2. **Calibrations:** Acceptable. All calibrations met contractual requirements. The CRDL standard results indicated that instrument performance near the CRDL's was acceptable.

3. **Blanks:** Acceptable. Preparation and calibration blanks met contractual requirements although the laboratory reported 11 analytes in the blanks. Only results below the CRDL's were affected by blank concentrations.

   Field Blank: The laboratory reported aluminum, calcium, magnesium, and sodium concentrations below the CRDL's in the field blank sample. However, the aluminum, calcium, and magnesium concentrations are considered undetected because of calibration blank concentrations of these three analytes.

   Rinsate: The laboratory reported calcium, copper, manganese, silver, sodium, and zinc concentrations below the CRDL's in the rinsate sample. However, the calcium, silver, and zinc concentrations are considered undetected because of calibration blank concentrations of these same analytes.

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Acceptable. The laboratory reported matrix spike recoveries that were within the QC limits.

5. **Duplicate Analysis:** Acceptable. The laboratory reported acceptable duplicate differences.

6. ICP Quality Control:

   Serial Dilution: Acceptable. The serial dilution differences met QC criteria.

   Interference Check Sample: Acceptable. Acceptable ICS results indicated satisfactory interelement and background correction.

   Coefficient of Variation: Acceptable. Replicate ICP readings were consistent.

7. **Furnace Atomic Absorption Quality Control:** Not Applicable.

8. **Laboratory Control Sample:** Acceptable. Acceptable LCS results indicated satisfactory sample preparation and analysis.

9. **Sample Verification:** The reviewer detected a few errors and contacted the laboratory for resubmission (see FAX Record Log).

10. **Other QC:** Not Applicable.

11. **Overall Assessment:** The data package is technically acceptable.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

U	Undetected at the laboratory reported detection limit (IDL).
L	Reported concentration is between the IDL and the CRDL.
J	Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.
R	Result is unusable.
F	A possibility of a false negative exists.
UC	Reported concentration should be used as a raised detection limit because of apparent blank contamination.
^	High bias. Actual concentration may be lower than the concentration reported.
v	Low bias. Actual concentration may be higher than the concentration reported.

d

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25725

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	10/2/97	Airborne Express

Regional Information

Sampler (Name): Judie Mattocks

Airbill Number: 4822863780

Non-Superfund Program

Sampler Signature: Judie Mattocks

Site Name: Texas Aircraft

City, State: Ft. Worth, TX

Site Spill ID:

3. Purpose*

Lead	Early Action	Long-Term Action
[X] SF	[ ] CLEM	[ ] FS
[ ] PRP	[ ] PA	[ ] RD
[ ] ST	[ ] REM	[ ] RA
[ ] FED	[ ] RI	[ ] O&M
	[X] SI	[ ] NPLD
	[ ] ESI	

5. Ship To:
Chemtech
110 Route 4
Englewood NJ 07631
ATTN: Bobby Morovati

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., --- = Not a QC Sample)
MFGQ96	4	low	grab	2,3		X	X					6-061370 - 371	ER-01	10/2/97 1030	FEY35	JM	B
~~MFGQ96~~	~~4~~	~~low~~															
MFGQ97	4	low	grab	2,3		X	X					6-061375 - 376	ER-02	10/2/97 1400	FEY36	JM	R

Shipment for Case Complete? (Y/N): Y

Page: 1 of 1

Sample(s) to be Used for Laboratory QC: MFGQ96

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Judie Mattocks	10/2/97 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-5 REV 3/93

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

259726

DATA SUMMARY

Case No.: 25725 SDG. No.: MFGQ96 Reviewer: L. Hoffman

Laboratory: CHEM Matrix: WATER Units: ug/L

EPA TR #=>	MFG-Q96	FLAG	MFG-Q97	FLAG	FLAG	FLAG	FLAG	COMMENTS
ALUMINUM	24.5	LUC	6.0 U					
ANTIMONY	4.0	U	4.0 U					
ARSENIC	6.0	U	6.0 U					
BARIUM	1.0	U	1.0 U					
BERYLLIUM	1.0	U	1.0 U					
CADMIUM	1.0	U	1.0 U					
CALCIUM	41.8	LUC	32.4 LUC					
CHROMIUM	1.0	U	1.0 U					
COBALT	2.0	U	2.0 U					
COPPER	1.0	U	1.1 LJv					
IRON	17.0	U	17.0 U					
LEAD	3.0	U	3.0 U					
MAGNESIUM	29.6	LUC	13.0 U					
MANGANESE	1.0	U	1.9 L					
MERCURY	0.20	U	0.20 U					
NICKEL	1.0	U	1.0 U					
POTASSIUM	18.0	U	18.0 U					
SELENIUM	3.0	U	3.0 U					
SILVER	1.0	U	1.1 LUC					
SODIUM	130	L	155 L					
THALLIUM	6.0	U	6.0 U					
VANADIUM	1.0	U	1.0 U					
ZINC	2.0	U	4.9 LUC					
CYANIDE	8.0	U	8.0 U					

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25725 SDG No. MFGQ96 SDG Nos. To Follow _____ SAS No. _____ Date Rec 11/07/97

EPA Lab ID: CHEM

Lab Location: Englewood, NJ

Region: 6 Audit No.: 25725/MFGQ96

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Over for additional comments.

Audited by: _____ Linda Hoffman /ESAT Data Reviewer Date 11/13/97

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

In Reference to
Case 25725/SDG MFG096
Page 1 of 1 page
ESAT File No.: I2147

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: November 14, 1997

Laboratory Name: CHEM

Lab Contact: Divya Mehta

Region: 6

Regional Contact: Linda Hoffman (ESAT)

FAX Initiated by: Region

In reference to data for the following sample number(s):

All samples in this SDG.

Summary of Questions/Issues:

An SDG narrative was not submitted with the data package where the contractually required cooler temperature must be recorded (ILM04.0, Exhibit A, Task I, A-6, last paragraph of 5). Please note for the future. No resubmission is expected.

Signature

11/14/97
Date

Distribution: (1) Lab Copy, (2) Region Copy

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFGQ96

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-D5-0166

Lab Code: CHEM Case No.: 25725 SAS No.: SDG No.: MFGQ96

Matrix (soil/water): WATER Lab Sample ID: 29694S

Level (low/med): LOW Date Received: 10/03/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	24.5	B		P
7440-36-0	Antimony	4.0	U		P
7440-38-2	Arsenic	6.0	U		P
7440-39-3	Barium	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	41.8	B		P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	1.0	U		P
7439-89-6	Iron	17.0	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	29.6	B		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	18.0	U		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	130	B		P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	2.0	U		P
	Cyanide	8.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFGQ97

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-D5-0166

Lab Code: CHEM Case No.: 25725 SAS No.: SDG No.: MFGQ96

Matrix (soil/water): WATER Lab Sample ID: 29697S

Level (low/med): LOW Date Received: 10/03/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6.0	U		P
7440-36-0	Antimony	4.0	U		P
7440-38-2	Arsenic	6.0	U		P
7440-39-3	Barium	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	32.4	B		P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	2.0	U		P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	17.0	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	13.0	U		P
7439-96-5	Manganese	1.9	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	18.0	U		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	155	B		P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	4.9	B		P
	Cyanide	8.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 25725

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	10/2/97	Airborne Express

Regional Information

Sampler (Name): Judie Mattocks

Airbill Number: 4822863684

Non-Superfund Program

Sampler Signature: Judie Mattocks

Site Name: Texas Aircraft

City, State: Ft. Worth, TX

Site Spill ID:

3. Purpose*
- Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED
- Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI
- Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

5. Ship To:
Datachem
960 West Levoy Drive
Salt Lake City UT 84123
ATTN: Scott Saulls

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other	E RAS Analysis: VOA	BNA	Pest/PCB	High only	ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FEY35	4	low	grab	5	X	X	X			6-061369 - 368	ER-1	10/1/97 1030	MFGQ96	JM	B
FEY36	4	low	grab	5	X	X	X			6-061372 - 374	ER-2	10/2/97 1400	MFGQ97	JM	R

Shipment for Case Complete? (Y/N): Y

Page: 1 of 1

Sample(s) to be Used for Laboratory QC: FEY35

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
J Mattocks	10/2/97 1600				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-3 REV. 3/93

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 11-19-1997

Subject: Contract Laboratory Program Data Review

From: Melvin L. Ritter, ESAT RPO, 6MD-HC

To: B. Canellas , 6SF-LT

Site: TX AIRCRAFT & ENGINE
Case#: 25725
SDG#: FE-Y35

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package was found to be:

(X) Acceptable: No major problems with data package.

( ) Provisional: Data is acceptable for Regional use. Problems are noted in the review report.

( ) Unacceptable: Some or all of data should not be used. Problems are noted in the review report.

If you have any questions regarding the data review report, please call me at (281) 983-2146.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator
Files (2)

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TX 77074

MEMORANDUM

DATE: November 14, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C. H. Chiang, ESAT TM, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-8019A ESAT File # O-1853
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25725
SDG # FEY35
Site TX Aircraft & Engine

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE

The data package is contractually compliant as determined by the hard copy review. The CCS audit report was not available at the time of this report preparation.

II. TECHNICAL ASSESSMENT OF DATA PACKAGE

The total number of results reviewed for this data package is 250. The data package is technically acceptable.

paper that
fiber

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25725 SITE TX Aircraft & Engine
LABORATORY DATAC NO. OF SAMPLES 2
CONTRACT# 68-D6-0017 MATRIX Water
SDG# FEY35 REVIEWER (IF NOT ESD) ESAT
SOW# CLP SOW OLM03.2 REVIEWER'S NAME Wallace Doong
ACCT# 8FAXJN05 SF# FAXUZZ COMPLETION DATE November 14, 1997

SAMPLE NO.					
FE-Y35					
FE-Y36					

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	O	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	O	O	O
4. BLANKS	O	O	O
5. SMC/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	O	O
7. OTHER QC	N/A	N/A	N/A
8. INTERNAL STANDARDS	O	O	N/A
9. COMPOUND ID/QUANTITATION	O	O	O
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	O	O	O

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS:

AREA OF CONCERN: All VOA samples exceeded the technical holding time limit by one day.

NOTABLE PERFORMANCE:

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 25725 **SDG** FEY35 **SITE** TX Aircraft & Engine **LAB** DATAC

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	2		
BNA	2		
PEST	2		

COMMENTS: The case consisted of 2 water samples for complete RAS organics analysis. The CTR/COC Records designated sample FE-Y35 as a field blank for MS/MSD analyses and sample FE-Y36 as a rinsate. The data package arrived 1 day early for the 35-day contractual turnaround time.

The samples did not contain any TCL analytes above the CRQL's. All sample results are acceptable.

The technical usability of all reported sample results is appropriately indicated by ESAT's final data qualifiers in the Data Summary Tables. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the audit results were recorded in the Evidence Inventory Checklist.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. All samples met contractual holding time criteria. All VOA samples exceeded the technical holding time limit (40 CFR Part 136) by one day. No results were qualified per Region 6 guidelines because aromatics were not detected in the samples. Other samples met technical holding time criteria.

2. **Tuning/Performance:** Acceptable. The BFB and DFTPP analyses met GC/MS tuning criteria. The Pest/PCB analyses met instrument performance guidelines. Several pesticides had overlapping retention time windows. However, the reviewer verified that the sample result usability was not affected.

CASE 25725 SDG FEY35 SITE TX Aircraft & Engine LAB DATAC

3. **Calibrations:** Acceptable. Target compounds met contractual and technical criteria.

4. **Blanks:** Acceptable. The method, storage, and instrument blanks met contractual requirements. No TCL analytes were detected in the laboratory blanks.

Field Blank & Rinsate The field blank and rinsate contained phenol, 4-chloro-3-methyl-phenol, diethylphthalate, di-n-butyl-phthalate, and gamma-BHC below the CRQL's. The rinsate also contained 4-methylphenol below the CRQL. Information on the samples associated with these field QC samples was not available, so the reviewer could not assess the effect of field contamination.

5. **System Monitoring Compounds (SMC)/Surrogates:** Acceptable. The SMC and surrogate recoveries were within the QC limits.

6. **Matrix Spike/Matrix Spike Duplicate:** Acceptable. The MS/MSD analyses met the precision and %recovery requirements with the following exceptions.

BNA and Pest/PCB The RPD's exceeded the QC limits for 1,4-dichlorobenzene, N-nitroso-di-n-propylamine, 1,2,4-trichloro-benzene, acenaphthene, 2,4-dinitrotoluene, gamma-BHC, and aldrin. Since these analytes were not detected in the unspiked samples above the CRQL's, data qualification was not necessary.

7. **Other QC:** Not Applicable.

8. **Internal Standards:** Acceptable. The internal standard areas and retention times were within the QC limits for all VOA and BNA analyses.

9. **Compound Identity/Quantitation:** Acceptable. The samples did not contain any TCL analytes above the CRQL's. However, the samples contained several TCL analytes below the CRQL's including phenol, 4-methylphenol, 4-chloro-3-methylphenol, gamma-BHC, and common phthalate esters. The reported analytes met compound identification guidelines.

10. **Performance/Completeness:** Acceptable. The data package was complete with minor deficiencies. The laboratory was concacted for correction and resubmission (see FAX Record Log).

11. **Overall Assessment:** Data are acceptable for all samples.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

ORGANIC DATA SUMMARY

Case No.: 25725 SDG: FEY35 Reviewer: Wallace Doong

Laboratory: DATAC Matrix: WATER Units: ug/L

VOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FE-Y35		FE-Y36											
Chloromethane	10 U		10 U											
Bromomethane	10 U		10 U											
Vinyl chloride	10 U		10 U											
Chloroethane	10 U		10 U											
Methylene chloride	10 U		10 U											
Acetone	10 U		10 U											
Carbon disulfide	10 U		10 U											
1,1-Dichloroethene	10 U		10 U											
1,1-Dichloroethane	10 U		10 U											
1,2-Dichloroethene (total)	10 U		10 U											
Chloroform	10 U		10 U											
1,2-Dichloroethane	10 U		10 U											
2-Butanone	10 U		10 U											
1,1,1-Trichloroethane	10 U		10 U											
Carbon tetrachloride	10 U		10 U											
Bromodichloromethane	10 U		10 U											
1,2-Dichloropropane	10 U		10 U											
cis-1,3-Dichloropropene	10 U		10 U											
Trichloroethene	10 U		10 U											
Dibromochloromethane	10 U		10 U											
1,1,2-Trichloroethane	10 U		10 U											
Benzene	10 U		10 U											
trans-1,3-Dichloropropene	10 U		10 U											
Bromoform	10 U		10 U											
4-Methyl-2-pentanone	10 U		10 U											
2-Hexanone	10 U		10 U											
Tetrachloroethene	10 U		10 U											
1,1,2,2-Tetrachloroethane	10 U		10 U											
Toluene	10 U		10 U											
Chlorobenzene	10 U		10 U											
Ethylbenzene	10 U		10 U											
Styrene	10 U		10 U											
Xylenes (total)	10 U		10 U											
Sample Volume (mL):	5		5											
Dilution Factor:	1		1											
Number of TIC's:	0		1											

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25725 SDG: FEY35 Reviewer: Wallace Doong

Laboratory: DATAC Matrix: WATER Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y35	FE-Y36					
Phenol	1 J	4 J					
bis(2-Chloroethyl)ether	12 U	10 U					
2-Chlorophenol	12 U	10 U					
1,3-Dichlorobenzene	12 U	10 U					
1,4-Dichlorobenzene	12 U	10 U					
1,2-Dichlorobenzene	12 U	10 U					
2-Methylphenol	12 U	10 U					
2,2'-Oxybis(1-chloropropane)	12 U	10 U					
4-Methylphenol	12 U	0.4 J					
N-Nitroso-di-n-propylamine	12 U	10 U					
Hexachloroethane	12 U	10 U					
Nitrobenzene	12 U	10 U					
Isophorone	12 U	10 U					
2-Nitrophenol	12 U	10 U					
2,4-Dimethylphenol	12 U	10 U					
bis(2-Chloroethoxy)methane	12 U	10 U					
2,4-Dichlorophenol	12 U	10 U					
1,2,4-Trichlorobenzene	12 U	10 U					
Naphthalene	12 U	10 U					
4-Chloroaniline	12 U	10 U					
Hexachlorobutadiene	12 U	10 U					
4-Chloro-3-methylphenol	0.4 J	0.5 J					
2-Methylnaphthalene	12 U	10 U					
Hexachlorocyclopentadiene	12 U	10 U					
2,4,6-Trichlorophenol	12 U	10 U					
2,4,5-Trichlorophenol	31 U	25 U					
2-Chloronaphthalene	12 U	10 U					
2-Nitroaniline	31 U	25 U					
Dimethylphthalate	12 U	10 U					
Acenaphthylene	12 U	10 U					
2,6-Dinitrotoluene	12 U	10 U					
3-Nitroaniline	31 U	25 U					
Acenaphthene	12 U	10 U					
2,4-Dinitrophenol	31 U	25 U					
4-Nitrophenol	31 U	25 U					
Dibenzofuran	12 U	10 U					
2,4-Dinitrotoluene	12 U	10 U					
Diethylphthalate	0.5 J	0.9 J					
4-Chlorophenyl-phenylether	12 U	10 U					
Fluorene	12 U	10 U					
4-Nitroaniline	31 U	25 U					
4,6-Dinitro-2-methylphenol	31 U	25 U					
N-Nitrosodiphenylamine	12 U	10 U					
4-Bromophenyl-phenylether	12 U	10 U					
Hexachlorobenzene	12 U	10 U					

ORGANIC DATA SUMMARY

Case No.: 25725 SDG: FEY35 Reviewer: Wallace Doong

Laboratory: DATAC Matrix: WATER Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y35	FE-Y36					
Pentachlorophenol	31 U	25 U					
Phenanthrene	12 U	10 U					
Anthracene	12 U	10 U					
Carbazole	12 U	10 U					
Di-n-butylphthalate	0.8 J	1 J					
Fluoranthene	12 U	10 U					
Pyrene	12 U	10 U					
Butylbenzylphthalate	12 U	10 U					
3,3'-Dichlorobenzidine	12 U	10 U					
Benzo(a)anthracene	12 U	10 U					
Chrysene	12 U	10 U					
bis(2-Ethylhexyl)phthalate	12 U	10 U					
Di-n-octylphthalate	12 U	10 U					
Benzo(b)fluoranthene	12 U	10 U					
Benzo(k)fluoranthene	12 U	10 U					
Benzo(a)pyrene	12 U	10 U					
Indeno(1,2,3-cd)pyrene	12 U	10 U					
Dibenz(a,h)anthracene	12 U	10 U					
Benzo(g,h,i)perylene	12 U	10 U					
Sample Volume (mL):	800	1000					
Dilution Factor:	1	1					
Number of TIC's:	7	13					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25725 SDG: FEY35 Reviewer: Wallace Doong

Laboratory: DATAC Matrix: WATER Units: ug/L

PESTICIDES/PCBs		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FE-Y35		FE-Y36											
alpha-BHC	0.050	U	0.050	U										
beta-BHC	0.050	U	0.050	U										
delta-BHC	0.050	U	0.050	U										
gamma-BHC (lindane)	0.0067	J	0.0081	J										
Heptachlor	0.050	U	0.050	U										
Aldrin	0.050	U	0.050	U										
Heptachlor epoxide	0.050	U	0.050	U										
Endosulfan I	0.050	U	0.050	U										
Dieldrin	0.10	U	0.10	U										
4,4'-DDE	0.10	U	0.10	U										
Endrin	0.10	U	0.10	U										
Endosulfan II	0.10	U	0.10	U										
4,4'-DDD	0.10	U	0.10	U										
Endosulfan sulfate	0.10	U	0.10	U										
4,4'-DDT	0.10	U	0.10	U										
Methoxychlor	0.50	U	0.50	U										
Endrin ketone	0.10	U	0.10	U										
Endrin aldehyde	0.10	U	0.10	U										
alpha-Chlordane	0.050	U	0.050	U										
gamma-Chlordane	0.050	U	0.050	U										
Toxaphene	5.0	U	5.0	U										
Aroclor-1016	1.0	U	1.0	U										
Aroclor-1221	2.0	U	2.0	U										
Aroclor-1232	1.0	U	1.0	U										
Aroclor-1242	1.0	U	1.0	U										
Aroclor-1248	1.0	U	1.0	U										
Aroclor-1254	1.0	U	1.0	U										
Aroclor-1260	1.0	U	1.0	U										
Sample Volume (mL):	1000		1000											
Dilution Factor:	1		1											

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25725 SDG No. FEY35 SDG Nos. To Follow SAS No. Date Rec 11/06/97

EPA Lab ID: DATAC

Lab Location: 960 West LeVoy Dr. Salt Lake City, UT 84123

Region: 6 Audit No.: 25725/FEY35

Re_Submitted CSF? Yes _____ No X

Box No(s): ONE

COMMENTS:

13, 14, & 15. Only airbill sticker accompanied the sample shipment.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?			X
15. Dated?			X
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Wallace Doong Wallace Doong / ESAT Data Reviewer Date 11/13/97

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

DC-2___

In Reference to Case No(s):
25725 SDG: FEY35 (O-1853)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: November 14, 1997
Laboratory Name: DATAC
Lab Contact:
Region: 6
Regional Contact: Wallace Doong - ESAT
FAX initiated by: ____ Laboratory __X__ Region

In reference to data for the following fractions:

Pest/PCB

Summary of Questions/Issues:

1. The reviewer was unable to reproduce the following reported results based on the submitted raw data. Please show examples of calculations or revise and resubmit the correct forms:

   the CF's (calibration factors) reported on Form 6E (page 270) for INDAL12 (column DB-1701, analyzed 10/08/97, 20:58); and

   calculated amounts on Form 7D (page 284) for PEM 12 (column DB-1701, analyzed 10/08/97, 14:49).

2. The %D values on all Form 7's for the PEM and INDA/B standards had incorrect signs. According to EQ. 9 (9.2.4.9, D-26/PEST), the %D is not an absolute value and should carry "+" or "-" signs. Please report the appropriate sign for the %D values for future cases.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact DATAC / Scott B. Saulls
In Reference To Case No. 25725 **SDG:** FEY35

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-29), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 7 days** to:

Mr. Mahmoud El-Feky
U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2986.

Wallace Dong
Signature

November 14, 1997
Date

Distribution: (1) Lab Copy (2) Region Copy

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB59C414

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: not dec. ____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04415

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB60C415

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: not dec. _____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

0021

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: FEY36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04415

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB60C415

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: not dec. ____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 67630	Isopropyl Alcohol	7.37	400	JN

0022

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: BL-140577-1

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB58BLK

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

% Moisture: not dec. _____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK01

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: BL-140577-2

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB72HBLK

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

% Moisture: not dec. _____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB61S414

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: not dec. _____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	43	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	44	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	45	
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	45	
108-90-7	Chlorobenzene	44	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35MSD

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: MB62D414

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: not dec. ____ Date Analyzed: 10/10/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	43	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	44	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	46	
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	46	
108-90-7	Chlorobenzene	45	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414

Sample wt/vol: 800.0 (g/mL) ML Lab File ID: RLW14C14

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/11/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	1	J
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	2,2'-oxybis(1-Chloropropane)	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	0.4	J
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	31	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	31	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U
99-09-2	3-Nitroaniline	31	U
83-32-9	Acenaphthene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414

Sample wt/vol: 800.0 (g/mL) ML Lab File ID: RLW14C14

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/11/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	31	U
100-02-7	4-Nitrophenol	31	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	0.5	J
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	31	U
534-52-1	4,6-Dinitro-2-methylphenol	31	U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	31	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
86-74-8	Carbazole	12	U
84-74-2	Di-n-butylphthalate	0.8	J
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	12	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octylphthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04415

Sample wt/vol: 1000 (g/mL) ML Lab File ID: RMA11C15

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	4	J
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	0.4	J
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	0.5	J
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04415

Sample wt/vol: 1000 (g/mL) ML Lab File ID: RMA11C15

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	0.9	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FEY36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04415

Sample wt/vol: 1000 (g/mL) ML Lab File ID: RMA11C15

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/17/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 13

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		CYCLIC HYDROCARBON	4.26	11	BJ
2.		ALCOHOL	4.38	8	BJ
3.		OXY HYDROCARBON	4.45	11	J
4.		CYCLIC HYDROCARBON	4.50	8	BJ
5.		OXY HYDROCARBON	4.71	3	J
6.		ALCOHOL	4.94	4	J
7.		OXY HYDROCARBON	5.76	2	J
8.	74367332	PROPANOIC ACID, 2-METHYL-, 2	8.16	11	JN
9.		OXY AROMATIC	8.63	7	J
10.		OXY AROMATIC	9.49	2	J
11.		OXY AROMATIC	10.12	4	J
12.		OXY AROMATIC	13.55	7	J
13.		CYCLIC HYDROCARBON	16.40	16	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK01

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: BL-140578-1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: RLW12BLK

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/11/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK01

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: BL-140578-1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: RLW12BLK

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/11/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

0229

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414MS

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: RLW15S14

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/11/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	54	
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	49	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	31	
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	32	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	29	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	49	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	35	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414MS

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: RLW15S14

Level: (low/med) LOW Date Received: 10/03/97

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/06/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/11/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	55	
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	34	
84-66-2	Diethylphthalate	0.4	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	66	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.8	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	38	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/03/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/06/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/14/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.0067	JP
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04415

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/03/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/06/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/14/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.0081	JP
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKW4

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: PBLKW4_0369

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/06/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/14/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY35MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25725 SAS No.: _____ SDG No.: FEY35

Matrix: (soil/water) WATER Lab Sample ID: 97C04414MS

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/03/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/06/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/14/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.48	
76-44-8	Heptachlor	0.47	
309-00-2	Aldrin	0.45	
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.89	
72-55-9	4,4'-DDE	0.011	JP
72-20-8	Endrin	0.96	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.90	
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.029	JP
7421-93-4	Endrin aldehyde	0.020	JP
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

TNRCC

Protecting Texas
by Reducing and
Preventing Pollution

Screening Site Inspection Report
Appendix P - PREScore

for

McGinnes Industrial Maintenance Corporation
TXD 980 679 031
Hitchcock, Galveston County, Texas

Prepared in cooperation with the
U.S. Environmental Protection Agency

May 1998

PREScore 4.0
NPL Characteristics Data Collection Form

Record Information

1. Site Name: McGinnes Industrial Maintenance Corporation
   (as entered in CERCLIS)
2. Site CERCLIS Number: TXD980679031
3. Site Reviewer: Marshall Cedilote
4. Date: 1/22/97
5. Site Location: Hitchcock/Galveston, TX
   (City/County,State)
6. Congressional District: Un
7. Site Coordinates: Single

   Latitude: 29°14'01.5" Longitude: 095°01'43.8"

Site Description

1. Setting: Rural
2. Current Owner: Private - Industrial
3. Current Site Status: Active
4. Years of Operation: Active Site , from and to dates: 1966-1994
5. How Initially Identified: State/Local Program
6. Entity Responsible for Waste Generation:

   - Manufacturing
   - Industrial Organic Chem.
   - Other Manufacturing

7. Site Activities/Waste Deposition:

   - Surface Impoundment

Waste Description

8. Wastes Deposited or Detected Onsite:

   - Organic Chemicals

PREScore 4.0
NPL Characteristics Data Collection Form

Response Actions

9. Response/Removal Actions:

RCRA Information

10. For All Active Facilities, RCRA Site Status:

    - Not Applicable

Demographic Information

11. Workers Present Onsite: Yes

12. Distance to Nearest Non-Worker Individual: > 1 Mile

13. Residential Population Within 1 Mile: No

14. Residential Population Within 4 Miles: Unknown

Water Use Information

15. Local Drinking Water Supply Source:

    - No Water Withdrawals Within Target Distance Limits

16. Total Population Served by Local Drinking Water Supply Source: Not Applicable

17. Drinking Water Supply System Type for Local Drinking Water Supply Sources:

    - Not Applicable

18. Surface Water Adjacent to/Draining Site:

    - Other - contaminated barge canal

PREScore 4.0
HRS DOCUMENTATION RECORD

1. Site Name: McGinnes Industrial Maintenance Corporation
   (as entered in CERCLIS)

2. Site CERCLIS Number: TXD980679031

3. Site Reviewer: Marshall Cedilote

4. Date: 1/22/97

5. Site Location: Hitchcock/Galveston, TX
   (City/County,State)

6. Congressional District: Un

7. Site Coordinates: Single

   Latitude: 29°14'01.5" Longitude: 095°01'43.8"

	Score
Ground Water Migration Pathway Score (Sgw)	0.00
Surface Water Migration Pathway Score (Ssw)	100.00
Soil Exposure Pathway Score (Ss)	0.00
Air Migration Pathway Score (Sa)	0.00

Site Score	50.00

NOTE

Site names, and references to specific parcels or properties, are provided for general identification purposes only. Knowledge regarding the extent of sites will be refined as more information is developed during the RI/FS and even during implementation of the remedy.

PREScore 4.0
GROUND WATER MIGRATION PATHWAY SCORESHEET

GROUND WATER MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release to an Aquifer Aquifer:		
1. Observed Release	550	0
2. Potential to Release		
2a. Containment	10	10
2b. Net Precipitation	10	0
2c. Depth to Aquifer	5	5
2d. Travel Time	35	35
2e. Potential to Release [lines 2a(2b+2c+2d)]	500	400
3. Likelihood of Release	550	400
Waste Characteristics		
4. Toxicity/Mobility	*	1.00E+02
5. Hazardous Waste Quantity	*	10000
6. Waste Characteristics	100	32
Targets		
7. Nearest Well	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	0.00E+00
10. Wellhead Protection Area	20	0.00E+00
11. Targets (lines 7+8d+9+10)	**	0.00E+00
12. Targets (including overlaying aquifers)	**	0.00E+00
13. Aquifer Score	100	0.00
GROUND WATER MIGRATION PATHWAY SCORE (Sgw)	100	0.00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

PREScore 4.0
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors DRINKING WATER THREAT	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release	550	550
2. Potential to Release by Overland Flow		
2a. Containment	10	9
2b. Runoff	25	0
2c. Distance to Surface Water	25	25
2d. Potential to Release by Overland Flow [lines 2a(2b+2c)]	500	225
3. Potential to Release by Flood		
3a. Containment (Flood)	10	10
3b. Flood Frequency	50	7
3c. Potential to Release by Flood (lines 3a x 3b)	500	70
4. Potential to Release (lines 2d+3c)	500	295
5. Likelihood of Release	550	550
Waste Characteristics		
6. Toxicity/Persistence	*	1.00E+04
7. Hazardous Waste Quantity	*	10000
8. Waste Characteristics	100	100
Targets		
9. Nearest Intake	50	0.00E+00
10. Population		
10a. Level I Concentrations	**	0.00E+00
10b. Level II Concentrations	**	0.00E+00
10c. Potential Contamination	**	0.00E+00
10d. Population (lines 10a+10b+10c)	**	0.00E+00
11. Resources	5	0.00E+00
12. Targets (lines 9+10d+11)	**	0.00E+00
13. DRINKING WATER THREAT SCORE	100	0.00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

PREScore 4.0
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
14. Likelihood of Release (same as line 5)	550	550
Waste Characteristics		
15. Toxicity/Persistence/Bioaccumulation	*	5.00E+08
16. Hazardous Waste Quantity	*	10000
17. Waste Characteristics	1000	1000
Targets		
18. Food Chain Individual	50	4.50E+01
19. Population		
19a. Level I Concentrations	**	0.00E+00
19b. Level II Concentrations	**	3.00E-02
19c. Pot. Human Food Chain Contamination	**	0.00E+00
19d. Population (lines 19a+19b+19c)	**	3.00E-02
20. Targets (lines 18+19d)	**	4.50E+01
21. HUMAN FOOD CHAIN THREAT SCORE	100	100.00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

PREScore 4.0
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
22. Likelihood of Release (same as line 5)	550	550
Waste Characteristics		
23. Ecosystem Toxicity/Persistence/Bioacc.	*	5.00E+07
24. Hazardous Waste Quantity	*	10000
25. Waste Characteristics	1000	560
Targets		
26. Sensitive Environments		
26a. Level I Concentrations	**	0.00E+00
26b. Level II Concentrations	**	0.00E+00
26c. Potential Contamination	**	0.00E+00
26d. Sensitive Environments (lines 26a+26b+26c)	**	0.00E+00
27. Targets (line 26d)	**	0.00E+00
28. ENVIRONMENTAL THREAT SCORE	60	0.00
29. WATERSHED SCORE	100	100.00
30. SW: OVERLAND/FLOOD COMPONENT SCORE (Sof)	100	100.00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

PREScore 4.0
SOIL EXPOSURE PATHWAY SCORESHEET

SOIL EXPOSURE PATHWAY Factor Categories & Factors RESIDENT POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
1. Likelihood of Exposure	550	550
Waste Characteristics		
2. Toxicity	*	1.00E+04
3. Hazardous Waste Quantity	*	0
4. Waste Characteristics	100	0
Targets		
5. Resident Individual	50	0.00E+00
6. Resident Population		
6a. Level I Concentrations	**	0.00E+00
6b. Level II Concentrations	**	0.00E+00
6c. Resident Population (lines 6a+6b)	**	0.00E+00
7. Workers	15	0.00E+00
8. Resources	5	0.00E+00
9. Terrestrial Sensitive Environments	***	0.00E+00
10. Targets (lines 5+6c+7+8+9)	**	0.00E+00
11. RESIDENT POPULATION THREAT SCORE	**	0.00E+00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** No specific maximum value applies, see HRS for details.

PREScore 4.0
SOIL EXPOSURE PATHWAY SCORESHEET

SOIL EXPOSURE PATHWAY Factor Categories & Factors NEARBY POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
12. Attractiveness/Accessibility	100	0.00E+00
13. Area of Contamination	100	0.00E+00
14. Likelihood of Exposure	500	0.00E+00
Waste Characteristics		
15. Toxicity	*	0.00E+00
16. Hazardous Waste Quantity	*	0
17. Waste Characteristics	100	0
Targets		
18. Nearby Individual	1	0.00E+00
19. Population Within 1 Mile	**	0.00E+00
20. Targets (lines 18+19)	**	0.00E+00
21. NEARBY POPULATION THREAT SCORE	**	0.00E+00
SOIL EXPOSURE PATHWAY SCORE (Ss)	100	0.00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

PREScore 4.0
AIR PATHWAY SCORESHEET

AIR MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release	550	0
2. Potential to Release		
2a. Gas Potential to Release	500	0
2b. Particulate Potential to Release	500	0
2c. Potential to Release	500	0
3. Likelihood of Release	550	0
Waste Characteristics		
4. Toxicity/Mobility	*	0.00E+00
5. Hazardous Waste Quantity	*	0
6. Waste Characteristics	100	0
Targets		
7. Nearest Individual	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	0.00E+00
10. Sensitive Environments		
10a. Actual Contamination	***	0.00E+00
10b. Potential Contamination	***	0.00E+00
10c. Sens. Environments(lines 10a+10b)	***	0.00E+00
11. Targets (lines 7+8d+9+10c)	**	0.00E+00
AIR MIGRATION PATHWAY SCORE (Sa)	100	0.00E+00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** No specific maximum value applies, see HRS for details.

PREScore 4.0
WASTE QUANTITY

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Oxidation pond

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

PREScore 4.0
WASTE QUANTITY

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID		Oxidation pond	
b. Source Type		Surface Impoundment	
c. Secondary Source Type		N.A.	
d. Source Vol.(yd3/gal)	Source Area (ft2)	0.00	333250.00
e. Source Volume/Area Value		2.56E+04	
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)		0.00E+00	
g. Data Complete?		NO	
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)		0.00E+00	
i. Data Complete?		NO	
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)		2.56E+04	

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	NO	2.1E+00	ppm
Barium	< 2	NO	8.3E+01	ppm
Beryllium	< 2	NO	5.5E-01	ppm
Cadmium	< 2	NO	2.2E-01	ppm
Chromium	< 2	NO	1.2E+01	ppm
Copper	< 2	NO	7.8E+00	ppm
Lead	< 2	NO	9.3E+00	ppm
Manganese	< 2	NO	2.0E+02	ppm
Nickel	< 2	NO	8.6E+00	ppm
Silver	< 2	NO	4.1E-01	ppm
Sodium	< 2	NO	1.2E+03	ppm
TCDD	< 2	NO	5.3E-05	ppm
Tetrachlorodibenzofuran, 2,3,7	< 2	NO	8.2E-05	ppm
Vanadium	< 2	NO	1.8E+01	ppm
Zinc	< 2	NO	2.9E+01	ppm

PREScore 4.0
WASTE QUANTITY

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Impoundment 4

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

PREScore 4.0
WASTE QUANTITY

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID		Impoundment 4	
b. Source Type		Surface Impoundment	
c. Secondary Source Type		N.A.	
d. Source Vol.(yd3/gal)	Source Area (ft2)	0.00	666000.00
e. Source Volume/Area Value		5.12E+04	
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)		0.00E+00	
g. Data Complete?		NO	
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)		0.00E+00	
i. Data Complete?		NO	
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)		5.12E+04	

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	NO	2.5E+00	ppm
Barium	< 2	NO	2.0E+02	ppm
Beryllium	< 2	NO	3.9E-01	ppm
Cadmium	< 2	NO	9.8E-01	ppm
Chromium	< 2	NO	6.9E+01	ppm
Cobalt	< 2	NO	3.9E+00	ppm
Copper	< 2	NO	4.1E+01	ppm
Lead	< 2	NO	5.2E+01	ppm
Manganese	< 2	NO	5.4E+02	ppm
Nickel	< 2	NO	1.4E+01	ppm
Silver	< 2	NO	3.0E-01	ppm
Sodium	< 2	NO	1.6E+03	ppm
Vanadium	< 2	NO	1.2E+01	ppm
Zinc	< 2	NO	1.5E+02	ppm

PREScore 4.0
WASTE QUANTITY

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Impoundment 8

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

PREScore 4.0
WASTE QUANTITY

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID		Impoundment 8	
b. Source Type		Surface Impoundment	
c. Secondary Source Type		N.A.	
d. Source Vol.(yd3/gal)	Source Area (ft2)	0.00	250000.00
e. Source Volume/Area Value		1.92E+04	
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)		0.00E+00	
g. Data Complete?		NO	
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)		0.00E+00	
i. Data Complete?		NO	
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)		1.92E+04	

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	NO	3.2E+00	ppm
Barium	< 2	NO	1.8E+02	ppm
Beryllium	< 2	NO	7.5E-01	ppm
Cadmium	< 2	NO	4.1E-01	ppm
Chromium	< 2	NO	1.4E+01	ppm
Cobalt	< 2	NO	5.3E+00	ppm
Copper	< 2	NO	7.7E+00	ppm
Lead	< 2	NO	1.0E+01	ppm
Manganese	< 2	NO	2.0E+02	ppm
Nickel	< 2	NO	9.5E+00	ppm
Silver	< 2	NO	5.4E-01	ppm
Sodium	< 2	NO	1.7E+03	ppm
Vanadium	< 2	NO	3.0E+01	ppm
Zinc	< 2	NO	2.5E+01	ppm

PREScore 4.0
WASTE QUANTITY

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Impoundment 10

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

PREScore 4.0
WASTE QUANTITY

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID		Impoundment 10	
b. Source Type		Surface Impoundment	
c. Secondary Source Type		N.A.	
d. Source Vol.(yd3/gal)	Source Area (ft2)	0.00	443566.00
e. Source Volume/Area Value		3.41E+04	
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)		0.00E+00	
g. Data Complete?		NO	
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)		0.00E+00	
i. Data Complete?		NO	
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)		3.41E+04	

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	NO	2.9E+00	ppm
Barium	< 2	NO	1.7E+02	ppm
Beryllium	< 2	NO	3.5E-01	ppm
Cadmium	< 2	NO	9.1E-01	ppm
Chromium	< 2	NO	1.1E+02	ppm
Cobalt	< 2	NO	4.2E+00	ppm
Copper	< 2	NO	4.4E+01	ppm
Lead	< 2	NO	4.3E+01	ppm
Manganese	< 2	NO	4.3E+02	ppm
Nickel	< 2	NO	2.4E+01	ppm
Silver	< 2	NO	3.3E-01	ppm
Sodium	< 2	NO	2.6E+03	ppm
Vanadium	< 2	NO	1.5E+01	ppm
Zinc.	< 2	NO	1.5E+02	ppm

PREScore 4.0
WASTE QUANTITY

3. SITE HAZARDOUS WASTE QUANTITY SUMMARY

No.	Source ID	Migration Pathways	Vol. or Area Value (2e)	Constituent or Wastestream Value (2f,2h)	Hazardous Waste Qty. Value (2k)
1	Oxidation pond	GW-SW	2.56E+04	0.00E+00	2.56E+04
2	Impoundment 4	GW-SW	5.12E+04	0.00E+00	5.12E+04
3	Impoundment 8	GW-SW	1.92E+04	0.00E+00	1.92E+04
4	Impoundment 10	GW-SW	3.41E+04	0.00E+00	3.41E+04

PREScore 4.0
WASTE QUANTITY

4. PATHWAY HAZARDOUS WASTE QUANTITY AND WASTE CHARACTERISTICS SUMMARY TABLE

Migration Pathway	Contaminant Values		HWQVs*	WCVs**
Ground Water	Toxicity/Mobility	1.00E+02	10000	32
SW: Overland Flow, DW	Tox./Persistence	1.00E+04	10000	100
SW: Overland Flow, HFC	Tox./Persis./Bioacc.	5.00E+08	10000	1000
SW: Overland Flow, Env	Etox./Persis./Bioacc.	5.00E+07	10000	560
SW: GW to SW, DW	Tox./Persistence	1.00E+02	10000	32
SW: GW to SW, HFC	Tox./Persis./Bioacc.	1.00E+05	10000	180
SW: GW to SW, Env	Etox./Persis./Bioacc.	5.00E+04	10000	100
Soil Exposure:Resident	Toxicity	1.00E+04	0	0
Soil Exposure: Nearby	Toxicity	0.00E+00	0	0
Air	Toxicity/Mobility	0.00E+00	0	0

* Hazardous Waste Quantity Factor Values
** Waste Characteristics Factor Category Values

Note: SW = Surface Water
GW = Ground Water
DW = Drinking Water Threat
HFC = Human Food Chain Threat
Env = Environmental Threat

PREScore 4.0
GROUND WATER PATHWAY AQUIFER SUMMARY

No.	Aquifer ID	Type	Overlaying No.	Inter-Connected with	Likelihood of Release	Targets
0		Non K	0	0	400	0.00E+00

Containment

No.	Source ID	HWQ Value	Containment Value
1	Oxidation pond	2.56E+04	10
2	Impoundment 4	5.12E+04	10
3	Impoundment 8	1.92E+04	10
4	Impoundment 10	3.41E+04	10
	Containment Factor		10

Net Precipitation

Net Precipitation (inches)	0.00

PREScore 4.0
GROUND WATER PATHWAY LIKELIHOOD OF RELEASE AQUIFER

Aquifer:

Type of Aquifer: Non Karst

Overlaying Aquifer: 0

Interconnected with: 0

OBSERVED RELEASE

No.	Well ID	Well Type	Distance (miles)	Level of Contamination

- N/A and/or data not specified

Observed Release Factor 0

PREScore 4.0
GROUND WATER PATHWAY LIKELIHOOD OF RELEASE AQUIFER

POTENTIAL TO RELEASE

Containment

Containment Factor	10	

Net Precipitation

Net Precipitation Factor	0	

Depth to Aquifer

A. Depth of Hazardous Substances	0.00	feet
B. Depth to Aquifer from Surface	0.00	feet
C. Depth to Aquifer (B - A)	0.00	feet
Depth to Aquifer Factor	5	

Travel Time

Are All Layers Karst?	NO	
Thickness of Layer(s) with Lowest Conductivity	0.00	feet
Hydraulic Conductivity (cm/sec)	0.0E-00	
Travel Time Factor	35	

Potential to Release Factor	400

PREScore 4.0
GROUND WATER PATHWAY WASTE CHARACTERISTICS

Source: 1 Oxidation pond

Source Hazardous Waste Quantity Value: 25634.62

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
Arsenic	10000	1.00E-02	1.00E+02
Barium	10	1.00E-02	1.00E-01
Beryllium	10000	1.00E-02	1.00E+02
Cadmium	10000	2.00E-03	2.00E+01
Chromium	10000	1.00E-02	1.00E+02
Copper	0	1.00E-02	0.00E+00
Lead	0	2.00E-05	0.00E+00
Manganese	10000	1.00E-02	1.00E+02
Nickel	10000	2.00E-05	2.00E-01
Silver	100	2.00E-05	2.00E-03
Sodium	0	1.00E-02	0.00E+00
TCDD	10000	2.00E-09	2.00E-05
Tetrachlorodibenzofuran, 2,3,7,8-	0	2.00E-07	0.00E+00
Vanadium	100	2.00E-07	2.00E-05
Zinc	10	2.00E-03	2.00E-02

PREScore 4.0
GROUND WATER PATHWAY WASTE CHARACTERISTICS

Source: 2 Impoundment 4

Source Hazardous Waste Quantity Value: 51230.77

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
Arsenic	10000	1.00E-02	1.00E+02
Barium	10	1.00E-02	1.00E-01
Beryllium	10000	1.00E-02	1.00E+02
Cadmium	10000	2.00E-03	2.00E+01
Chromium	10000	1.00E-02	1.00E+02
Cobalt	1	1.00E-02	1.00E-02
Copper	0	1.00E-02	0.00E+00
Lead	0	2.00E-05	0.00E+00
Manganese	10000	1.00E-02	1.00E+02
Nickel	10000	2.00E-05	2.00E-01
Silver	100	2.00E-05	2.00E-03
Sodium	0	1.00E-02	0.00E+00
Vanadium	100	2.00E-07	2.00E-05
Zinc	10	2.00E-03	2.00E-02

PREScore 4.0
GROUND WATER PATHWAY WASTE CHARACTERISTICS

Source: 3 Impoundment 8

Source Hazardous Waste Quantity Value: 19230.77

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
Arsenic	10000	1.00E-02	1.00E+02
Barium	10	1.00E-02	1.00E-01
Beryllium	10000	1.00E-02	1.00E+02
Cadmium	10000	2.00E-03	2.00E+01
Chromium	10000	1.00E-02	1.00E+02
Cobalt	1	1.00E-02	1.00E-02
Copper	0	1.00E-02	0.00E+00
Lead	0	2.00E-05	0.00E+00
Manganese	10000	1.00E-02	1.00E+02
Nickel	10000	2.00E-05	2.00E-01
Silver	100	2.00E-05	2.00E-03
Sodium	0	1.00E-02	0.00E+00
Vanadium	100	2.00E-07	2.00E-05
Zinc	10	2.00E-03	2.00E-02

PREScore 4.0
GROUND WATER PATHWAY WASTE CHARACTERISTICS

Source: 4 Impoundment 10

Source Hazardous Waste Quantity Value: 34120.46

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
Arsenic	10000	1.00E-02	1.00E+02
Barium	10	1.00E-02	1.00E-01
Beryllium	10000	1.00E-02	1.00E+02
Cadmium	10000	2.00E-03	2.00E+01
Chromium	10000	1.00E-02	1.00E+02
Cobalt	1	1.00E-02	1.00E-02
Copper	0	1.00E-02	0.00E+00
Lead	0	2.00E-05	0.00E+00
Manganese	10000	1.00E-02	1.00E+02
Nickel	10000	2.00E-05	2.00E-01
Silver	100	2.00E-05	2.00E-03
Sodium	0	1.00E-02	0.00E+00
Vanadium	100	2.00E-07	2.00E-05
Zinc	10	2.00E-03	2.00E-02

PREScore 4.0
GROUND WATER PATHWAY WASTE CHARACTERISTICS

Hazardous Substances Found in an Observed Release

Well No.	Observed Release Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value

- N/A and/or data not specified

PREScore 4.0
GROUND WATER PATHWAY TARGETS FOR AQUIFER

Toxicity/Mobility Value from Source Hazardous Substances:	1.00E+02
Toxicity/Mobility Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility Factor:	1.00E+02
Sum of Source Hazardous Waste Quantity Values:	1.30E+05
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	32

PREScore 4.0
GROUND WATER PATHWAY TARGETS FOR AQUIFER

Population by Well

No.	Well ID	Sample Type	Distance (miles)	Level of Contamination	Population

- N/A and/or data not specified

Level I Population Factor: 0.00

Level II Population Factor: 0.00

PREScore 4.0
GROUND WATER PATHWAY TARGETS FOR AQUIFER

Potential Contamination by Distance Category

Distance Category (miles)	Population	Value
> 0 to 1/4	0.0	0.00E+00
> 1/4 to 1/2	0.0	0.00E+00
> 1/2 to 1	0.0	0.00E+00
> 1 to 2	0.0	0.00E+00
> 2 to 3	0.0	0.00E+00
> 3 to 4	0.0	0.00E+00

Potential Contamination Factor: 0.000

Nearest Well

Level of Contamination: N.A.

Nearest Well Factor: 0.00E+00

Resources

Resource Use: NO

Resource Factor: 0.00E+00

Wellhead Protection Area

No wellhead protection area

Wellhead Protection Area Factor: 0.00E+00

PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

No.	Segment ID	Segment Type	Water Type	Start Point (mi)	End Point (mi)	Average Flow (cfs)
1	Jones Bay	Coastal Ti	Salt	0.00	0.00	N.A.

PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

OBSERVED RELEASE

No.	Sample ID	Sample Type	Distance (miles)	Level of Contamination DW	HFC	Env
1	SE-18	Sediment	6.000	Level II	Level II	Level II

Sample No.	Hazardous Substance	Concent.	Units
1	Copper	3.0E+04	ppb

Observed Release Factor 550

PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

POTENTIAL TO RELEASE

Potential to Release by Overland Flow

Containment

No.	Source ID	HWQ Value	Containment Value
1	Oxidation pond	2.56E+04	9
2	Impoundment 4	5.12E+04	9
3	Impoundment 8	1.92E+04	9
4	Impoundment 10	3.41E+04	9

Containment Factor: 9

PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

Distance to Surface Water

Distance to Surface Water:	0.0 feet
Distance to Surface Water Factor:	25

Runoff

A. Drainage Area:	0.0 acres
B. 2-year, 24-hour Rainfall:	0.0 inches
C. Soil Group: Coarse-textured soils with high infiltration rates	A
Runoff Factor:	0

Potential to Release by Overland Flow Factor:	225

PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

Potential to Release by Flood

No.	Source ID	HWQ Value	Flood Containment Value	Flood Frequency Value	Potential to Release by Flood
1	Oxidation pond	2.56E+04	10	7	70
3	Impoundment 8	1.92E+04	10	7	70
4	Impoundment 10	3.41E+04	10	7	70

Potential to Release by Flood Factor: 70

PREScore 4.0
SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS

Source: 1 Oxidation pond

Source Hazardous Waste Quantity Value: 25634.62

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
Arsenic	10000	1.00E+00	1.00E+04
Barium	10	1.00E+00	1.00E+01
Beryllium	10000	1.00E+00	1.00E+04
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Copper	0	1.00E+00	0.00E+00
Lead	0	1.00E+00	0.00E+00
Manganese	10000	1.00E+00	1.00E+04
Nickel	10000	1.00E+00	1.00E+04
Silver	100	1.00E+00	1.00E+02
Sodium	0	1.00E+00	0.00E+00
TCDD	10000	1.00E+00	1.00E+04
Tetrachlorodibenzofuran, 2,3,7,8-	0	1.00E+00	0.00E+00
Vanadium	100	1.00E+00	1.00E+02
Zinc	10	1.00E+00	1.00E+01

PREScore 4.0
SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS

Source: 2 Impoundment 4

Source Hazardous Waste Quantity Value: 51230.77

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
Arsenic	10000	1.00E+00	1.00E+04
Barium	10	1.00E+00	1.00E+01
Beryllium	10000	1.00E+00	1.00E+04
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Cobalt	1	1.00E+00	1.00E+00
Copper	0	1.00E+00	0.00E+00
Lead	0	1.00E+00	0.00E+00
Manganese	10000	1.00E+00	1.00E+04
Nickel	10000	1.00E+00	1.00E+04
Silver	100	1.00E+00	1.00E+02
Sodium	0	1.00E+00	0.00E+00
Vanadium	100	1.00E+00	1.00E+02
Zinc	10	1.00E+00	1.00E+01

PREScore 4.0
SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS

Source: 3 Impoundment 8

Source Hazardous Waste Quantity Value: 19230.77

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
Arsenic	10000	1.00E+00	1.00E+04
Barium	10	1.00E+00	1.00E+01
Beryllium	10000	1.00E+00	1.00E+04
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Cobalt	1	1.00E+00	1.00E+00
Copper	0	1.00E+00	0.00E+00
Lead	0	1.00E+00	0.00E+00
Manganese	10000	1.00E+00	1.00E+04
Nickel	10000	1.00E+00	1.00E+04
Silver	100	1.00E+00	1.00E+02
Sodium	0	1.00E+00	0.00E+00
Vanadium	100	1.00E+00	1.00E+02
Zinc	10	1.00E+00	1.00E+01

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS

Source: 4 Impoundment 10

Source Hazardous Waste Quantity Value: 34120.46

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
Arsenic	10000	1.00E+00	1.00E+04
Barium	10	1.00E+00	1.00E+01
Beryllium	10000	1.00E+00	1.00E+04
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Cobalt	1	1.00E+00	1.00E+00
Copper	0	1.00E+00	0.00E+00
Lead	0	1.00E+00	0.00E+00
Manganese	10000	1.00E+00	1.00E+04
Nickel	10000	1.00E+00	1.00E+04
Silver	100	1.00E+00	1.00E+02
Sodium	0	1.00E+00	0.00E+00
Vanadium	100	1.00E+00	1.00E+02
Zinc	10	1.00E+00	1.00E+01

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
1	Copper	100	1.00E+00	1.00E+02

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS

Toxicity/Persistence Value from Source Hazardous Substances:	1.00E+04
Toxicity/Persistence Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Persistence Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	1.30E+05
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	100

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: SE-18
Sample Medium: Sediment
Location: 6.00 miles

Hazardous Substance	Hazardous Substance Concentration	DW MCL Benchmark Concentration	Units
Copper	3.0E+04	N.A.	ppb

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: SE-18
Distance from the Probable Point of Entry: 6.00 miles

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS

Level I Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
- N/A and/or data not specified		

Population Served by Level I Intakes: 0.0

Level I Population Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS

Level II Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
- N/A and/or data not specified		

Population Served by Level II Intakes: 0.0

Level II Population Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS

Potential Contamination

Intake ID	Average Annual Flow (cfs)	Population Served
- N/A and/or data not specified		

Type of Surface Water Body	Total Population	Dilution-Weighted Population
- N/A and/or data not specified		

Dilution-Weighted Population Served by Potentially Contaminated Intakes: 0.0

Potential Contamination Factor: 0.0

Nearest Intake

Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources

Resource Use: NO

Resource Value: 0.00E+00

PREScore 4.0
SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS

Source: 1 Oxidation pond

Source Hazardous Waste Quantity Value: 25634.62

Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+02	5.00E+06
Barium	10	1.00E+00	5.00E-01	5.00E+00
Beryllium	10000	1.00E+00	5.00E+01	5.00E+05
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+02	5.00E+06
Copper	0	1.00E+00	5.00E+04	0.00E+00
Lead	0	1.00E+00	5.00E+03	0.00E+00
Manganese	10000	1.00E+00	5.00E-01	5.00E+03
Nickel	10000	1.00E+00	5.00E+02	5.00E+06
Silver	100	1.00E+00	5.00E+01	5.00E+03
Sodium	0	1.00E+00	5.00E-01	0.00E+00
TCDD	10000	1.00E+00	5.00E+03	5.00E+07
Tetrachlorodibenzofuran, 2,3,7	0	1.00E+00	5.00E+04	0.00E+00
Vanadium	100	1.00E+00	5.00E-01	5.00E+01
Zinc	10	1.00E+00	5.00E+04	5.00E+05

PREScore 4.0
SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS

Source: 2 Impoundment 4

Source Hazardous Waste Quantity Value: 51230.77

Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+02	5.00E+06
Barium	10	1.00E+00	5.00E-01	5.00E+00
Beryllium	10000	1.00E+00	5.00E+01	5.00E+05
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+02	5.00E+06
Cobalt	1	1.00E+00	5.00E-01	5.00E-01
Copper	0	1.00E+00	5.00E+04	0.00E+00
Lead	0	1.00E+00	5.00E+03	0.00E+00
Manganese	10000	1.00E+00	5.00E-01	5.00E+03
Nickel	10000	1.00E+00	5.00E+02	5.00E+06
Silver	100	1.00E+00	5.00E+01	5.00E+03
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Vanadium	100	1.00E+00	5.00E-01	5.00E+01
Zinc	10	1.00E+00	5.00E+04	5.00E+05

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS

Source: 3 Impoundment 8

Source Hazardous Waste Quantity Value: 19230.77

Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+02	5.00E+06
Barium	10	1.00E+00	5.00E-01	5.00E+00
Beryllium	10000	1.00E+00	5.00E+01	5.00E+05
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+02	5.00E+06
Cobalt	1	1.00E+00	5.00E-01	5.00E-01
Copper	0	1.00E+00	5.00E+04	0.00E+00
Lead	0	1.00E+00	5.00E+03	0.00E+00
Manganese	10000	1.00E+00	5.00E-01	5.00E+03
Nickel	10000	1.00E+00	5.00E+02	5.00E+06
Silver	100	1.00E+00	5.00E+01	5.00E+03
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Vanadium	100	1.00E+00	5.00E-01	5.00E+01
Zinc	10	1.00E+00	5.00E+04	5.00E+05

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS

Source: 4 Impoundment 10

Source Hazardous Waste Quantity Value: 34120.46

Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+02	5.00E+06
Barium	10	1.00E+00	5.00E-01	5.00E+00
Beryllium	10000	1.00E+00	5.00E+01	5.00E+05
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+02	5.00E+06
Cobalt	1	1.00E+00	5.00E-01	5.00E-01
Copper	0	1.00E+00	5.00E+04	0.00E+00
Lead	0	1.00E+00	5.00E+03	0.00E+00
Manganese	10000	1.00E+00	5.00E-01	5.00E+03
Nickel	10000	1.00E+00	5.00E+02	5.00E+06
Silver	100	1.00E+00	5.00E+01	5.00E+03
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Vanadium	100	1.00E+00	5.00E-01	5.00E+01
Zinc	10	1.00E+00	5.00E+04	5.00E+05

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/ Persistence/ Bioaccum. Value
1	Copper	100	1.00E+00	5.00E+04	5.00E+06

PREScore 4.0

SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS

Toxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+08
Toxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Persistence/Bioaccumulation Factor:	5.00E+08
Sum of Source Hazardous Waste Quantity Values:	1.30E+05
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	1000

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: SE-18
Sample Medium: Sediment
Location: 6.00 miles

Hazardous Substance	Hazardous Substance Concentration	FDAAL Benchmark Concentration	Units
Copper	3.0E+04	N.A.	ppb

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: SE-18
Distance from the Probable Point of Entry: 6.00 miles

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS

Level I Concentrations

Fishery	Annual Production (pounds)	Human Food Chain Population Value
- N/A and/or data not specified		

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS

Level II Concentrations

Fishery	Annual Production (pounds)	Human Food Chain Population Value
1 Jones Bay	1.0	3.00E-02

Sum of Human Food Chain Population Values: 3.00E-02

Level II Concentrations Factor: 3.00E-02

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS

Potential Contamination

Fishery	Annnual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weight (Di)	Pi*Di

- N/A and/or data not specified

Sum of (Pi*Di): 0.00E+00

Potential Human Food Chain Contamination Factor: 0.00E+00

Food Chain Individual

Location of Nearest Fishery: N.A.

Food Chain Individual Factor: 45.00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

Source: 1 Oxidation pond

Source Hazardous Waste Quantity Value: 25634.62

Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
Arsenic	100	1.00E+00	5.00E+02	5.00E+04
Barium	1	1.00E+00	5.00E-01	5.00E-01
Beryllium	0	1.00E+00	5.00E+01	0.00E+00
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	100	1.00E+00	5.00E+02	5.00E+04
Copper	100	1.00E+00	5.00E+04	5.00E+06
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Manganese	0	1.00E+00	5.00E+04	0.00E+00
Nickel	1000	1.00E+00	5.00E+02	5.00E+05
Silver	1000	1.00E+00	5.00E+01	5.00E+04
Sodium	0	1.00E+00	5.00E-01	0.00E+00
TCDD	10000	1.00E+00	5.00E+03	5.00E+07
Tetrachlorodibenzofuran, 2,3,7	0	1.00E+00	5.00E+04	0.00E+00
Vanadium	0	1.00E+00	5.00E-01	0.00E+00
Zinc	100	1.00E+00	5.00E+04	5.00E+06

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

Source: 2 Impoundment 4

Source Hazardous Waste Quantity Value: 51230.77

Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
Arsenic	100	1.00E+00	5.00E+02	5.00E+04
Barium	1	1.00E+00	5.00E-01	5.00E-01
Beryllium	0	1.00E+00	5.00E+01	0.00E+00
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	100	1.00E+00	5.00E+02	5.00E+04
Cobalt	0	1.00E+00	5.00E+03	0.00E+00
Copper	100	1.00E+00	5.00E+04	5.00E+06
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Manganese	0	1.00E+00	5.00E+04	0.00E+00
Nickel	1000	1.00E+00	5.00E+02	5.00E+05
Silver	1000	1.00E+00	5.00E+01	5.00E+04
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Vanadium	0	1.00E+00	5.00E-01	0.00E+00
Zinc	100	1.00E+00	5.00E+04	5.00E+06

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

Source: 3 Impoundment 8

Source Hazardous Waste Quantity Value: 19230.77

Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
Arsenic	100	1.00E+00	5.00E+02	5.00E+04
Barium	1	1.00E+00	5.00E-01	5.00E-01
Beryllium	0	1.00E+00	5.00E+01	0.00E+00
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	100	1.00E+00	5.00E+02	5.00E+04
Cobalt	0	1.00E+00	5.00E+03	0.00E+00
Copper	100	1.00E+00	5.00E+04	5.00E+06
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Manganese	0	1.00E+00	5.00E+04	0.00E+00
Nickel	1000	1.00E+00	5.00E+02	5.00E+05
Silver	1000	1.00E+00	5.00E+01	5.00E+04
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Vanadium	0	1.00E+00	5.00E-01	0.00E+00
Zinc	100	1.00E+00	5.00E+04	5.00E+06

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

Source: 4 Impoundment 10

Source Hazardous Waste Quantity Value: 34120.46

Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
Arsenic	100	1.00E+00	5.00E+02	5.00E+04
Barium	1	1.00E+00	5.00E-01	5.00E-01
Beryllium	0	1.00E+00	5.00E+01	0.00E+00
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	100	1.00E+00	5.00E+02	5.00E+04
Cobalt	0	1.00E+00	5.00E+03	0.00E+00
Copper	100	1.00E+00	5.00E+04	5.00E+06
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Manganese	0	1.00E+00	5.00E+04	0.00E+00
Nickel	1000	1.00E+00	5.00E+02	5.00E+05
Silver	1000	1.00E+00	5.00E+01	5.00E+04
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Vanadium	0	1.00E+00	5.00E-01	0.00E+00
Zinc	100	1.00E+00	5.00E+04	5.00E+06

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
1	Copper	100	1.00E+00	5.00E+04	5.00E+06

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

Ecotoxicity/Persistence/Bioaccummulation Value from Source Hazardous Substances:	5.00E+07
Ecotoxicity/Persistence/Bioaccummulation Value from Observed Release Hazardous Substances:	5.00E+06
Ecotoxicity/Persistence/Bioaccummulation Factor:	5.00E+07
Sum of Source Hazardous Waste Quantity Values:	1.30E+05
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	560

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: SE-18
Sample Medium: Sediment
Location: 6.00 miles

Hazardous Substance	Hazardous Substance Concentration	AWQC Benchmarks Concentrations FRESH	SALT	Units
Copper	3.0E+04		N.A.	ppb

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: SE-18
Distance from the Probable Point of Entry: 6.00 miles

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS

Level I Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
- N/A and/or data not specified		

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level I Concentrations Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS

Level II Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
- N/A and/or data not specified		

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level II Concentrations Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS

Potential Contamination

Sensitive Environments

Type of Surface Water Body	Sensitive Environment	Sensitive Environment Value

Wetlands

Type of Surface Water Body	Sensitive Environment	Wetlands Frontage	Wetlands Value

- N/A and/or data not specified

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS

Type of Surface Water Body	Sum of Sens. Environment Values(Sj)	Sum of Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Dj(Wj+Sj)
- N/A and/or data not specified				

Sum of Dj(Wj+Sj): 0.00E+00
Sum of Dj(Wj+Sj)/10: 0.00E+00

Potential Contamination Sensitive Environment Factor: 0.00E+00

PREScore 4.0
SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT LIKELIHOOD OF EXPOSURE

Likelihood of Exposure

No.	Source ID	Level of Contamination
1	Oxidation pond	Level I
2	Impoundment 4	Level I
3	Impoundment 8	Level I
4	Impoundment 10	Level I

Likelihood of Exposure Factor: 550

Source No.	Hazardous Substance	Depth (ft.)	Concent.	Cancer	RFD	Units
1	Arsenic	< 2	2.1E+00	4.3E-01	2.3E+01	ppm
1	Barium	< 2	8.3E+01	0.0E+00	5.5E+03	ppm
1	Beryllium	< 2	5.5E-01	1.5E-01	3.9E+02	ppm
1	Cadmium	< 2	2.2E-01	0.0E+00	3.9E+01	ppm
1	Chromium	< 2	1.2E+01	0.0E+00	3.9E+02	ppm
1	Copper	< 2	7.8E+00	0.0E+00	0.0E+00	ppm
1	Lead	< 2	9.3E+00	0.0E+00	0.0E+00	ppm
1	Manganese	< 2	2.0E+02	0.0E+00	1.1E+04	ppm
1	Nickel	< 2	8.6E+00	0.0E+00	1.6E+03	ppm
1	Silver	< 2	4.1E-01	0.0E+00	3.9E+02	ppm
1	Sodium	< 2	1.2E+03	0.0E+00	0.0E+00	ppm
1	TCDD	< 2	5.3E-05	4.0E-06	0.0E+00	ppm
1	Tetrachlorodibenzofuran, 2,3,7	< 2	8.2E-05	4.0E-05	0.0E+00	ppm
1	Vanadium	< 2	1.8E+01	0.0E+00	5.5E+02	ppm
1	Zinc	< 2	2.9E+01	0.0E+00	2.3E+04	ppm
2	Arsenic	< 2	2.5E+00	4.3E-01	2.3E+01	ppm
2	Barium	< 2	2.0E+02	0.0E+00	5.5E+03	ppm
2	Beryllium	< 2	3.9E-01	1.5E-01	3.9E+02	ppm
2	Cadmium	< 2	9.8E-01	0.0E+00	3.9E+01	ppm
2	Chromium	< 2	6.9E+01	0.0E+00	3.9E+02	ppm
2	Cobalt	< 2	3.9E+00	0.0E+00	0.0E+00	ppm
2	Copper	< 2	4.1E+01	0.0E+00	0.0E+00	ppm
2	Lead	< 2	5.2E+01	0.0E+00	0.0E+00	ppm
2	Manganese	< 2	5.4E+02	0.0E+00	1.1E+04	ppm
2	Nickel	< 2	1.4E+01	0.0E+00	1.6E+03	ppm
2	Silver	< 2	3.0E-01	0.0E+00	3.9E+02	ppm
2	Sodium	< 2	1.6E+03	0.0E+00	0.0E+00	ppm
2	Vanadium	< 2	1.2E+01	0.0E+00	5.5E+02	ppm
2	Zinc	< 2	1.5E+02	0.0E+00	2.3E+04	ppm
3	Arsenic	< 2	3.2E+00	4.3E-01	2.3E+01	ppm
3	Barium	< 2	1.8E+02	0.0E+00	5.5E+03	ppm
3	Beryllium	< 2	7.5E-01	1.5E-01	3.9E+02	ppm
3	Cadmium	< 2	4.1E-01	0.0E+00	3.9E+01	ppm
3	Chromium	< 2	1.4E+01	0.0E+00	3.9E+02	ppm
3	Cobalt	< 2	5.3E+00	0.0E+00	0.0E+00	ppm
3	Copper	< 2	7.7E+00	0.0E+00	0.0E+00	ppm

PREScore 4.0

SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT LIKELIHOOD OF EXPOSURE

3	Lead	< 2	1.0E+01	0.0E+00	0.0E+00	ppm
3	Manganese	< 2	2.0E+02	0.0E+00	1.1E+04	ppm
3	Nickel	< 2	9.5E+00	0.0E+00	1.6E+03	ppm
3	Silver	< 2	5.4E-01	0.0E+00	3.9E+02	ppm
3	Sodium	< 2	1.7E+03	0.0E+00	0.0E+00	ppm
3	Vanadium	< 2	3.0E+01	0.0E+00	5.5E+02	ppm
3	Zinc	< 2	2.5E+01	0.0E+00	2.3E+04	ppm
4	Arsenic	< 2	2.9E+00	4.3E-01	2.3E+01	ppm
4	Barium	< 2	1.7E+02	0.0E+00	5.5E+03	ppm
4	Beryllium	< 2	3.5E-01	1.5E-01	3.9E+02	ppm
4	Cadmium	< 2	9.1E-01	0.0E+00	3.9E+01	ppm
4	Chromium	< 2	1.1E+02	0.0E+00	3.9E+02	ppm
4	Cobalt	< 2	4.2E+00	0.0E+00	0.0E+00	ppm
4	Copper	< 2	4.4E+01	0.0E+00	0.0E+00	ppm
4	Lead	< 2	4.3E+01	0.0E+00	0.0E+00	ppm
4	Manganese	< 2	4.3E+02	0.0E+00	1.1E+04	ppm
4	Nickel	< 2	2.4E+01	0.0E+00	1.6E+03	ppm
4	Silver	< 2	3.3E-01	0.0E+00	3.9E+02	ppm
4	Sodium	< 2	2.6E+03	0.0E+00	0.0E+00	ppm
4	Vanadium	< 2	1.5E+01	0.0E+00	5.5E+02	ppm
4	Zinc	< 2	1.5E+02	0.0E+00	2.3E+04	ppm

PREScore 4.0

SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS

Source: 1 Oxidation pond

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
TCDD	10000
Tetrachlorodibenzofuran, 2,3,7	0
Vanadium	100
Zinc	10

PREScore 4.0

SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS

Source: 2 Impoundment 4

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Cobalt	1
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
Vanadium	100
Zinc	10

PREScore 4.0

SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS

Source: 3 Impoundment 8

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Cobalt	1
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
Vanadium	100
Zinc	10

PREScore 4.0

SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS

Source: 4 Impoundment 10

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Cobalt	1
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
Vanadium	100
Zinc	10

PREScore 4.0
SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT TARGETS

Toxicity Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	0.00E+00
Hazardous Waste Quantity Factor:	0
Waste Characteristics Factor Category:	0

PREScore 4.0
SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT TARGETS

Targets

Level I Population:	0.0	Value:	0.00
Level II Population:	0.0	Value:	0.00
Workers:	0.0	Value:	0.00
Resident Individual:	Potentia	Value:	0.00
Resources:	NO	Value:	0.00

Terrestial Sensitive Environment	Value
- N/A and/or data not specified	

Terrestrial Sensitive Environments Factor: 0.00

PREScore 4.0
SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT LIKELIHOOD OF EXPOSURE

Likelihood of Exposure

No.	Source ID	Level of Contamination	Attractiveness/ Accessibility	Area of Contam. (sq. feet)
- N/A and/or data not specified				

Highest Attractiveness/Accessibility Value: 0
Sum of Eligible Areas Of Contamination (sq. feet): 0
Area of Contamination Value: 0

Likelihood of Exposure Factor Category: 0

PREScore 4.0
Source Hazardous Waste Quantity Value: %4.2lf

Hazardous Substance	Toxicity Value

PREScore 4.0
Source Hazardous Waste Quantity Value: %4.2lf

Source: 1 Oxidation pond

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
TCDD	10000
Tetrachlorodibenzofuran, 2,3,7	0
Vanadium	100
Zinc	10

PREScore 4.0
Source Hazardous Waste Quantity Value: %4.2lf

Source: 2 Impoundment 4

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Cobalt	1
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
Vanadium	100
Zinc	10

PREScore 4.0
Source Hazardous Waste Quantity Value: %4.2lf

Source: 3 Impoundment 8

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Cobalt	1
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
Vanadium	100
Zinc	10

PREScore 4.0
Source Hazardous Waste Quantity Value: %4.2lf

Source: 4 Impoundment 10

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Beryllium	10000
Cadmium	10000
Chromium	10000
Cobalt	1
Copper	0
Lead	0
Manganese	10000
Nickel	10000
Silver	100
Sodium	0
Vanadium	100
Zinc	10

PREScore 4.0
Source Hazardous Waste Quantity Value: %4.2lf

Toxicity Factor:	0.00E+00
Sum of Source Hazardous Waste Quantity Values:	0.00E+00
Hazardous Waste Quantity Factor:	0
Waste Characteristics Factor Category:	0

PREScore 4.0
SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT TARGETS

Nearby Individual

Population within 1/4 mile: 0.0

Nearby Individual Value: 0.0

Population Within 1 Mile

Travel Distance Category	Number of People	Value
> 0 to 1/4 mile	0.0	0.0
> 1/4 to 1/2 mile	0.0	0.0
> 1/2 to 1 mile	0.0	0.0
	Population Within 1 Mile Factor:	0.0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

OBSERVED RELEASE

No.	Sample ID	Distance (miles)	Level of Contamination

- N/A and/or data not specified

Observed Release Factor: 0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Gas Migration Potential

GAS POTENTIAL TO RELEASE

Source ID	Source Type	Gas Contain. Value (A)	Gas Source Type Value (B)	Gas Migrtn. Potent. Value (C)	Sum (B+C)	Gas Potential to Rel. Value A(B+C)
- N/A and/or data not specified						

Gas Potential to Release Factor: 0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Oxidation pond

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
TCDD	6

Average of Gas Migration Potential Value for 3 Hazardous Substances: 6.000

Gas Migration Potential Value From Table 6-7: 6

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Impoundment 4

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value

Average of Gas Migration Potential Value for 3 Hazardous Substances: 0.000

Gas Migration Potential Value From Table 6-7: 0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Impoundment 8

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value

Average of Gas Migration Potential Value for 3 Hazardous Substances: 0.000

Gas Migration Potential Value From Table 6-7: 0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Impoundment 10

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value

Average of Gas Migration Potential Value for 3 Hazardous Substances: 0.000

Gas Migration Potential Value From Table 6-7: 0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Particulate Migration Potential

PARTICULATE POTENTIAL TO RELEASE

Source ID	Source Type	Partic. Contain. Value (A)	Partic. Source Type Value (B)	Partic. Migrtn. Potent. Value (C)	Sum (B+C)	Partic. Potential to Rel. Value A(B+C)
- N/A and/or data not specified						

Particulate Potential to Release Factor: 0

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Oxidation pond

Particulate Hazardous Substance
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Lead
Manganese
Nickel
Silver
Sodium
TCDD
Tetrachlorodibenzofuran, 2,3,7,8-
Vanadium
Zinc

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Impoundment 4

Particulate Hazardous Substance
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Manganese
Nickel
Silver
Sodium
Vanadium
Zinc

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Impoundment 8

Particulate Hazardous Substance
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Manganese
Nickel
Silver
Sodium
Vanadium
Zinc

PREScore 4.0
AIR PATHWAY LIKELIHOOD OF RELEASE

Source: Impoundment 10

Particulate Hazardous Substance
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Manganese
Nickel
Silver
Sodium
Vanadium
Zinc

PREScore 4.0
AIR PATHWAY WASTE CHARACTERISTICS

Hazardous Substance	Toxicity Value	Gas Mobility Value	Particulate Mobility Value	Toxicity/ Mobility Value

PREScore 4.0
AIR PATHWAY WASTE CHARACTERISTICS

Hazardous Substances Found in an Observed Release

Sample ID	Observed Release Hazardous Substance	Particulate Toxicity/ Mobility Value	Gas Toxicity/ Mobility Value

- N/A and/or data not specified

- N/A and/or data not specified

PREScore 4.0

Toxicity/Mobility Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility Factor:	0.00E+00
Sum of Source Hazardous Waste Quantity Values:	0.00E+00
Hazardous Waste Quantity Factor:	0
Waste Characteristics Factor Category:	0

AIR PATHWAY TARGETS

PREScore 4.0

Actual Contamination

No.	Sample ID	Distance (miles)	Level of Contamination

- N/A and/or data not specified

Potential Contamination

Distance Categories Subject to Potential Contamination	Population	Value
	Potential Contaminantion Factor:	0.0000
	Potential Contaminantion Factor:	0.0000
	Potential Contaminantion Factor:	0.0000
	Potential Contaminantion Factor:	0.0000
	Potential Contaminantion Factor:	0.0000
	Potential Contaminantion Factor:	0.0000
	Potential Contaminantion Factor:	0.0000

PREScore 4.0
%2d %-20.20s %5.3lf %-10.10s

Nearest Individual Factor

Distance in miles: Potentia

- N/A and/or data not specified

Resources

Resource Value: 4.935386178955580250000000000000000000000e+257

PREScore 4.0
%2d %-20.20s %5.3lf %-10.10s

Actual Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value

- N/A and/or data not specified

Actual Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value

- N/A and/or data not specified

(Sum of Sensitive Environments + Wetlands Values)

PREScore 4.0
%2d %-20.20s %5.3lf %-10.10s

Potential Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value	Distance Weight	Weighted Value/10
		4.935385843404746150000000000000000000000e+257		24940
0.0000	6.966985983755210970000000000000000000000e+199			

Sum of Sensitive Environments Weighted Values/10: 0.000

Potential Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value	Distance Weight	Weighted Value/10

- N/A and/or data not specified

APPENDIX Q

EPA RCRA Inspection Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MINOR HIBBS - TWC
For MARY McGILL

RECEIVED
SEP - 2 1997
INDUSTRIAL & HAZARDOUS WASTE
CORRECTIVE ACTION SECTION

April 8, 1993

Mr. Richard Haggard
McGinnis Industrial Maintenance Corporation
P. O. Box 1347
La Marque, TX 77568

RE: RCRA Inspection Report for McGinnis Pits near La Marque, Texas

Mr. Haggard:

Please find attached a copy of the Inspection Report, conducted by the Environmental Services Division and RCRA Enforcement Division, of the solid waste surface impoundments maintained by your company. Included within this report can be found the analytical results performed on the samples collected from your facility. The analyses were performed by the EPA Laboratory located in Houston, Texas.

Thank you for your assistance in the sampling effort. If you require further information regarding this Inspection, please contact Matt Andrus at (214) 655-2248.

Sincerely,

Guy L. Tidmore, Chief
Texas Section
RCRA Enforcement Branch
Hazardous Waste Management Division

RECEIVED
4/16/93
RD HAGGARD

Attachment

00001

Printed on Recycled Paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MEMORANDUM

MAR 17 1993

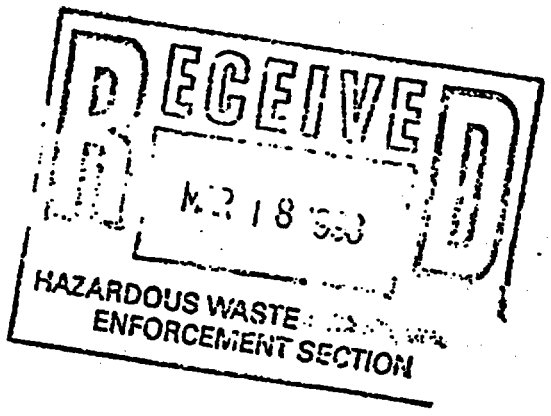
SUBJECT: McGinnes Maintenance Case Development Sampling Inspection

FROM: Robert R. Broyles
Chief
Surveillance Branch (6E-S)

TO: Randy Brown
Chief
RCRA Enforcement Branch (6H-E)

The attached report is the result of the RCRA Case Development Sampling Inspection conducted at McGinnes Maintenance facility in La Marque, Texas. If you have any questions, or need additional information, you may contact William Rhotenberry of my staff at x6491.

Attachments



00002

Printed on Recycled Paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MEMORANDUM

MAR 17 1993

SUBJECT: RCRA Case Development Inspection Report

FROM: Michael Michaud, Chief
Hazardous Waste Section (6E-SH)

TO: Guy Tidmore, Chief
Texas Section (6H-CT)

The attached RCRA inspection report has been prepared and reviewed by Environmental Services Division personnel. This report is being forwarded to you for your information and action.

EPA ID Number:_____ Inspection Dates: 01/11-14/93
Facility Name: McGinnes Maintenance Facility
Facility Mailing Address: P.O. Box 1347
LaMarque, Texas 77568
Facility Owner: GC Environmental Inc. Tel: (409) 938-7777
Facility Description: Sludge Disposal Facility
Type of Ownership: ___Federal ___State ___County ___Municipal xx Private
Did facility request a copy of the report? xx YES ___NO
HW Activities: ___Generator ___Treatment ___Storage ≤ 90d
___Storage ___Disposal ___Transporter
Inspection Type: ___Lead ___Overview ___STARS Commitment ___CEI xx CDI
___PCE ___Land Ban ___BIF xx Sampling ___Multi-Media
___Maqiladora
Inspection Participants: (name and phone number)
EPA Inspector(s): William Rhotenberry x8372 Matt Andruss
State Inspector(s): NA
Facility Representative(s): Richard Haggard (409) 938-7777
Checklists Completed: (Indicate number of each checklist attached)

___Generator	___Waste Piles	___Thermal Treatment
___TSD	___Closure	___Chemical, Physical and
___Tanks	___Post Closure	Biological Treatment
___Containers	___Incinerator	___Surface Impoundments
___Landfill	___Land Treatment	___Generator Supplement
___Transporter	___LOIS	xx Photographs
___Land Ban	___Groundwater	___Attachments
___BIF	___Other	

Apparent violations noted during outbriefing: No violations noted pending outcome of sample analysis.

Reviewed by: Gene Kaffer Date: 17 Mar 93

00003

Printed on Recycled Paper

INSPECTION NARRATIVE

The following narrative describes the Case Development Sampling Inspection which took place at McGinnes Industrial Maintenance Corporation near La Marque, Texas, from January 11-14, 1993. The sampling team consisted of the following Region 6 EPA Environmental Services Division (ESD) personnel:

(214).655-8372 William Rhotenberry (Team Leader)
Gene Keepper
Mary Stanton
Ken Cooper
Pam Larrison
Joaquin Medellin
Jim Gold

In addition to the above ESD personnel, Matt Andrus of Hazardous Waste Division's Texas Section, acted as Compliance Officer during the inspection.

The McGinnes Maintenance facility is located on property owned by Hall's Bayou Ranch. The entrance to the ranch is located about 10 miles from La Marque at the intersection of Highway 646 and F.M. Road 2004. The McGinnes facility, which covers 360 acres, and consists of 31 diked earthen impoundments, is located approximately 8 miles from the ranch entrance. The impoundments are bounded on the east by the intracoastal waterway, and on the north by Carancahua Lake.

History:
McGinnes Maintenance is now owned and operated by GC Environmental Inc., which has offices in Houston, and Texas City, Texas. GC Environmental is a subsidiary of Transamerican Waste Industries, Inc. The McGinnes facility is a series of impoundments which accept wastewater treatment sludges from Gulf Coast Waste Disposal Authority's (GCWA) Washburn Tunnel facility. The sludges are shipped by barges from the GCWA facility in Pasadena, Texas to the McGinnes facility via the Intracoastal Waterway. The barges enter the McGinnes facility through a barge canal dug by McGinnes. The barges dock at an unloading area and pump the sludges into the impoundments by pipeline. McGinnes does not have a RCRA Id.#, they are currently operating the facility under NPDES Permit # TX 0052591. The sludges are classified by TWC as Class II non-hazardous. GCWA processes wastewater from eleven different facilities, (See attachment A), but the bulk of the waste it receives (82%), is from Simpson Pasadena Paper Company, and Lyondell Petrochemical Company.

The impoundments are divided into two areas, the "Upper Unit", and the "Lower Unit". The lower unit consists of twenty impoundments, the first of which were built, and began receiving waste in 1966. The last impoundment in the lower unit was built

in 1980. Two of the impoundments in the lower unit are now closed, and no longer receive any waste, (See Attachment B). The upper unit, located northwest of the lower unit, consists of eleven impoundments, the first of which was built in 1981. At the time of the inspection impoundment #30, located in the upper unit was receiving the waste from the barges via a ten inch PVC pipeline. The waste is pumped into the impoundment, and the supernatant is moved by gravity flow over the impoundments to Impoundment #22, where it is then pumped via a ten inch PVC pipeline over to the lower unit into Impoundments #17, and #18. The supernatant moves by gravity flow from north to south over the impoundments, until it reaches Impoundments 4A, and 4B, which are oxidation ponds. The discharge weir is located adjacent to these two oxidation ponds. The water is then discharged as per the NPDES permit.

SAMPLING NARRATIVE

The Quality Assurance Project Plan (QAPP) tasked the sampling team to collect fourteen sediment/sludge samples out of the impoundments for laboratory analysis. The sludge samples were analyzed for TCLP VOA, TCLP ABN, TCLP Metals, and EP-Tox Metals. In order to try to maximize the potential of only 14 sampling locations over such a large area, it was decided to use a screening device to help pinpoint the fourteen locations. A Dexsil Soil Chlorinator Kit was used to determine the presence of any chlorinated organics in the sludge samples. Approximately 60 screening samples were taken at various locations from all the impoundments. The screening samples were collected on Tuesday January 12, in 4oz. wide mouth jars. The samples were screened using the Dexsil Kit on Wednesday January 13. Nine of the samples screened indicated levels above background. Those nine locations, along with five others were targeted for sampling in both the upper and lower units (See Attachment B for Sampling Locations).

Each sampling location was monitored with an Organic Vapor Analyzer (OVA), prior to sampling, to determine the level of Personal Protective Equipment (PPE) needed to safely collect the sample. All sampling was done in level D PPE.

The sludge samples were collected using extendable poles with pyrex beakers attached to the end of the poles. The beakers were lowered into the impoundments, and the sludges were scooped out, and transferred from the beaker into the sample containers. All sampling equipment was decontaminated and wrapped in plastic in the EPA Laboratory in Dallas prior to the inspection. After collection, the sample containers were decontaminated, placed in coolers with ice, and shipped to the EPA Laboratory in Houston for analysis. Copies of the Chain of Custody forms are included with this report (See Attachment C).

Quality Assurance/Quality Control (QA/QC) samples consisted of a trip blank, a field blank, and an equipment rinsate. Deionized water was transported from the Dallas lab in 5 gallon carboys for

use in collecting the QA/QC samples. The trip blank was collected in the Dallas lab just prior to leaving on the inspection.

Sample collection began at 10:05 hours on January 14, 1993. The sampling team was divided into two groups of three people each. One group was assigned the locations at the lower unit, and the other group was assigned the locations at the upper unit. Sampling was completed at 13:30 hours.

A short exit briefing was held on the morning of January 14, 1993, prior to the sampling. In attendance at the meeting were Richard Haggard of GC Environmental, Don Padfield of Simpson Paper, Carolyn Merritt of Champion Corporation, and Julie Clifford of GCWA. The EPA was represented by William Rhotenberry and Matt Andrus. William Rhotenberry went over the QAPP detailing the locations to be sampled. He also informed the group that only one set of split samples could be provided, so the group decided that only GC Environmental would receive sample splits, and that the data would be made available to the other parties involved. The meeting ended at 09:00 hours.

SAMPLING LOG

The following information is a short description of samples collected at McGinnes on January 14, 1993. Sample locations are defined by either a "U" for upper unit, or "L" for lower unit. The letter following the impoundment number is used to define the location within the impoundment, (See attachment B). EP-Tox analysis was done in addition to the TCLP Metals analysis on all the metals samples. (See attachment D for analytical results).

STATION #001	Trip Blank (DI water placed in two 40ml. vials and transported to McGinnes)
LOCATION	EPA Dallas Laboratory
DATE	01/11/93
TIME	0600
TAG NO.	VOA 6-017801, 802
STATION #017	Field Blank (DI water placed in sample containers under field conditions)
LOCATION	Decon Area
DATE	01/14/93
TIME	1030
TAG NO.	TCLP VOA 6-017862, 863
	TCLP ABN 6-017864, 865
	TCLP Metals, 6-017866
STATION #003	U 30 B
LOCATION	Impoundment #30
DATE	01/14/93
TIME	1017
TAG NO.	TCLP VOA, 6-017808, 809, 810,
	TCLP ABN, 6-017811, 812, 813,
	TCLP Metals, 6-017814, 815, 816

STATION #004	L 19 A
LOCATION	Impoundment #19
DATE	01/14/93
TIME	1005
TAG NO.	TCLP VOA, 6-017817, 818, 819
	TCLP ABN, 6-017820, 821, 822
	TCLP Metals, 6-017823, 824, 825
STATION #005	U 30 F
LOCATION	Impoundment #30
DATE	01/14/93
TIME	1041
TAG NO.	TCLP VOA, 6-017826
	TCLP ABN, 6-017827
	TCLP Metals, 6-017828
STATION #006	U 30 H
LOCATION	Impoundment #30
DATE	01/14/93
TIME	1050
TAG NO.	TCLP VOA, 6-017829
	TCLP ABN, 6-017830
	TCLP Metals, 6-017831
STATION #007	U 27 C
LOCATION	Impoundment #27
DATE	01/14/93
TIME	1155
TAG NO.	TCLP VOA, 6-017832
	TCLP ABN, 6-017833
	TCLP Metals, 6-017834
STATION #008	U 20 B
LOCATION	Impoundment #20
DATE	01/14/93
TIME	1148
TAG NO.	TCLP VOA, 6-017835
	TCLP ABN, 6-017836
	TCLP Metals, 6-017837
STATION #009	U 27 C
LOCATION	Impoundment #27
DATE	01/14/93
TIME	1113
TAG NO.	TCLP VOA, 6-017838
	TCLP ABN, 6-017839
	TCLP Metals, 6-017840
STATION #010	L 17 B
LOCATION	Impoundment #17
DATE	01/14/93

TIME	1050
TAG NO.	TCLP VOA, 6-017841
	TCLP ABN, 6-017842
	TCLP Metals, 6-017843
STATION #011	L 15 A
LOCATION	Impoundment #15
DATE	01/14/93
TIME	1045
TAG NO.	TCLP VOA, 6-017844
	TCLP ABN, 6-017845
	TCLP Metals, 6-017846
STATION #012	L 13 B
LOCATION	Impoundment #13
DATE	01/14/93
TIME	1045
TAG NO.	TCLP VOA, 6-017847
	TCLP ABN, 6-017848
	TCLP Metals, 6-017849
STATION #013	L 10 A
LOCATION	Impoundment #10
DATE	01/14/93
TIME	1120
TAG NO.	TCLP VOA, 6-017850
	TCLP ABN, 6-017851
	TCLP Metals, 6-017852
STATION #014	L 9 A
LOCATION	Impoundment #9
DATE	01/14/93
TIME	1110
TAG NO.	TCLP VOA, 6-017853
	TCLP ABN, 6-017854
	TCLP Metals, 6-017855
STATION #015	L 3 B
LOCATION	Impoundment #3
DATE	01/14/93
TIME	1255
TAG NO.	TCLP VOA, 6-017856
	TCLP ABN, 6-017857
	TCLP Metals, 6-017858
STATION #016	L 4 B
LOCATION	Impoundment #4
DATE	01/14/93
TIME	1235
TAG NO.	TCLP VOA, 6-017859
	TCLP ABN, 6-017860
	TCLP Metals, 6-017861

STATION #018	Equipment Rinsate for Beakers
LOCATION	Decon Area
DATE	01/14/93
TIME	1010
TAG NO.	TCLP VOA, 6-017867, 868
	TCLP ABN, 6-017869, 870
	TCLP Metals, 6-017871

ATTACHMENT A

LIST OF WASTES RECEIVED AT KASHBURN TUNNEL FACILITY GULF COAST WASTE DISPOSAL AUTHORITY NPDES PERMIT NO. TX 0052591

1. Simpson Pasadena Paper Company
   Industrial wastewaters generated by a Pulp, Paper and Paperboard paper mill (SIC 2621) that produces Fine Bleached Kraft paper and Bleached Kraft pulp. This wastewater stream constitutes about 67% of the total flow to this facility.

2. Lyondell Petrochemical Company
   Industrial wastewaters generated by a Petroleum Refinery and Petrochemical Plant (SIC 2911) that produces gasoline, kerosene, various fuels, natural gas liquids, coke, numerous chemical products and feedstocks, residual fuel and lube oils. This wastewater stream constitutes about 18% of the total flow to this facility.

3. Air Products Manufacturing Corporation
   Industrial wastewaters generated by an OCPSF petrochemical plant (SIC 2869, 2865 & 2873) that produces Dinitrotoluene (DNT), Toluenediamine (TDA) and Nitric Acid. This wastewater stream constitutes about 2% of the total flow to this facility.

4. AES Deepwater, Inc.
   Industrial wastewaters generated by a Co-generation Plant (SIC 4961 & 4911) that produces Process Steam, Electric Power, and chemical gypsum. This wastewater stream constitutes about 2% of the total flow to this facility.

5. Crown Central Petroleum Corporation
   Industrial wastewaters generated by a Petroleum Refinery (SIC 2911) that produces gasoline, Furnace oil, raffinate, slurry oil, petroleum coke, liquified petroleum gas (LPG) and MTBE. This wastewater stream constitutes about 5% of the total flow to this facility.

6. GATX Terminals Corporation - Galena Park Plant
   Industrial wastewaters generated by a Bulk Liquid Public Storage Terminal (SIC 4226) that handles numerous petroleum based liquids and chemicals. This wastewater stream constitutes about 0.5% of the total flow to this facility.

7. GATX Terminals Corporation - Pasadena Plant
   Industrial wastewaters generated by a Petroleum Bulk Station and Liquid Storage Terminal (SIC 5171) that handles numerous petroleum based liquids and chemicals. This wastewater stream constitutes about 1% of the total flow to this facility.

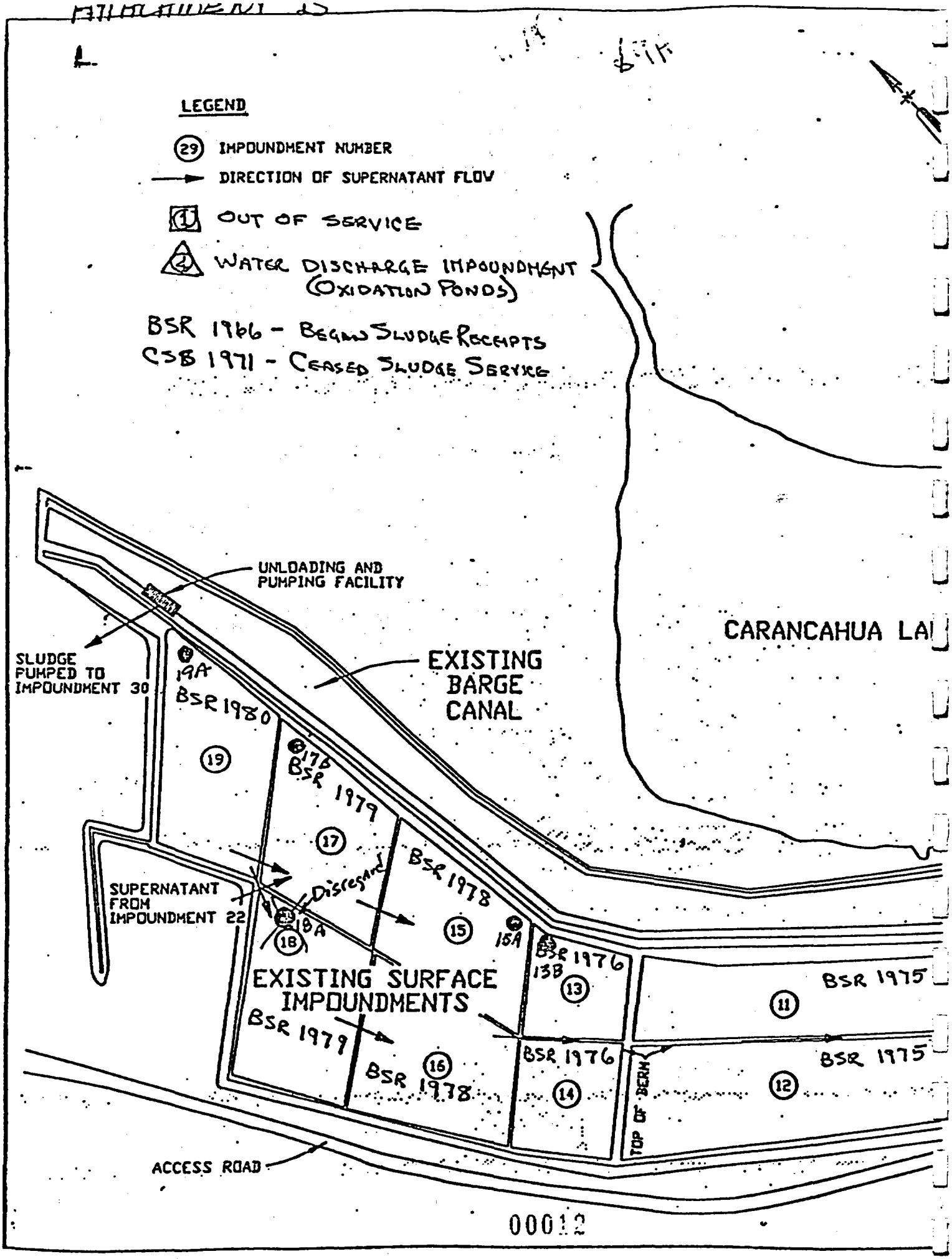
8. Mobay Synthetics Corporation
   Industrial wastewaters generated by an Organic Chemicals Plant (SIC 2869 & 2822) that produces Butadiene, Butylenes, Butanes, MTBE, Baypren and Maleic Anhydride. This wastewater stream constitutes about 0.2% of the total flow to this facility.

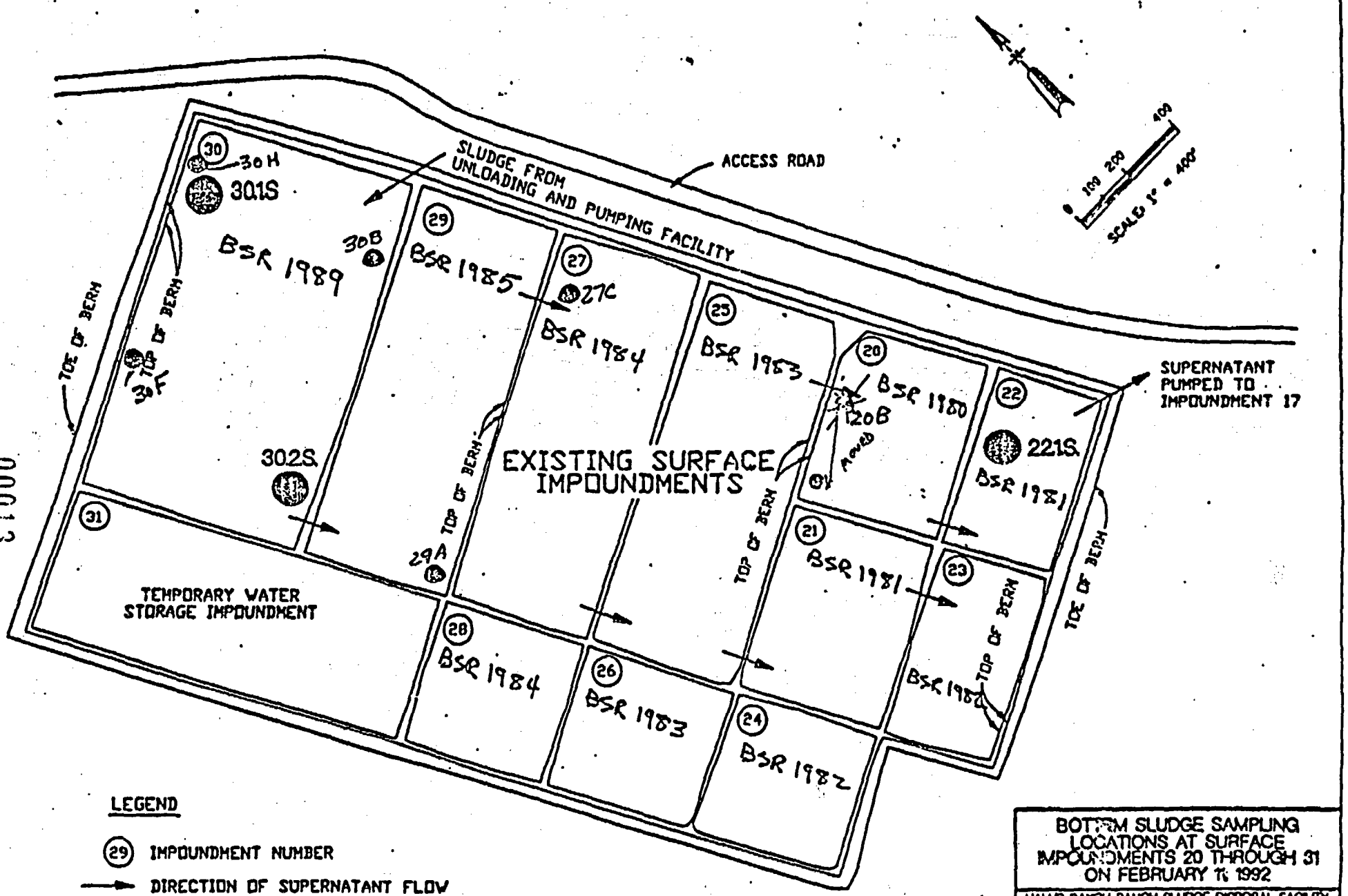
9. Goodyear Tire & Rubber Company
   Industrial wastewaters generated by a Rubber manufacturing Plant (SIC 2822) that produces NBR Crumb Rubber. This wastewater stream constitutes about 0.1% of the total flow to this facility.

10. City of Pasadena
    Domestic Sewage from a municipal source that constitutes about 4% of the total flow to this facility.

11. GCA Vince Bayou Facility
    Trucked-in domestic sewage generated by portable toilet operations that constitutes about 0.05% of the total flow to this facility.

ATTACHMENT 2





BOTTOM SLUDGE SAMPLING LOCATIONS AT SURFACE IMPOUNDMENTS 20 THROUGH 31 ON FEBRUARY 11, 1992

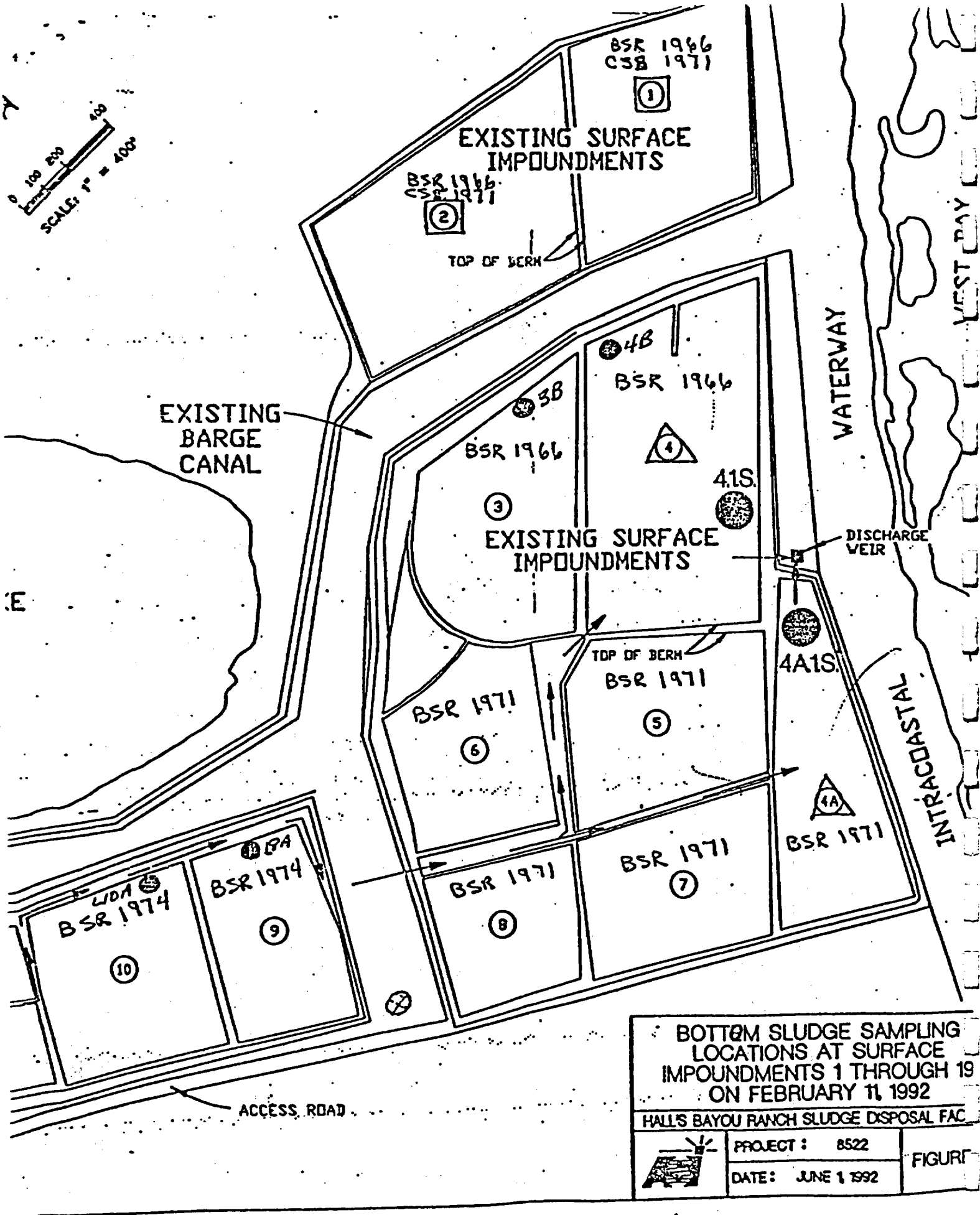
HALL'S BAYOU RANCH SLUDGE DISPOSAL FACILITY

PROJECT: 8522

DATE: JUNE 1, 1992

FIGURE 8

00013



BOTTOM SLUDGE SAMPLING LOCATIONS AT SURFACE IMPOUNDMENTS 1 THROUGH 19 ON FEBRUARY 11, 1992

HALLS BAYOU RANCH SLUDGE DISPOSAL FAC

PROJECT: 8522

DATE: JUNE 1 1992

FIGURE

Region 6

OFFICIAL
CHAIN OF CUSTODY RECORD

1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

PROJ. NO.

PROJECT NAME: McGinnis Industrial Maint.

SAMPLERS: (Signature) [signature]

STA. NO.	1993 DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCLP VOA	TCLP ABN	TCLP METALS	EP-TOX METALS			REMARKS
001	1-11			X	TRIP BLANK	2	✓						6-017801, 802
018	1-14	10:10			EQUIP. RINSATE	2	✓						6-017867, 868
						2		✓					6-017869, 870
						1			✓				6-017871
017		10:30			FIELD BLANK	2	✓						6-017862, 863
						2		✓					6-017864, 865
						1			✓				6-017866
004		10:[illegible]			L 19 A (TRIALE VOLUME)	3	✓						6-017817, 818, 819
						3		✓					6-017822, 821, 820
						3			✓				6-017823, 824, 825

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	1/14/93 1330				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
Shipped by:		Airbill Number:			

Distribution. White Accompanies Shipment; Pink to Coordinator Field Files; Green to Report; Yellow Returns with Warrant

ATTACHMENT

6- 0069

CHAIN OF CUSTODY RECORD

Dallas, Texas 75202-2733

PROJ. NO.

PROJECT NAME: McGinnis Maintenance

SAMPLERS: (Signature) [signature]

STA. NO.	1993 DATE 1-14	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCLP VOA	TCLP ARN	TCLP METALS				REMARKS TAG NOS.
003		10:51			U 30 B	3	L						6-017808, 809, 810
						3		L					6-017811, 812, 813
						3			L				6-017814, 815, 816
007		11:5[illegible]			U 27 C	1	L						6-017832
						1		L					6-017833
						1			L				6-017834
008		11:4[illegible]			U 20 B	1	L						6-017835
						1		L					6-017836
						1			L				6-017837
009		11:13			U 27 C	1	L						6-017838
						1		L					6-017839
						1			L				6-017840
015		12:5[illegible]			L 3 B	1	L						6-017856
						1		L					6-017857
						1			L				6-017858

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	1/14/93 1330				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
Shipped by:		Airbill Number:			

Distribution: White Accompanies Shipment; Pink to Coordinator Field Files; Green to Report; Yellow Returns with Warrant

6- 0087

ENVIRONMENTAL PROTECTION AGENCY
Region 6

OFFICIAL CHAIN OF CUSTODY RECORD

REGION 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

PROJ. NO.

PROJECT NAME: McGinnis Mainteinance

SAMPLERS: (Signature) Mary Stanton

STA. NO.	DATE 1993 1-14	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCLP VOA	TCLP DRO	TCLP METALS	REMARKS
										TAG No. 5
005		10:41		X	U 30 F	1	✓			G-017826
					"	1		✓		G-017827
					"	1			✓	G-017828
006		10:50			U 30 H	1	✓			G-017829
					"	1		✓		G-017830
					"	1			✓	G-017831

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	1/14/93 1530				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
Shipped by:		Airbill Number:			

Distribution: White Accompanies Shipment; Pink to Coordinator Field Files;
Green to Report; Yellow Returns with Warrant

Region 6

OFFICIAL CHAIN OF CUSTODY RECORD

1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

PROJ. NO.

PROJECT NAME: McGuire Maintenance

SAMPLERS: (Signature) [signature]

STA. NO.	1993 DATE 1/14	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCLP VOA	TCLP ARN	TCLP METALS				REMARKS TAG NOIS
010		10:30		X	L 17 B	1	✓						6-017841
						1		✓					6-017842
						1			✓				6-017843
011		10:45			L 15 A	1	✓						6-017844
						1		✓					6-017845
						1			✓				6-017846
012		10:45			L 13 B	1	✓						6-017847
						1		✓					6-017848
						1			✓				6-017849
013		11:00			L 10 A	1	✓						6-017850
						1		✓					6-017851
						1			✓				6-017852
014		11:10			L 9 A	1	✓						6-017853
						1		✓					6-017854
						1			✓				6-017855

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	1/19/93 1330				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
Shipped by:		Airbill Number:			

Distribution. White Accompanies Shipment; Pink to Coordinator Field Files; Green to Report; Yellow Returns with Warrant

6-0086

Region 6

OFFICIAL CHAIN OF CUSTODY RECORD

1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

PROJ. NO.

PROJECT NAME: McGinnis Maintenance

SAMPLERS: (Signature) [signature]

STA. NO.	DATE 1993 1-14	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCLP VOA	TCLP ABN	TCLP METALS				REMARKS TAG NO. 5
016	〃	12:35		〃	L 4 B	1	L						6-017859
〃	〃	〃		〃	〃	1		L					6-017860
〃	〃	〃		〃	〃	1			L				6-017861

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	01/14/93 1330				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
Shipped by:		Airbill Number:			

Distribution: White Accompanies Shipment; Pink to Coordinator Field Files; Green to Report; Yellow Returns with Warrant

6-0098

ATTACHMENT D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: February 18, 1993

SUBJECT: Notice of Intent to Dispose of Samples

FROM: Diana G. Ayers, Chief, Houston Branch; 6E-H

TO: Ragan Broyles, Chief,
Surveillance Branch; 6E-S

The Houston Laboratory is required to dispose of all hazardous wastes we generate in a manner consistent with RCRA regulations. This includes all samples received for analysis provided we find them to contain contaminants which classify them as RCRA hazardous wastes. In addition, any samples found to contain PCBs must be disposed of according to TCSA regulations.

I have included this memorandum in the final analytical report to serve as notice to the program that we have completed all analysis. If we have any of the original sample remaining after analysis is complete we will dispose of it within 90 days. Please note that even though original sample may be left over, it does not mean that a reanalysis of the sample may be requested since the sample has most likely exceeded its holding time and any subsequent analysis may not be valid.

If you have a need to hold these samples in custody longer than 90 days, please sign below and return this memorandum to me within the next 30 days. Also, state briefly your need to hold these samples in custody.

Thank you for your cooperation in this request.

MCGINNIS MAINTENANCE (3AGDER02)

Facility Name

Program Manager Date

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: February 18, 1993

SUBJECT: Laboratory Results for McGinnis Maintenance

FROM: Diana G. Ayers, Chief, Houston Branch; 6E-H

TO: Ragan Broyles, Chief, Surveillance Branch; 6E-S

ATTN: William Rhotenberry; 6E-SH

Attached are the analytical results for the subject site. Seventeen samples were received on January 14, 1993 to be analyzed for ABN TCLP, VOA TCLP, TCLP metals, and EPTOX metals.

Please note that there was insufficient sample volume to run both EPTOX metals and TCLP metals on sample number 3AGDER02-14. Therefore, only the TCLP metals were analyzed for this sample.

This is a final report.

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: February 17, 1993

SUBJECT: Organic Analysis of McGinnis Maintenance.

FROM: Michael Daggett, Chief (6E-HO)
Organic Section

TO: Diana Ayers, Chief (6E-H)
Houston Branch

Attached are the organic laboratory results for samples 3AGDER02-01 thru 3AGDER02-17. These samples were analyzed for ABN TCLP and VOA TCLP. There were no TCLP limits exceeded.

This is a final report.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM:

Date: February 16, 1993

Subject: Laboratory Results for McGinnis Maintenance

From: David C. Stockton, Chief, Inorganic Lab Section, (6E-HI)

To: Diana G. Ayers, Chief, Houston Branch, (6E-H)

Attached are laboratory results for the subject site. Sixteen (16) samples were received on January 14, 1993 to be analyzed for TCLP and EPTOX metals.

The laboratory numbers assigned were 3AGDER0201 through 3AGDER0216.

Insufficient sample volume was present for 3AGDER0214 to do both TCLP and EPTOX metals. TCLP was performed and reported for this sample.

This is a final report.

Attachments (23)

U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0201

Source: MCGINNIS MAINTENANCE

Site Description: STA#003, U30B

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:17

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3AGDER02-01 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-01 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-01	DATE RECEIVED:	14-Jan-93
SOURCE:	McGINNIS MAINTENANCE		
TYPE:	TCLP	DATE REPORTED:	16-Feb-93
ANALYSTS:	R. C., L. C.		

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.546	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

February 18, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3AGDER0202

Source: MCGINNIS MAINTENANCE

Site Description: STA#004, L19A

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:05

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments: -

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
EPM	EPTOX - METALS ONLY	METALS	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3AGDER02-02 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-02 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	2.6 (1)	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

(1) TWC Appendix 1, Table 1 Max. Leachable Concentration for Classification as Class 1 waste is 70 mg/l or 70,000 ug/l

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-02	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.532	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

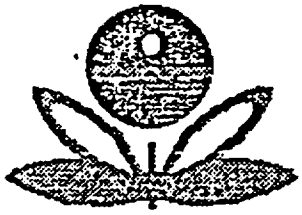
ND: LESS THAN DETECTION LIMIT

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-02	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	EPTOX	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.546	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT



U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0203

Source: MCGINNIS MAINTENANCE

Site Description: STA#005, U30F

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:41

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3AGDER02-03 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-03 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-03	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.055	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

February 18, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3AGDER0204

Source: MCGINNIS MAINTENANCE

Site Description: STA#006, U301I

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:50

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

5E-HL Sample NO:3AGDER02-04 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-04 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	3.9	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

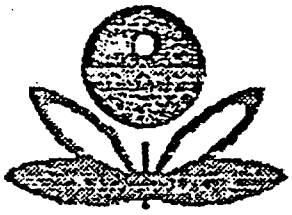
(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-04	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.352	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT



U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0205

Source: MCGINNIS MAINTENANCE

Site Description: STA#007, U27C

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 11:55

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments: .

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

E-HL Sample NO:3AGDER02-05 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-05 DATE REPORTED: 14-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	11.7 (3)	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	2.9 (2)	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

(2) TWC Appendix 1 limit 2.0 mg/l or 6000 ug/l
(3) Not listed in Appendix 1, Table 1

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-05	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.255	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

February 18, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3AGDER0206

Source: MCGINNIS MAINTENANCE

Site Description: STA#008, U20B

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 11:48

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

 Attachment: 6

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3AGDER02-06 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-06 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-06	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.343	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

February 18, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3AGDER0207

Source: MCGINNIS MAINTENANCE

Site Description: STA#009, U27C

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 11:13

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

ɜE-HL Sample NO:3AGDER02-07 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	4.9 (3)	6
3-Methylphenol &/or 4-Methylphenol	40.1 (3)	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

(3) Not listed in Appendix 1, Table 1

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-07 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-07	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.523	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0208

Source: MCGINNIS MAINTENANCE

Site Description: STA#010, L17B

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:50

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
EPM	EPTOX - METALS ONLY	METALS	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

E-HL Sample NO:3AGDER02-08 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	37.0 (3)	6
3-Methylphenol &/or 4-Methylphenol	152 (3)	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
**) ND = Not detected above the listed detection limit.

Analyst Notes: none

(3) Not listed in Appendix 1, Table 1

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-08 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	11.9 (4)	2
78-93-3	2-butanone	22.2 (3)	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	15.1 (2)	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

(3) Not listed in Appendix 1, Table 1
(4) Appendix 1 limit is 0.50 mg/l or 500 ug/l
(2) Appendix 1 limit is 6.0 mg/l or 6000 ug/l

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-08	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.523	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	0.018	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-08	DATE RECEIVED:	14-Jan-93
SOURCE:	McGINNIS MAINTENANCE		
TYPE:	EPTOX	DATE REPORTED:	16-Feb-93
ANALYSTS:	R. C., L. C.		

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.298	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	0.010	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0209

Source: MCGINNIS MAINTENANCE

Site Description: STA#011, L15A

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:45

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
EPM	EPTOX - METALS ONLY	METALS	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3AGDER02-09 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-09 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-09	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.487	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-09	DATE RECEIVED:	14-Jan-93
SOURCE:	McGINNIS MAINTENANCE		
TYPE:	EPTOX	DATE REPORTED:	16-Feb-93
ANALYSTS:	R. C., L. C.		

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.336	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0212

Source: MCGINNIS MAINTENANCE

Site Description: STA#014, L9A

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 11:10

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
EPM	EPTOX - METALS ONLY	METALS	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

SE-HL Sample NO:3AGDER02-12 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-12 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	24.8 (3)	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	5.9 (2)	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

(2) Appendix 1 limit is 6.0 mg/l ~ 6000 ug/l.
(3) Not listed in Appendix 1, Table 1

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-12	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.321	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-12	DATE RECEIVED:	14-Jan-93
SOURCE:	McGINNIS MAINTENANCE		
TYPE:	EPTOX	DATE REPORTED:	16-Feb-93
ANALYSTS:	R. C., L. C.		

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.321	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

February 18, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3AGDER0213

Source: MCGINNIS MAINTENANCE

Site Description: STA#015, L3B

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 12:55

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
EPM	EPTOX - METALS ONLY	METALS	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

E-HL Sample NO:3AGDER02-13 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-13 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-13	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.615	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

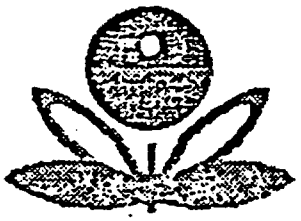
ND: LESS THAN DETECTION LIMIT

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-13	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	EPTOX	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.666	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT



U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0214

Source: MCGINNIS MAINTENANCE

Site Description: STA#016, L4B

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 12:35

Sample Type: SLUDGE

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3AGDER02-14 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-14 DATE REPORTED: 12-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: TCLP

TCLP VOLATILE COMPOUNDS BY METHOD 1311/624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	2.3 (1)	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)TCLP Sample Type: sample was leached into TCLP media per method 1311.
(**) ND = Not detected above the listed detection limit.

(1) Approx 1 limit is 70 mg/l = 70000 ug/l

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-14	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	0.472	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT

U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0215

Source: MCGINNIS MAINTENANCE

Site Description: STA#017, FIELD BLANK

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/14/93 10:30

Sample Type: WATER

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
ATC	TCLP PROCEDURE FOR ABNs	ORGANIC	COMPLETE	2/18/93
MTP	TCLP FOR METALS	METALS	COMPLETE	2/18/93
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

ORGANIC ANALYSIS DATA

6E-NL Sample NO:3AGDER02-16 Date Reported: 17-Feb-93

Analyst: M. HUMPHREY Sample Type:TCLP

TCLP SEMI-VOLATILE COMPOUNDS BY METHOD 1311/625*

units: ug/L

Compound Name	Results**	Det Limits
1,4-Dichlorobenzene	ND	3
2,4-Dinitrotoluene	ND	6
Hexachlorobenzene	ND	2
Hexachlorobutadiene	ND	5
Hexachloroethane	ND	3
2-Methylphenol	ND	6
3-Methylphenol &/or 4-Methylphenol	ND	6
Nitrobenzene	ND	2
Pentachlorophenol	ND	15
Pyridine	ND	20
2,4,5-Trichlorophenol	ND	6
2,4,6-Trichlorophenol	ND	6

(*) TCLP Sample Type indicates sample was leached into TCLP media per 1311.
(**) ND = Not detected above the listed detection limit.

Analyst Notes: none

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3AGDER02-16 DATE REPORTED: 16-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: water

TOTAL VOLATILE COMPOUNDS BY METHOD 624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	34.2 (3)	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)A normal 'TOTALS' analysis was performed; TCLP leaching not required.
(**) ND = Not detected above the listed detection limit.

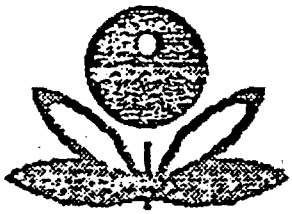
(3) Not listed in Appendix 1, Table 1

US EPA HOUSTON BRANCH

SAMPLE #:	3AGDER02-16	DATE	
SOURCE:	McGINNIS MAINTENANCE	RECEIVED:	14-Jan-93
TYPE:	TCLP	DATE	
ANALYSTS:	R. C., L. C.	REPORTED:	16-Feb-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	REGULATORY LIMIT	UNITS
ARSENIC	ND	0.01	5	MG/L
BARIUM	ND	0.01	100	MG/L
CADMIUM	ND	0.005	1	MG/L
CHROMIUM	ND	0.01	5	MG/L
LEAD	ND	0.03	5	MG/L
MERCURY	ND	0.004	0.2	MG/L
SELENIUM	ND	0.01	1	MG/L
SILVER	ND	0.02	5	MG/L

ND: LESS THAN DETECTION LIMIT



U.S. Environmental Protection Agency

Houston Branch Management System

February 18, 1993

Report for Sample Number 3AGDER0217

Source: MCGINNIS MAINTENANCE

Site Description: STA#001, TRIP BLANK

Date/Time Received: 1/14/93 13:30

Date/Time Collected: 1/11/93 10:10

Sample Type: WATER

Date Completed: 2/18/93

Comments:

Parameter	Description	Section	Status	Report Date
VTC	TCLP PROCEDURE FOR VOAs	ORGANIC	COMPLETE	2/18/93

 Attachment: 17

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: [illegible]R02-17 DATE REPORTED: 16-Feb-93

ANALYST: Ed O'Neill SAMPLE TYPE: water

TOTAL VOLATILE COMPOUNDS BY METHOD 624*

units: ug/L

CAS#	Compound Name	Results**	Det Limits
71-43-2	benzene	ND	2
78-93-3	2-butanone	685 (3)	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
67-66-3	chloroform	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
127-18-4	tetrachloroethene	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5

(*)A normal 'TOTALS' analysis was performed; TCLP leaching not required.
(**) ND = Not detected above the listed detection limit.

(3) Not listed in Appendix 1, Table 1.

APPENDIX R

Background Values For All Samples

Backgrounds - Sediments (SDG MFHL40)				
Constituent	SE-01 MFH-L52 mg/Kg [SQL]	SE-03 MFH-L54 mg/Kg [SQL]	3x Highest Background	Reference
ANTIMONY	ND Jv [1.3]	ND Jv [1.2]	N/A	
ARSENIC	1.2 [1.1]	3.9 [1.1]	11.7	
BARIUM	29.7 [0.17]	27.7 [0.16]	89.1	
BERYLLIUM	1 [0.03]	0.87 [0.03]	3	
CADMIUM	0.3 [0.08]	0.46 [0.08]	1.38	
CHROMIUM	16.2 Jv [0.2]	16.4 Jv [0.18]	49.2	
COBALT	4.2 [0.3]	7.4 [0.3]	22.2	
COPPER	9.2 [0.3]	7.3 [0.3]	27.6	
LEAD	13.9 Jv [0.5]	10.7 Jv [0.5]	41.7	
MANGANESE	150 Jv [0.1]	81.4 Jv [0.1]	450	
MERCURY	ND [0.07]	ND [0.06]	N/A	
NICKEL	10 J^ [0.4]	12.9 J^ [0.3]	38.7	
SELENIUM	ND [0.62]	ND [0.58]	N/A	
SILVER	0.47 [0.2]	0.63 [0.2]	1.89	
SODIUM	5480 [24.7]	4060 [24.7]	16440	
THALLIUM	ND [0.79]	ND [0.73]	N/A	
VANADIUM	25.1 [0.4]	28.6 [0.4]	85.8	
ZINC	33.9 Jv [0.2]	42.7 Jv [0.2]	128.1	
CYANIDE	ND [0.03]	ND [0.03]	N/A	
% SOLIDS	70.2	75.5		

Backgrounds for GW samples (SDG MFHL82)					
Constituent	GW-01 MFH-L88 ug/L [SQL]	GW-02 MFH-L89 ug/L [SQL]	GW-03 MFH-L90 ug/L [SQL]	3x Highest Background	Reference
ANTIMONY	ND [4.8]	ND [4.8]	ND [4.8]	N/A	
ARSENIC	ND Jv [4.1]	ND Jv [4.1]	5.7 Jv [4.1]	17.1	
BARIUM	76.1 [0.6]	67 [0.6]	111 [0.6]	333	
BERYLLIUM	ND [0.1]	ND [0.1]	ND [0.1]	N/A	
CADMIUM	2 [0.3]	ND [0.5]	ND [0.93]	6	
CHROMIUM	ND [0.7]	ND [0.7]	6.3 [0.7]	18.9	
COBALT	3.2 [1.1]	ND [1.1]	7.8 [1.1]	23.4	
COPPER	4.1 [1.1]	2.9 [1.1]	11.3 [1.1]	33.9	
LEAD	ND Jv [1.8]	ND Jv [1.8]	ND Jv [1.8]	N/A	
MANGANESE	3510 [0.4]	1010 [0.4]	5420 [0.4]	16260	
MERCURY	ND [0.1]	ND [0.1]	ND [0.1]	N/A	
NICKEL	3.5 J^ [1.3]	ND [1.3]	7.5 J^ [1.3]	22.5	
SELENIUM	ND Jv [3.3]	ND Jv [2.3]	ND Jv [2.3]	N/A	
SILVER	ND [0.8]	ND [0.8]	ND [0.8]	N/A	
SODIUM	5e+06 [93]	4e+06 [93]	5e+06 [93]	15000000	
THALLIUM	5.4 [2.9]	ND [2.9]	3.5 [2.9]	16.2	
VANADIUM	3 [1.4]	2.9 [1.4]	14.2 [1.4]	42.6	
ZINC	11.5 [0.8]	15 [0.8]	26.5 [0.8]	79.5	
CYANIDE	R [0.4]	R [0.4]	R [0.4]	R	

Notes: R = result unusable due to holding time exceedence.
J^ = result estimated and biased high due to a quality control problem.
Jv = result estimated and biased low due to a quality control problem.
ND = analyte was not detected at the sample quantitation limit.
[SQL] = sample quantitation limit.
N/A = not applicable.

Dioxin/Furan Results - Sediment Samples								
Analyte	SE-04 (ng/Kg) Source Sample [MDL]	SE-08 (ng/Kg) [MDL]	SE-11 (ng/Kg) [MDL]	SE-12 (ng/Kg) [MDL] (Dup SE-11)	SE-13 (ng/Kg) [MDL]	SE-14 (ng/Kg) [MDL]	SE-03 (ng/Kg) Bkgd	3x Highest Background
Total TCDF	150 [1.0]	8.2 [1.0]	75 [1.0]	63 [1.0]	1.1 [1.0]	17 [1.0]	ND [1.0]	N/A
Total TCDD	57 [1.0]	4.4 [1.0]	22 [1.0]	22 [1.0]	10 [1.0]	12 [1.0]	5.7 [1.0]	17.1
Total PeCDF	ND [4.8]	ND [4.7]	ND [4.8]	ND [4.9]	ND [5.0]	ND [4.9]	ND [4.9]	N/A
Total PeCDD	ND [4.8]	ND [4.7]	ND [4.8]	ND [4.9]	22 [5.0]	25 [4.9]	ND [4.9]	N/A
Total HxCDF	ND [4.8]	ND [4.7]	6.1 [4.8]	5.5 [4.9]	ND [5.0]	ND [4.9]	ND [4.9]	N/A
Total HxCDD	8.2 [4.8]	25 [4.7]	5.8 [4.8]	6.5 [4.9]	80 [5.0]	130 [4.9]	14 [4.9]	42
Total HpCDF	ND [4.8]	ND [4.7]	ND [4.8]	ND [4.9]	ND [5.0]	ND [4.9]	ND [4.9]	N/A
Total HpCDD	21 [4.8]	52 [4.7]	18 [4.8]	21 [4.9]	84 [5.0]	160 [4.9]	38 [4.9]	114
OCDF	ND [9.7]	ND [9.5]	ND [9.6]	ND [9.7]	ND [9.9]	ND [9.9]	ND [9.8]	N/A
OCDD	78 [9.7]	180 [9.5]	80 [9.6]	84 [9.7]	200 [9.9]	430 [9.9]	180 [9.8]	540
% Solids	73	66.1	75.9	73.4	48.2	48.8	69.1	

Note: ND = Not Detected at the reported method detection limit
Totals include 2,3,7,8-substituted isomers.

All GW samples ND