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January 2007 Ground Water Monitoring Report

Former Gulf States Creosoting Site
Hattiesburg, Mississippi

June 29, 2007

Project No. 21-04

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Executive Summary

Tronox LLC and its predecessor, Kerr-McGee Chemical, LLC (KMC LLC), have conducted investigations and remediation at the former Gulf States Creosoting site in Hattiesburg, Mississippi since 1996. During that time, site ground water quality and conditions have been characterized through multiple phases of investigation, which included the installation and sampling of 24 monitoring wells and over 30 temporary well points. The lateral extent of affected ground water was delineated and was also confirmed through eight initial quarterly monitoring events conducted from late 2001 through 2003. In 2004, KMC LLC requested and the Mississippi Department of Environmental Quality (MDEQ) approved a decrease to annual ground water monitoring frequency for the Gulf States Creosoting site.

Two separate and distinct areas of ground water contamination have been identified: the former Process Area/northeast drainage ditch area and the Fill Area. The shallow geology beneath these areas is significantly different and the shallow water-bearing zones beneath the two areas are not hydraulically connected. The two affected ground water zones are unused for any purpose in the Hattiesburg area. Furthermore, in 2002 the Hattiesburg City Council adopted an ordinance prohibiting the development and use of ground water resources within the City limits.

In 2003, KMC implemented remedial measures that included the removal and offsite disposal of materials constituting potential sources of ground water contamination (i.e., materials containing free product and creosote-saturated soils). In addition, remedial measures included containment and control elements designed to either reduce the potential for migration of constituents via the ground water pathway or to preclude the potential for infiltration/percolation of water through affected soils left in place.

The results of the initial eight quarterly ground water monitoring events and subsequent annual monitoring indicate that constituent concentrations in both affected areas have reached either steady-state or declining conditions. An evaluation of the ground water data also indicates that since source materials have been removed, conditions are generally favorable for natural attenuation of ground water constituents.

1.0 Introduction

This *Ground Water Monitoring Report* documents the results of ground water monitoring activities conducted at the former Gulf States Creosoting site in January 2007. Ground water monitoring was performed in accordance with the Mississippi Department of Environmental Quality (MDEQ)-approved *Ground Water Monitoring Plan* (Michael Pisani & Associates, June 25, 2001). Detailed site background, including information on previous ground water investigations and source area remediation, was provided in Section 1.0 of the *Ground Water Monitoring Report, Initial Eight Quarterly Events* (Michael Pisani & Associates, March 16, 2005). This background information is provided as Appendix A to this report.

2.0 Ground Water Monitoring Program

This section describes the ground water monitoring program for the site. Ground water sampling procedures are discussed in greater detail in Sections 3 and 4 of the *Ground Water Monitoring Plan (GWMP).*

2.1 Ground Water Monitoring Well Network

A network of 24 monitoring wells was installed to monitor ground water quality and conditions beneath the site. In a letter dated May 13, 2005, MDEQ approved KMC LLC's request to plug and abandon six wells that were upgradient of affected areas (MW-01, MW-03, MW-04, MW-05, MW-10 and MW-13). All but MW-13 were plugged and abandoned prior to the December 2005 monitoring event. MW-13 will be plugged and abandoned once access to the property can be obtained from the surface leaseholder.

Existing monitoring well locations are depicted on Figure 1-1. Well completion information is summarized in Table 2-1.

2.2 Summary of Ground Water Monitoring Activities

The January 2007 monitoring event was conducted during the week of January 8, 2007. Activities undertaken during the event included:

- Recorded static water levels in all existing monitoring wells;
- Purged wells to facilitate the collection of representative ground water samples;
- Collected samples for laboratory analyses; and
- Analyzed samples for site constituents and biogeochemical parameters.

Ground water monitoring activities are described in further detail in the following subsections.

2.2.1 Sample Containers and Preservatives

For each sampling event, clean, dedicated sample containers are provided by Tronox's contract laboratory, Lancaster Laboratories of Lancaster, Pennsylvania. The laboratory added the appropriate type and volume of chemical preservative to each sample container prior to shipping. The appropriate container type, preservative, and prescribed holding time for each analysis are summarized in Table 3-1 of the GWMP.

2.2.2 Water Level Measurement and Well Purging

Prior to purging, the water level in each well was measured to the nearest 0.01 foot with an electronic water level indicator. Water level data were used in conjunction with surveyed top-of-casing data to determine ground water elevations, flow direction, and hydraulic gradient. A discussion regarding ground water flow beneath the site is presented in Section 3.1 of this report.

Prior to sampling, wells were purged with an adjustable-rate, low-flow submersible pump and disposable polyethylene tubing. When necessary, the pumping rate was adjusted so that the purge rate was equal to the recharge rate (i.e., little or no drawdown was induced in the well). During purging, a multiprobe meter with a flow-through cell was used to monitor field parameters (i.e., pH, Eh, specific conductance, temperature, and dissolved oxygen). The approximate volume of water removed during purging was measured and recorded. Well purging was considered complete when field indicator parameters had stabilized to within 10 percent of the mean for three consecutive readings and less than 0.1 meter of drawdown was induced.

2.2.3 Sample Collection and Handling

Once well purging was complete, ground water samples were collected with the low-flow pump and dedicated tubing. In accordance with US EPA-prescribed procedures, the intake for the tubing was placed at the approximate midpoint of the screened interval. Ground water was discharged directly from the tubing into clean, laboratory-supplied sample containers. Samples for analyses of biogeochemical analysis were collected first, followed by samples for PAH analysis. Samples were placed immediately on ice in insulated coolers. Strict chain-of-custody documentation was maintained during sample collection, transport, and laboratory analysis.

Samples were packaged in a manner that minimized the potential for leakage or breakage. Sample coolers were delivered to the analytical laboratory via overnight courier. The temperature of the samples was recorded upon receipt at the laboratory.

2.2.4 Chain-of-Custody Control

Chain-of-custody forms were utilized to document sample custody from collection through analysis. Custody forms contain the following information:

- Sample identification number;
- Sampler's printed name and signature;
- Date and time of sample collection;
- Sample matrix;
- Analyses requested;
- Chemical preservatives; and
- Signatures of individuals in possession of the samples at any time.

The sampler retained one copy of each chain-of-custody form. Two copies of each form were shipped to the laboratory inside the sample coolers. Chain-of-custody seals were placed on each cooler to prevent tampering with the samples. Samples remained in the physical possession of the sample custodian, in direct view of the sample custodian, or stored in a secured area at all times.

2.2.5 Analytical Program

Samples were analyzed for polycyclic aromatic hydrocarbons (PAHs) by SW-846 Method 8310 and for biogeochemical parameters by appropriate methods to determine if conditions continue to be favorable for monitored natural attenuation (MNA) to occur. Data obtained from these analyses are used to document intrinsic remediation of ground water constituents and may, in the future, be utilized in the evaluation of solute fate and transport. Specific parameters for the analytical program are listed in Table 2-2.

3.0 Ground Water Monitoring Results

This section summarizes the results from the January 2007 ground water monitoring event. Information on ground water flow, a summary of laboratory analytical results, and an evaluation of monitored natural attenuation are provided in the following subsections.

3.1 Ground Water Flow Assessment

Prior to sampling, water level measurements were recorded in all wells in the monitoring well network. Water level data were used in conjunction with surveyed top-of-casing data to determine ground water elevations. A summary of ground water elevation data is presented in Table 3-1.

Ground water elevation data were then contoured to determine ground water flow direction and gradient beneath the site. Figure 3-1 shows the potentiometric surface beneath the former Process Area and offsite areas; the Fill Area potentiometric surface is shown on Figure 3-2.

The January 2007 ground water elevation data are consistent with the data from previous ground water investigations at the site. The data indicate that the shallow water-bearing zones beneath the former Process Area and the Fill Area are not hydraulically connected. Ground water flow within the sand channel beneath the former Process Area is eastward in the general direction of the Leaf River, generally at an extremely flat gradient. Ground water flow continues in an easterly direction beneath the adjacent residential area. The average hydraulic gradient between MW-4 and MW-22 is approximately 0.002 (i.e., 2 feet per thousand feet).

Ground water within the Fill Area sands flows westward toward Gordon's Creek and downstream along the creek. The average hydraulic gradient between MW-11 and MW-15 is approximately 0.005 (i.e., 5 feet per thousand feet).

3.2 Ground Water Analytical Results

Ground water analytical results from the initial eight quarterly sampling events and subsequent annual events are summarized in Table 3-2; laboratory reports are provided in Appendix B. Consistent with previous ground water monitoring results, the number and concentrations of PAH compounds are highest in wells within areas where creosote and creosote residuals were handled and/or deposited (i.e., the former Process Area, the Fill Area, and the northeast drainage ditch). The number and concentrations of PAHs decrease dramatically with distance from these areas. The approximate extent of affected ground water is shown on Figure 3-3.

Naphthalene continues to be the most prevalent PAH compound detected in site ground water and is the only constituent reported at levels exceeding MDEQ Tier 1 Target Remediation Goals (TRGs) in wells located outside of historical source areas. This is to be expected, as naphthalene: 1) is the most abundant single constituent of coal tar (*The*

Merck Index, 12th Edition, 1996); and 2) has the highest water solubility of any of the PAHs (31 milligrams per liter, or mg/L).

Charts showing naphthalene concentrations over time are provided in Appendix C. Initially, concentrations were plotted on a linear scale. Where necessary due to highly variable concentrations, concentrations were also plotted on a logarithmic scale. For comparative purposes, the MDEQ Tier 1 TRG for naphthalene (6.2 micrograms per liter, or µg/L) is shown on the graphs. However, as previously stated, shallow ground water in the Hattiesburg area is unused, and a City ordinance prohibits the development and use of ground water resources within the City limits.

In most wells, naphthalene concentrations were relatively consistent over the initial eight quarterly events and three subsequent annual events (i.e., concentrations remained within the same order of magnitude). Naphthalene concentrations in wells MW-17 and MW-19 continue to show decreasing trends, indicating that the source removal activities conducted in 2003 are showing positive effects. None of the wells showed significant increasing trends, nor were target constituents reported for the first time in any plume defining or "sentinel" wells.

Well MW-12 is located immediately downgradient (and downstream on Gordon's Creek) from the containment area defined by the Waterloo Barrier System installed at the Fill Area in April and May 2003. Almost immediately upon installation of the sheet pile barrier, the naphthalene concentration in MW-12 decreased from several hundred mg/L to nearly non-detectable concentrations. Results from MW-12 demonstrate that in addition to cutting off the potential release of DNAPL to Gordon's Creek, the Waterloo Barrier is serving to prevent affected ground water in the Fill Area from spreading laterally.

3.3 Natural Attenuation Evaluation

Ground water samples were analyzed for biogeochemical parameters in order to help determine if conditions continue to be favorable for monitored natural attenuation. As discussed in previous submittals, Tronox does not view MNA as a stand-alone ground water remedy. Tronox has performed site remediation that includes source removal/ containment and control measures that address potential sources of affected ground water in the former Process Area, the Fill Area, and along the northeast drainage ditch. Tronox does not view MNA to be a "no action" remedy, but rather an alternative that augments source removal/control measures in helping to achieve remedial objectives that are protective of human health and the environment.

The biogeochemical results are presented with the PAH data in Tables 3-2. The first step in the natural attenuation evaluation process is to determine if conditions in the affected aquifers are favorable for natural attenuation to occur. A "line of evidence" for this demonstration is developed by evaluating and comparing values for biogeochemical indicator parameters in samples collected from wells within the plume to those in samples from wells outside the plume. Table 3-3 presents the results of such a comparison for the initial eight quarterly monitoring events and two subsequent annual events.

According to the US EPA, trends that support occurrence of natural attenuation include the following:

- Dissolved oxygen concentrations below background;
- Nitrate concentrations below background;
- Iron (+2) concentrations above background;
- Sulfate concentrations below background; and
- Methane concentrations above background.

The dissolved oxygen readings from the January 2007 event were significantly different than those previously measured, indicating a meter malfunction for this parameter. The other MNA results summarized in Table 3-3 indicate that, with the exception of MW-2R, most wells within the former Process Area/northeast drainage ditch plume showed strong evidence or positive trend analysis indicating natural attenuation. The evaluation was less meaningful for the Fill Area because ever since installation of the Waterloo Barrier in 2003, well MW-12 is no longer really located within the Fill Area plume. Overall, however, the data demonstrate that conditions are favorable for natural attenuation to occur, and the overall decreasing naphthalene concentrations are an indication of such attenuation.

4.0 Future Ground Water Monitoring Activities

This section presents details regarding proposed modifications to the ground water monitoring program.

4.1 Monitoring Frequency

The analytical results from the first eight quarterly monitoring events did not indicate seasonal fluctuations in constituent concentrations or flow direction during the initial two-year monitoring period. Tronox will continue to sample site ground water on an annual basis. At the end of five years of annual monitoring (i.e., after the 2008 sampling event, Tronox will evaluate the data to determine if a change in monitoring frequency is warranted.

4.2 Monitoring Well Network

Well MW-09, which is located adjacent to Martin Luther King Avenue, was damaged during road construction in 2005; soil and other surface debris have apparently entered the well. In late 2006, Tronox requested MDEQ approval to abandon well MW-09. Subsequent to the January 2007 monitoring event, MDEQ issued a letter requiring that the well be either repaired or replaced. Tronox will plug and abandoned the existing well and install a replacement well prior to the next sampling event, which is scheduled for December 2007.

5.0 Summary and Conclusions

The following summary and conclusions are based on the results of ground water monitoring activities at the site to date:

1. Tronox has conducted ground water investigations at the site since 1996. Affected ground water is present in two separate and distinct areas. The extent of affected ground water in both areas has been delineated.

2. The affected shallow water-bearing zones are not used for any purpose in the Hattiesburg area. Furthermore, a 2002 City ordinance prohibits the development and use of ground water within the City limits.

3. Tronox has completed remedial measures that included the removal of potential sources of ground water contamination. In addition, containment measures (i.e., vertical and horizontal barriers) reduce the potential for migration of affected ground water and preclude infiltration/percolation of water through affected soils left in place.

4. Constituent concentrations in both affected areas have reached either steady-state or declining conditions. Furthermore, sampling results indicate that conditions are favorable for continued natural attenuation of ground water constituents.

5. Tronox plans to continue annual ground water monitoring at least through 2008. In addition, Tronox will plug and abandon well MW-09 and install a replacement well before the next monitoring event. Tronox will also plug and abandon well MW-13 when access can be obtained from the surface leaseholder.

Figures

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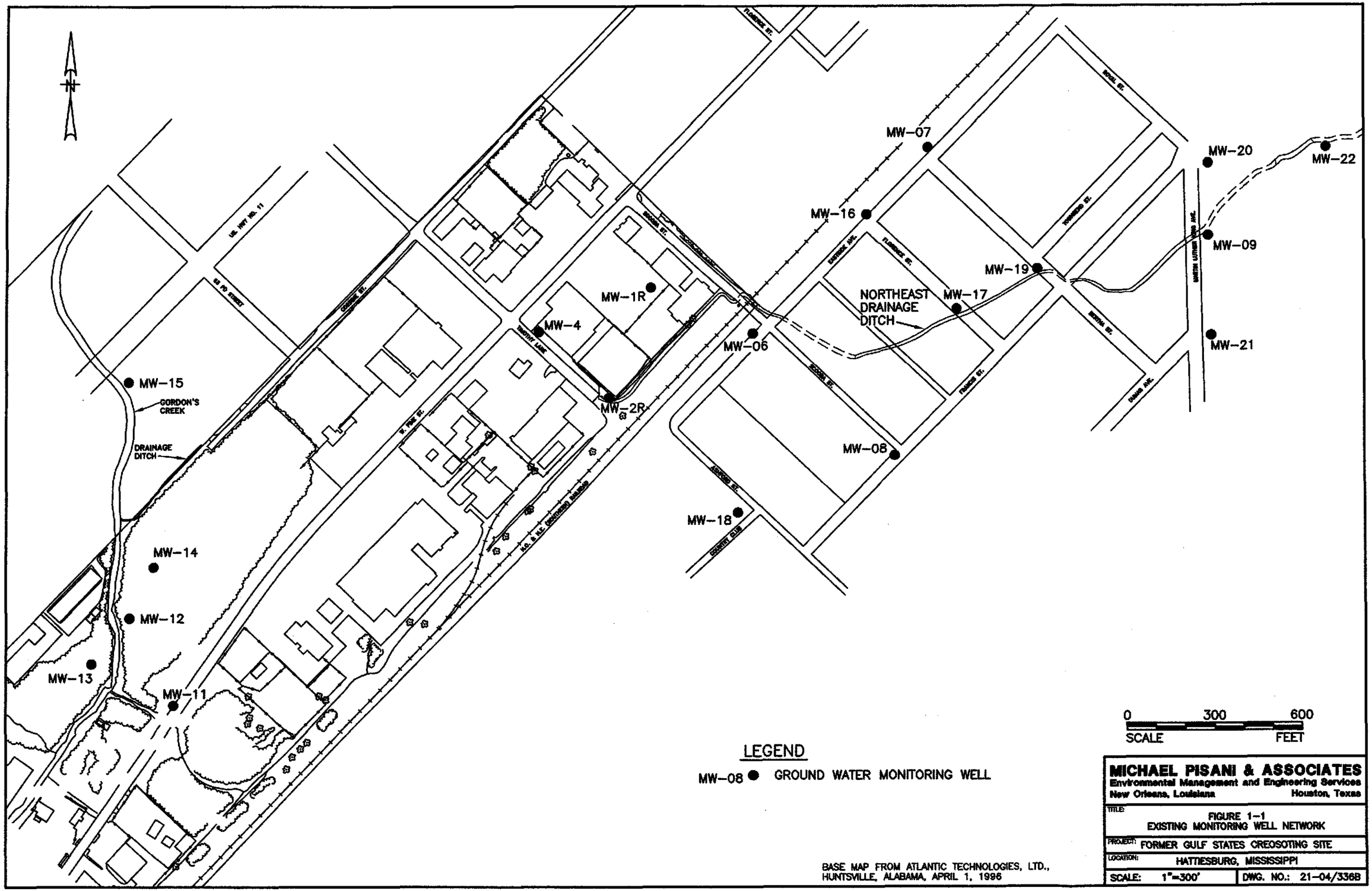
Former Gulf States Creosoting Site
Hattiesburg, Mississippi



BASE MAP FROM ATLANTIC TECHNOLOGIES, LTD., HUNTSVILLE, ALABAMA, APRIL 1, 1986

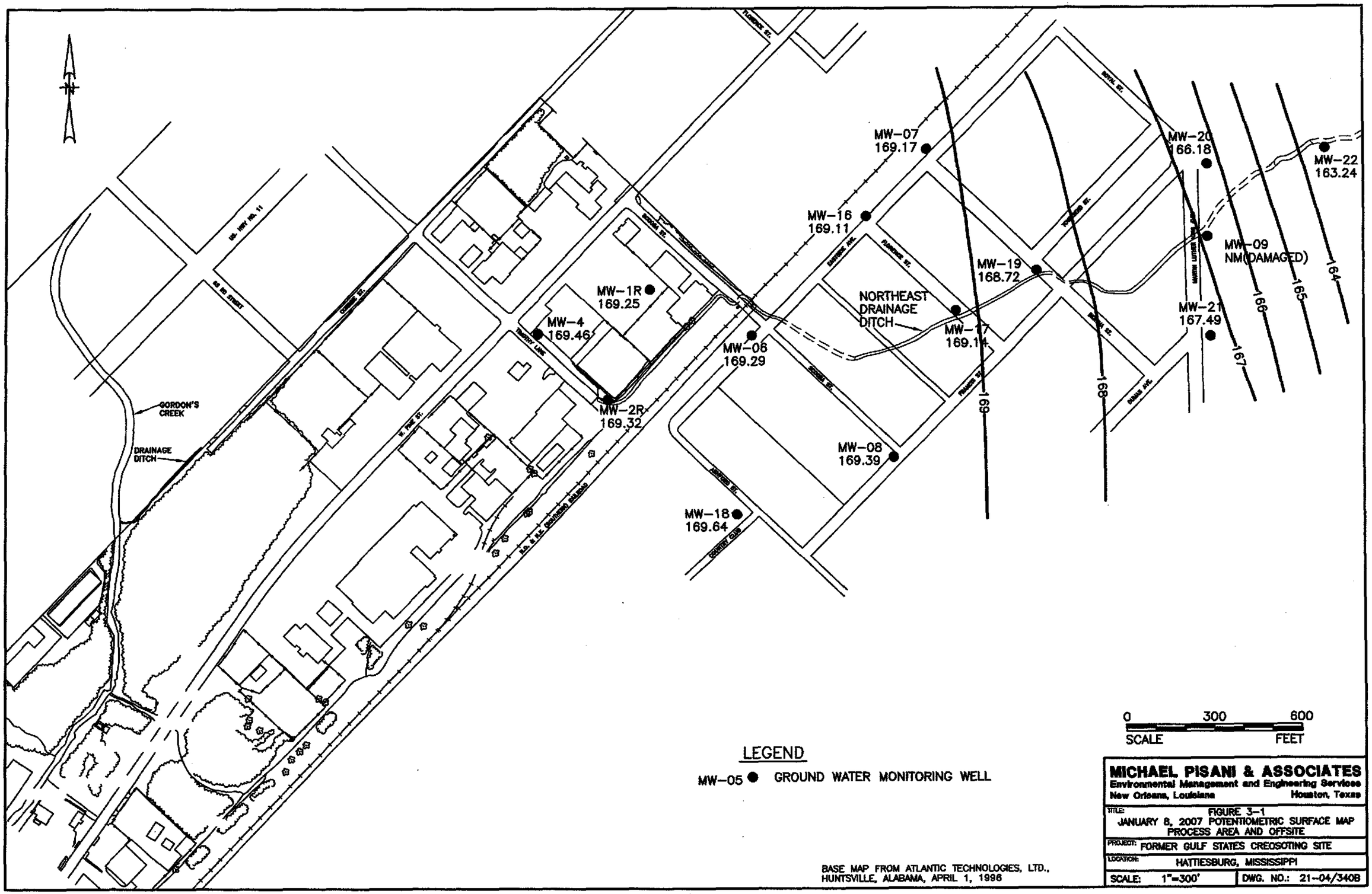
MICHAEL PISANI & ASSOCIATES
Environmental Management and Engineering Services
New Orleans, Louisiana Houston, Texas

TITLE: FIGURE 1-1
EXISTING MONITORING WELL NETWORK

PROJECT: FORMER GULF STATES CREOSOTING SITE

LOCATION: HATTIESBURG, MISSISSIPPI

SCALE: 1"=300' DWG. NO.: 21-04/336B



LEGEND

MW-05 ● GROUND WATER MONITORING WELL

BASE MAP FROM ATLANTIC TECHNOLOGIES, LTD., HUNTSVILLE, ALABAMA, APRIL 1, 1996

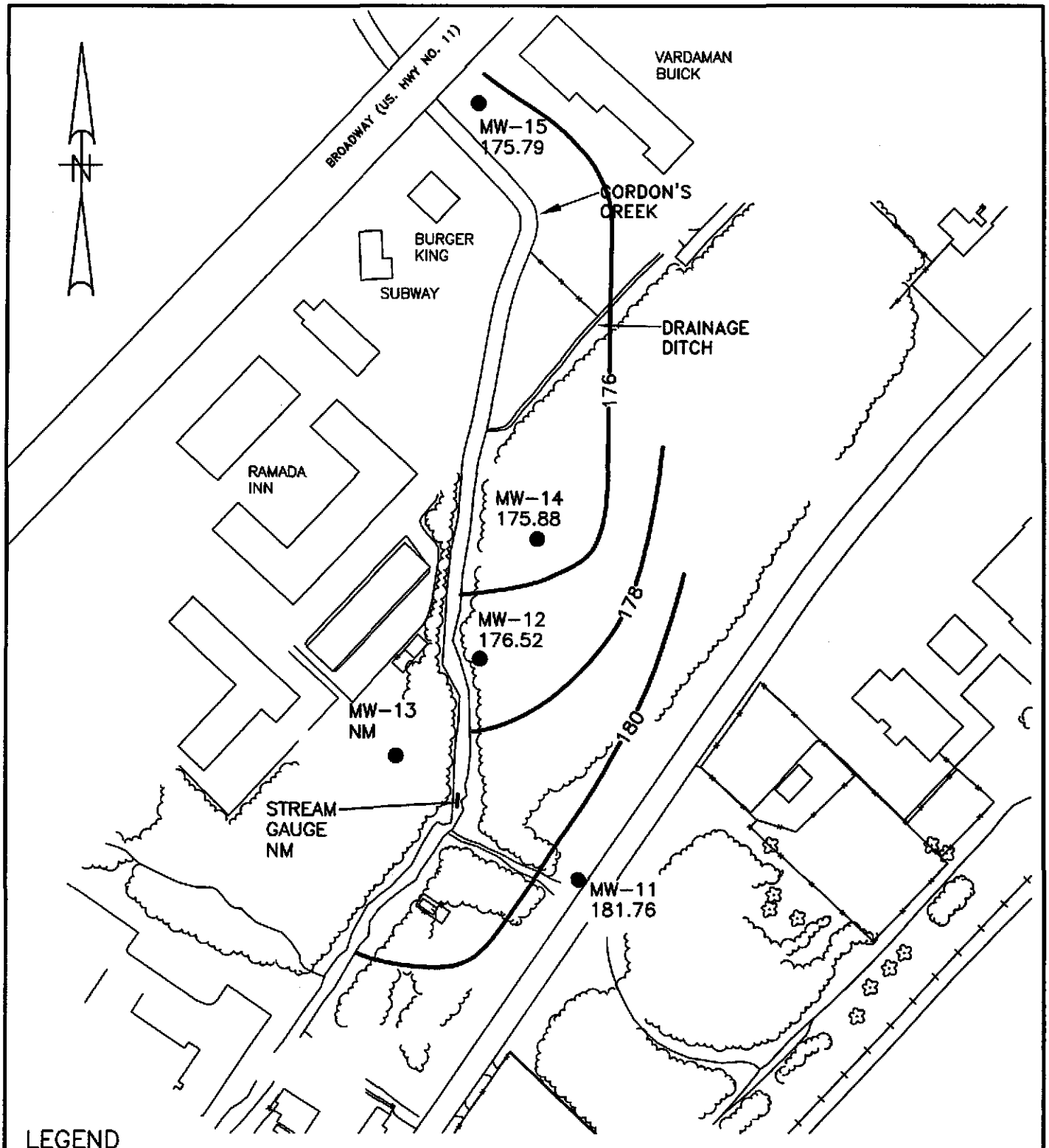
MICHAEL PISANI & ASSOCIATES
Environmental Management and Engineering Services
New Orleans, Louisiana Houston, Texas

TITLE: FIGURE 3-1
JANUARY 8, 2007 POTENTIOMETRIC SURFACE MAP
PROCESS AREA AND OFFSITE

PROJECT: FORMER GULF STATES CREOSOTING SITE

LOCATION: HATTIESBURG, MISSISSIPPI

SCALE: 1"=300' DWG. NO.: 21-04/340B



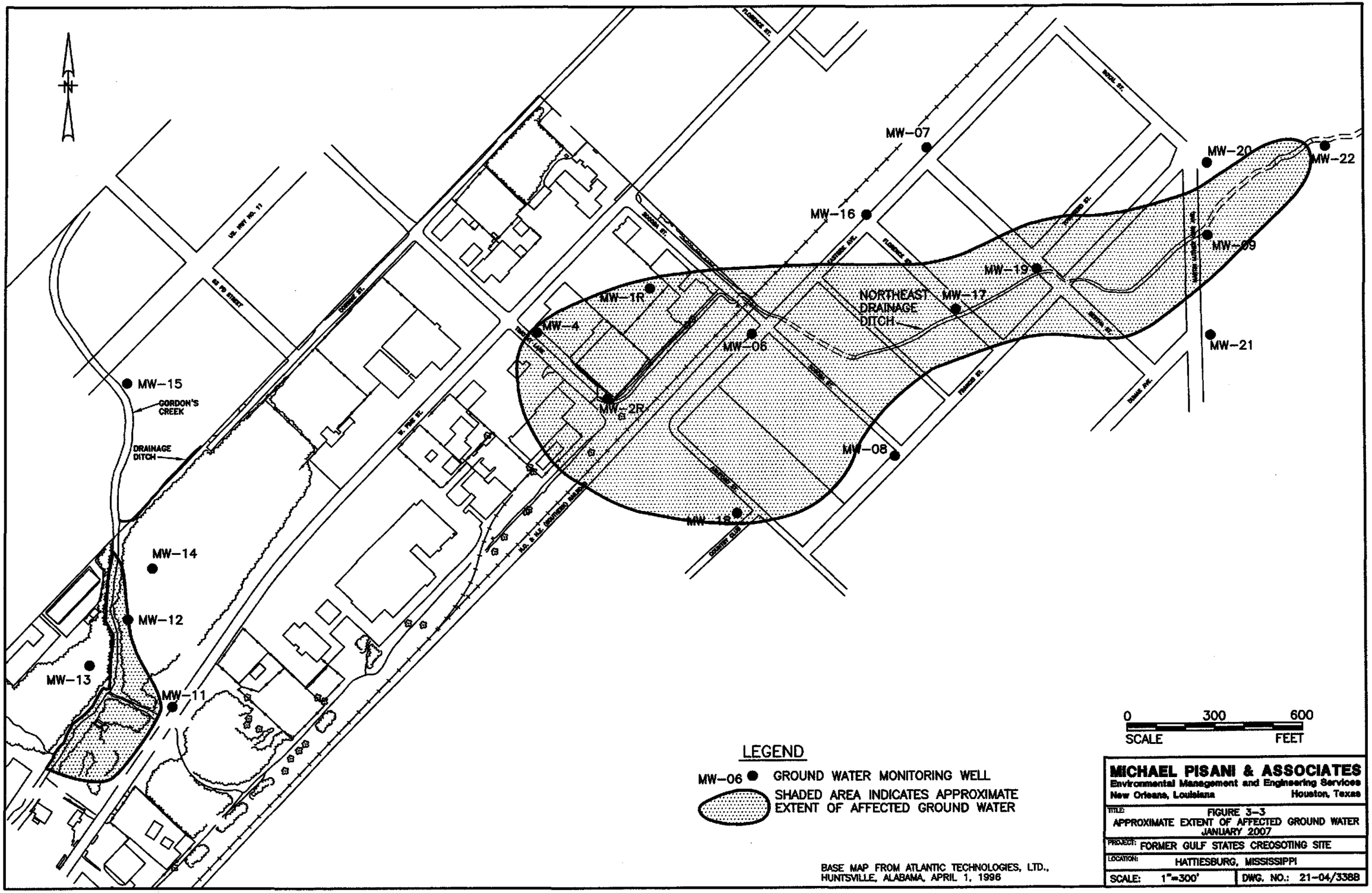
BASE MAP FROM ATLANTIC TECHNOLOGIES, LTD., HUNTSVILLE, ALABAMA, APRIL 1, 1996

MICHAEL PISANI & ASSOCIATES
Environmental Management and Engineering Services
New Orleans, Louisiana Houston, Texas

SCALE: 1"=200' | DWG. NO.: 21-04/339A

FIGURE 3-2
JANUARY 8, 2007 POTENTIOMETRIC SURFACE MAP
FILL AREA

FORMER GULF STATES CREOSOTING SITE
HATTIESBURG, MISSISSIPPI


MW-07
MW-20
MW-22
MW-16
MW-09
MW-19
MW-1R
NORTHEAST DRAINAGE DITCH
MW-17
MW-4
MW-06
MW-21
MW-15
GORDON'S CREEK
DRAINAGE DITCH
MW-2R
MW-08
MW-18
MW-14
MW-12
MW-13
MW-11
0
300
600
SCALE
FEET
LEGEND
MW-06 GROUND WATER MONITORING WELL
SHADED AREA INDICATES APPROXIMATE EXTENT OF AFFECTED GROUND WATER
BASE MAP FROM ATLANTIC TECHNOLOGIES, LTD., HUNTSVILLE, ALABAMA, APRIL 1, 1996
MICHAEL PISANI & ASSOCIATES
Environmental Management and Engineering Services
New Orleans, Louisiana
Houston, Texas
TITLE: FIGURE 3-3
APPROXIMATE EXTENT OF AFFECTED GROUND WATER
JANUARY 2007
PROJECT: FORMER GULF STATES CREOSOTING SITE
LOCATION: HATTIESBURG, MISSISSIPPI
SCALE: 1"=300'
DWG. NO.: 21-04/3388

Tables

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Former Gulf States Creosoting Site
Hattiesburg, Mississippi

Table 2-1
Summary of Monitoring Well Completion Information

Former Gulf States Creosoting Site
Hattiesburg, Mississippi

Well	Date Installed	Borehole Diameter (inches)	Well Diameter (inches)	Construction Material	Well Depth (ft. bls)	Top of Casing Elevation (ft. msl)	Screened Interval (ft. bls)	Screened Interval Elevation (ft. msl)
MW-1R	August 2000	12/8.25	2	Stainless Steel	42	189.06	37-42	147.06-152.06
MW-2R	August 2000	12/8.25	2	Stainless Steel	44	190.45	39-44	146.45-151.45
MW-4	May 1994	10.25	4	PVC	34	191.42	24-34	157.42-167.42
MW-06	September 1998	8.25	2	PVC	38	185.44	18-38	147.44-167.44
MW-07	September 1998	8.25	2	PVC	38	186.45	18-38	148.45-168.45
MW-08	September 1998	8.25	2	PVC	40	188.73	20-40	148.73-168.73
MW-09	September 1998	8.25	2	PVC	28	174.99	13-28	146.99-161.99
MW-11	September 1998	8.25	2	PVC	14	187.76	9-14	173.76-178.76
MW-12	September 1998	8.25	2	PVC	22	183.84	17-22	161.84-166.84
MW-13	September 1998	8.25	2	PVC	19	183.98	9-19	164.98-174.98
MW-14	November 2001	8.25	2	PVC	22	185.48	17-22	163.48-168.48
MW-15	November 2001	8.25	2	PVC	16	187.17	11-16	171.17-176.17
MW-16	November 2001	8.25	2	PVC	42	188.42	20-40	148.42-168.42
MW-17	November 2001	8.25	2	PVC	34	179.94	12-32	147.94-167.94
MW-18	November 2001	8.25	2	PVC	44	191.30	27-42	149.30-164.30
MW-19	November 2001	8.25	2	PVC	34	178.50	12-32	146.50-166.50
MW-20	November 2001	8.25	2	PVC	35	179.56	13-33	146.56-166.56
MW-21	November 2001	8.25	2	PVC	38	186.15	21-36	150.15-165.15
MW-22	November 2001	8.25	2	PVC	28	167.92	6-26	141.92-161.92

Note:
All elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88) and are reported with respect to mean sea level (msl).
bls - below land surface

Table 2-2
Analytical Parameters

Former Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons	Biogeochemical Parameters
Naphthalene	Nitrate
Acenaphthylene	Sulfate
Acenaphthene	Methane
Fluorene	Alkalinity
Phenanthrene	Chloride
Anthracene	Iron (total and dissolved)
Fluoranthene	
Pyrene	
Benzo(a)anthracene	Field Parameters
Chrysene	pH
Benzo(b)fluoranthene	Temperature
Benzo(k)fluoranthene	Specific conductance
Benzo(a)pyrene	Dissolved oxygen
Dibenzo(a,h)anthracene	Ferrous iron
Benzo(g,h,i)perylene	Oxidation-reduction potential (Eh)
Indeno(1,2,3-c,d)pyrene	

Table 3-1
Summary of Ground Water Elevation Data

Former Gulf States Creosoting Site
Hattiesburg, Mississippi

Well	Surveyed TOC Elev.	12/18/01 GW Elev.	3/18/02 GW Elev.	6/6/02 GW Elev.	9/16/2002 GW Elev.	12/16/2002 GW Elev.	3/24/2003 GW Elev.	6/23/2003 GW Elev.	10/6/2003 GW Elev.	12/13/2004 GW Elev.	12/12/2005 GW Elev.	1/8/2007 GW Elev.
MW-1R	189.06	170.65	173.31	170.46	169.11	173.29	174.75	171.55	169.78	170.06	168.29	169.25
MW-2R	190.45	170.70	173.59	170.70	169.55	173.50	175.16	172.10	170.22	170.08	168.63	169.32
MW-4	191.42	171.07	173.71	170.92	169.62	173.71	175.54	171.89	170.27	170.33	168.82	169.46
MW-06	185.44	170.59	173.13	170.24	168.86	173.14	174.53	171.38	169.49	169.90	168.11	169.29
MW-07	186.45	170.25	172.48	169.95	168.68	172.54	173.80	171.09	169.20	169.60	167.97	169.17
MW-08	188.73	170.63	171.14	169.98	168.63	173.25	174.51	171.18	169.23	169.78	167.92	169.39
MW-09	174.99	168.78	170.03	167.84	166.89	170.24	170.88	168.78	166.56	167.23	NM	NM
MW-11	187.76	181.26	181.30	180.14	178.96	181.44	181.87	180.47	180.75	181.53	180.58	181.76
MW-12	183.84	176.52	177.11	175.94	174.04	176.54	178.21	176.44	175.71	175.74	175.39	176.52
MW-13	183.98	177.53	178.77	176.68	175.73	178.58	179.98	176.86	NM	NM	NM	NM
MW-14	185.48	176.68	177.66	176.23	174.03	177.18	179.16	176.42	175.66	174.83	175.01	175.88
MW-15	187.17	175.52	175.79	175.27	175.03	176.05	176.46	175.87	175.43	175.57	175.04	175.79
MW-16	188.42	170.57	172.90	170.20	168.87	172.87	174.21	171.32	169.42	169.87	168.14	169.11
MW-17	179.94	170.69	172.82	169.92	168.49	172.89	174.15	171.13	169.22	169.64	168.00	169.14
MW-18	191.30	170.85	173.64	170.45	169.10	173.92	175.08	171.52	169.80	170.15	168.32	169.64
MW-19	178.50	170.23	172.24	169.55	168.28	172.25	173.40	170.85	168.74	169.25	167.56	168.72
MW-20	179.56	168.65	169.88	167.96	167.21	170.05	170.80	168.80	166.74	167.16	165.36	166.18
MW-21	186.15	169.12	170.64	168.20	167.15	170.92	171.67	169.13	167.21	167.85	166.55	167.49
MW-22	167.92	165.51	165.85	165.10	164.75	165.92	166.09	165.44	162.76	163.39	162.54	163.24

Notes:
Elevations referenced to the North American Vertical Datum of 1988 and are reported with respect to mean sea level.
NM - Water level not measured.

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-1R

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	MDL	March 2002 Result	MDL	June 2002 Result	MDL	September 2002 Result	MDL	December 2002 Result	MDL	March 2003 Result	MDL	June 2003 Result	MDL	October 2003 Result	MDL	December 2004 Result	MDL	December 2005 Result	MDL	January 2007 Result	MDL
Acenaphthene	µg/l	110j	11	10	0.8	4j	0.9	1.5j	0.8	ND(15)	2	ND(15)	2	4.2j	1.5	ND(17)	1.7	ND(15)	1.5	ND(16)	1.6	ND(18)	1
Acenaphthylene	µg/l	ND(110)	11	8	0.8	4j	0.9	0.86j	0.8	ND(15)	2	ND(15)	2	2.6j	1.5	ND(17)	1.7	ND(15)	1.5	ND(16)	1.6	ND(18)	1.6
Anthracene	µg/l	ND(110)	11	0.9	0.04	0.3	0.04	0.19j	0.04	0.17j	0.04	0.066j	0.04	0.3	0.038	ND(0.11)	0.022	0.074j	0.039	0.12j	0.039	0.29	0.045
Benz(a)anthracene	µg/l	ND(110)	11	0.06j	0.02	0.04j	0.02	0.028j	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.095)	0.019	ND(0.11)	0.022	0.023j	0.019	0.051j	0.02	0.044j	0.023
Benzo(a)pyrene	µg/l	ND(110)	11	ND(0.09)	0.02	0.03j	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.095)	0.019	ND(0.22)	0.043	0.021j	0.019	0.025j	0.02	ND(0.11)	0.023
Benzo(b)fluoranthene	µg/l	ND(110)	11	ND(0.2)	0.04	0.05j	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.65)	0.11	ND(0.19)	0.039	0.052j	0.039	ND(0.23)	0.045
Benzo(g,h,i)perylene	µg/l	ND(110)	11	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.09	ND(0.57)	0.095	ND(0.11)	0.022	ND(0.58)	0.096	ND(0.59)	0.098	ND(0.68)	0.11
Benzo(k)fluoranthene	µg/l	ND(110)	11	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.095)	0.019	ND(2)	0.41	ND(0.096)	0.019	0.025j	0.02	ND(0.11)	0.023
Chrysene	µg/l	ND(110)	11	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.076	ND(0.43)	0.087	ND(0.38)	0.077	0.079j	0.079	ND(0.45)	0.09
Dibenz(a,h)anthracene	µg/l	ND(110)	11	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.22)	0.043	ND(0.19)	0.039	ND(0.2)	0.039	ND(0.23)	0.045
Fluoranthene	µg/l	ND(110)	11	5	0.2	0.3	0.04	0.27	0.04	0.21	0.04	0.12j	0.04	0.25	0.038	0.15j	0.043	0.12j	0.039	0.58	0.039	1.6	0.045
Fluorene	µg/l	59j	11	0.7	0.04	2	0.2	0.93	0.4	0.68j	0.2	0.21j	0.2	2.6	0.17	0.93	0.19	0.36j	0.17	ND(0.79)	0.49	ND(0.90)	0.56
Indeno(1,2,3-cd)pyrene	µg/l	ND(110)	11	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.076	ND(0.43)	0.087	ND(0.38)	0.077	ND(0.39)	0.079	ND(0.45)	0.09
Naphthalene	µg/l	4700	110	250	0.9	110	1	36	1	22	1	2.2j	1	65	1.1	46	1.3	21	1.5	ND(12)	1.6	ND(14)	1.5
Phenanthrene	µg/l	46j	11	6	0.08	2	0.09	1.5	0.08	1.3	0.08	0.54	0.08	2.6	0.076	1.2	0.087	0.63	0.077	0.48	0.079	1	0.09
Pyrene	µg/l	ND(110)	11	0.4j	0.2	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.76)	0.17	ND(0.87)	0.19	ND(0.77)	0.17	0.42j	0.18	1.1	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	181	0.41	98.8	0.41	38.7	0.41	27.9	0.41	26.2	0.41	12.7	0.41	12.5	0.41	9.6	0.41	ND(2)	0.41	18.4	0.46	44.7	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41		0.41	ND(2)	0.41	0.14j	0.043	15.3	0.41	4.3	0.46	ND(2)	0.46
Chloride	mg/l	8.1	1.5	7.8	1.5	7.6	1.5	8.3	1.5	7.7	1.5	7.8	1.5	7.3	1.5	7.6	1.5	7	1.5	ND(2)	1.5	7.2	1
Iron (Total)	mg/l	18.1	0.038	8.89	0.038	4.06	0.0349	2	0.0349	1.4	0.0349	0.082j	0.035	1.39	0.0453	0.171j	0.0453	ND(0.2)	0.0495	0.153j	0.0378	ND (0.2)	0.0522
Iron (Dissolved)	mg/l	17.1	0.038	9.12	0.038	3.72	0.0349	2	0.0349	1.42	0.0349	ND(0.1)	0.035	1.28	0.0453	0.124j	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND (0.2)	0.0522
Methane	µg/l	2400	50	350	10	71	2	43	2	48	2	ND(5)	2	35	2	3.7j	2	2.2j	2	ND(5)	2	10	2
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	0.61	0.4	0.7	0.4	1.1	0.4	0.81	0.4	1.4	0.4	1.5	0.4	ND(0.5)	0.4	1.6	0.05
Sulfate	mg/l	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	1.8j	1.5	1.5j	1.5	ND(5)	1.5	2.7j	1.5	1.9j	0.3
Field Parameters																							
Dissolved Oxygen	mg/l	0.54		0.34		0.76		0.27		0.32		0.29		2.14		0.22		0.98		7.02*		4.32*	
Ferrous Iron	mg/l	8		5.1		5		4		2.6		0		1.4		0		0		0		0	
Oxidation-reduction Pot.	volts	14		-20		90		116		138		327		165		122		147.5		6		293	
pH	std. units	6.71		6.17		4.62		4.93		5.47		4.91		4.96		5.24		5.16		9.6*		5.8	
Specific Conductance	µS/cm	399		214		101		84		81		68		66		68		75		*		79	
Temperature	°C	23.1		24.26		24.8		24.74		24.23		23.92		24.75		32.46*		28.84		22.9		21.3	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than *quantitation limit* or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-2R

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001		March 2002		June 2002		September 2002		December 2002		March 2003		June 2003		October 2003		December 2004		December 2005		January 2007	
		Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL
Acenaphthene	µg/l	44	1	60	0.8	61	0.9	85	0.8	73	2	52	2	66	1.5	58	1.6	81	1.7	62	1.6	47	1
Acenaphthylene	µg/l	8j	1	120	0.8	150	0.9	150	0.8	130	2	150	2	120	1.5	100	1.6	130	1.7	100	1.6	ND(110)	110
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(2)	2	0.8	0.04	0.74	0.04	0.72	0.038	0.25	0.02	ND(10)	10	ND(1)	1	ND(0.50)	0.5
Benz(a)anthracene	µg/l	ND(10)	1	0.4	0.02	0.5	0.02	0.44	0.02	0.39	0.02	0.33	0.02	0.43	0.019	ND(0.1)	0.02	0.21	0.021	0.15	0.019	0.15	0.023
Benzo(a)pyrene	µg/l	ND(10)	1	0.02j	0.02	0.05j	0.02	0.025j	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.027j	0.019	0.049j	0.041	ND(0.1)	0.021	ND(0.097)	0.019	ND(0.11)	0.023
Benzo(b)fluoranthene	µg/l	ND(10)	1	0.05j	0.04	0.1j	0.04	0.067j	0.04	0.064j	0.04	0.057j	0.04	0.09j	0.038	ND(0.61)	0.1	0.045j	0.042	0.054j	0.039	0.064j	0.046
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.096	0.032j	0.02	ND(0.62)	0.1	ND(0.58)	0.097	ND(0.69)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	0.04j	0.02	0.07j	0.02	0.045j	0.02	0.043j	0.02	0.036j	0.02	0.064j	0.019	ND(2)	0.41	0.031j	0.021	0.031j	0.019	0.043j	0.023
Chrysene	µg/l	ND(10)	1	0.3j	0.08	0.4j	0.09	0.33j	0.08	0.35j	0.08	0.35j	0.08	0.38j	0.077	0.23j	0.081	0.32j	0.083	0.18j	0.078	0.20j	0.091
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.2)	0.041	ND(0.21)	0.042	ND(0.19)	0.039	ND(0.23)	0.046
Fluoranthene	µg/l	11	1	39	0.8	10	0.2	9.5	0.4	8.8	0.8	9.3	0.8	10	1.9	7.2	0.041	8.2	0.042	6.8	0.039	5.7	0.046
Fluorene	µg/l	35	1	10	0.2	50	1	56	2	60	3	66	3	63	8.6	51	9.1	64	9.4	52	9.7	54	11
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.41)	0.081	ND(0.42)	0.083	ND(0.39)	0.078	ND(0.46)	0.091
Naphthalene	µg/l	12000	200	8700	50	9000	50	9300	96	8900	120	11000	110	9700	58	8100	61	7300	83	6000	31	5800	30
Phenanthrene	µg/l	140	1	110	4	140	4	150	0.8	160	2	160	2	150	3.8	120	4.1	120	4.2	110	1.6	94	1.8
Pyrene	µg/l	2j	1	2	0.2	2	0.2	0.87	0.2	1.4	0.2	1.1	0.2	1.6	0.17	1.1	0.18	1.3	0.19	0.73j	0.17	0.70j	0.21
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	22.4	0.41	22.1	0.41	22	0.41	ND(2)	0.41	22.4	0.41	21.7	0.41	21.8	0.41	21.1	0.41	ND(2)	0.41	16.5	0.46	21.9	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	22.6	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	0.42	0.041	22.4	0.41		0.46	ND(2)	0.46
Chloride	mg/l	6.5	1.5	7	1.5	6	1.5	6.3	1.5	5.8	1.5	5.7	1.5	6.1	1.5	5.8	1.5	5.7	1.5	4.8	1.5	5.5	1
Iron (Total)	mg/l	0.0718j	0.038	0.0398j	0.035	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	0.0879j	0.0453	0.0578j	0.0453	ND(0.2)	0.0495	0.0813j	0.0378	0.120j	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	0.0481j	0.035	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	0.0689j	0.0378	0.100j	0.0522
Methane	µg/l	2.8j	2	2.2j	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	2.1j	2	ND(5)	2	2.3j	2
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4		0.4	ND(0.5)	0.25
Sulfate	mg/l	19.9	1.5	18.8	1.5	20.9	1.5	21.2	1.5	19.3	1.5	20.9	1.5	21.8	1.5	19.9	1.5	17.9	1.5	18.8	1.5	19	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.42		0.41		0.48		0.26		0.33		0.25		2.04		0.5		1.3		0.36		4.49*	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0.6	
Oxidation-reduction Pot.	volts	409		200		421		307		237		350		268		166		129		115		107	
pH	std. units	5.56		5.36		4.58		4.43		5.4		5		5.08		5.31		5.31		5.11		5.33	
Specific Conductance	µS/cm	102		108		107		113		113		113		116		113		106		*		115	
Temperature	°C	21.8		21.53		22.6		22.68		22.23		22.04		22.18		25.41*		23.99		22.39		22.5	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - Indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-4

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	December 2001 MDL	March 2002 Result	March 2002 MDL	June 2002 Result	June 2002 MDL	September 2002 Result	September 2002 MDL	December 2002 Result	December 2002 MDL	March 2003 Result	March 2003 MDL	June 2003 Result	June 2003 MDL	October 2003 Result	October 2003 MDL	December 2004 Result	December 2004 MDL	December 2005 Result	December 2005 MDL	January 2007 Result	January 2007 MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(15)	1.5	ND(17)	1.7	ND(16)	1.6	ND(16)	1.6	ND(18)	1
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(15)	1.5	ND(17)	1.7	ND(16)	1.6	ND(16)	1.6	ND(18)	1.6
Anthracene	µg/l	ND(10)	1	0.08j	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.1)	0.021	ND(0.2)	0.04	ND(0.2)	0.039	ND(0.22)	0.044
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(0.1)	0.021	ND(0.099)	0.02	ND(0.098)	0.02	ND(0.11)	0.022
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(0.21)	0.042	ND(0.099)	0.02	ND(0.098)	0.02	ND(0.11)	0.022
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.63)	0.1	ND(0.2)	0.04	ND(0.2)	0.039	ND(0.22)	0.044
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.096	ND(0.1)	0.021	ND(0.59)	0.099	ND(0.59)	0.098	ND(0.67)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(2)	0.41	ND(0.099)	0.02	ND(0.098)	0.02	ND(0.11)	0.022
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.42)	0.084	ND(0.4)	0.079	ND(0.39)	0.078	ND(0.44)	0.089
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.21)	0.042	ND(0.2)	0.04	ND(0.2)	0.039	ND(0.22)	0.044
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.21)	0.042	ND(0.2)	0.04	ND(0.2)	0.039	ND(0.22)	0.044
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.8)	0.2	0.24j	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	0.26j	0.19	0.18j	0.18	ND(0.78)	0.49	ND(0.89)	0.55
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.42)	0.084	ND(0.4)	0.079	ND(0.39)	0.078	ND(0.44)	0.089
Naphthalene	µg/l	110	1	ND(8)	0.9	ND(8)	0.9	59	1	4.5j	1	ND(12)	1	ND(12)	1.2	35	1.3	34	1.6	ND(12)	1.6	38	1.4
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	0.39j	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	0.35j	0.084	0.22j	0.079	ND(0.39)	0.078	0.16j	0.089
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	ND(0.84)	0.19	ND(0.79)	0.18	ND(0.78)	0.18	ND(0.89)	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	14.6	0.41	15.3	0.41	16	0.41	ND(2)	0.41	16.6	0.41	16	0.41	15.8	0.41	15.6	0.41	ND(2)	0.41	15.2	0.46	16.4	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	15.6	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.21)	0.042	15.2	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	7.7	1.5	8.4	1.5	7.5	1.5	7.9	1.5	7.4	1.5	7.4	1.5	7.6	1.5	7.2	1.5	7.4	1.5	6.8	1.5	7.1	1
Iron (Total)	mg/l	0.0529j	0.038	ND(0.1)	0.035	0.333	0.0349	0.51	0.0349	0.826	0.0349	0.038j	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.035	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Methane	µg/l	3.1j	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.25
Sulfate	mg/l	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	1.5j	1.5	ND(5)	1.5	ND(5)	1.5	1.9j	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.57		0.63		3.62		6.09		3.5		0.33		2.86		0.44		0.54		3.86		5.16	
Ferrous Iron	mg/l	0		0		1		0		0		0		0		0.1		0		0		0	
Oxidation-reduction Pot.	volts	403		288		639		221		308		402		276		141		144		171		283	
pH	std. units	5.67		5.44		3.94		5.43		5.54		5.05		5.11		5.38		5.28		5.33		5.17	
Specific Conductance	µS/cm	62		61		63		67		66		65		68		64		69		*		65	
Temperature	°C	24.2		23.24		24.7		24.84		24		24.08		24.38		32.85*		24.34		22.51		21.1	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-06

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	December 2001 MDL	March 2002 Result	March 2002 MDL	June 2002 Result	June 2002 MDL	September 2002 Result	September 2002 MDL	December 2002 Result	December 2002 MDL	March 2003 Result	March 2003 MDL	June 2003 Result	June 2003 MDL	October 2003 Result	October 2003 MDL	December 2004 Result	December 2004 MDL	December 2005 Result	December 2005 MDL	January 2007 Result	January 2007 MDL
Acenaphthene	µg/l	170	10	160	0.8	140	0.8	150	0.8	160	2	100	2	140	1.5	120	1.5	130	1.5	96	1.6	120	1
Acenaphthylene	µg/l	ND(100)	10	150	0.8	150	0.8	130	0.8	170	2	130	2	160	1.5	120	1.5	ND(770)	770	91	1.6	ND(160)	160
Anthracene	µg/l	ND(100)	10	7	0.2	6	0.04	6.6	0.04	8.6	0.4	5.7	0.04	8	0.77	ND(0.095)	0.019	6.9	0.039	4.5	0.039	7.1	0.045
Benz(a)anthracene	µg/l	ND(100)	10	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(0.095)	0.019	ND(0.096)	0.019	ND(0.099)	0.02	ND(0.11)	0.023
Benzo(a)pyrene	µg/l	ND(100)	10	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(0.19)	0.038	ND(0.096)	0.019	ND(0.099)	0.02	ND(0.11)	0.023
Benzo(b)fluoranthene	µg/l	ND(100)	10	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.67)	0.095	ND(0.19)	0.039	ND(0.2)	0.039	ND(0.23)	0.045
Benzo(g,h,i)perylene	µg/l	ND(100)	10	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.096	ND(0.095)	0.019	ND(0.58)	0.096	ND(0.59)	0.099	ND(0.68)	0.11
Benzo(k)fluoranthene	µg/l	ND(100)	10	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(2)	0.41	ND(0.096)	0.019	ND(0.099)	0.02	ND(0.11)	0.023
Chrysene	µg/l	ND(100)	10	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.38)	0.076	ND(0.39)	0.077	ND(0.39)	0.079	ND(0.45)	0.09
Dibenz(a,h)anthracene	µg/l	ND(100)	10	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.2)	0.039	ND(0.23)	0.045
Fluoranthene	µg/l	ND(100)	10	89	0.8	2	0.04	2.6	0.04	2.3	0.04	1.8	0.04	2.1	0.038	1.9	0.038	2.4	0.039	1.5	0.039	2.5	0.045
Fluorene	µg/l	120	10	2	0.04	92	1	92	0.2	120	2	94	3	110	3.5	86	8.6	91	8.7	59	9.9	94	11
Indeno(1,2,3-cd)pyrene	µg/l	ND(100)	10	*ND(0.4)*	*0.08*	*ND(0.4)*	*0.08*	*ND(0.4)*	*0.08*	*ND(0.4)*	*0.08*	*ND(0.4)*	0.08	ND(0.38)	0.077	ND(0.38)	0.076	ND(0.39)	0.077	ND(0.39)	0.079	ND(0.45)	0.09
Naphthalene	µg/l	9100	200	7300	50	6800	50	8200	1	8600	120	7600	57	8500	58	6400	57	7100	77	4100	32	6500	29
Phenanthrene	µg/l	79j	10	65	0.4	67	0.4	69	0.08	83	0.8	68	2	78	1.5	65	3.8	64	3.9	45	1.6	76	1.8
Pyrene	µg/l	ND(100)	10	0.6j	0.2	0.7j	0.2	1.7	0.2	0.77j	0.2	0.43j	0.2	0.74j	0.17	0.67j	0.17	0.78	0.17	45	0.18	0.82j	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	97.6	0.41	111	0.41	110	0.41	ND(2)	0.41	98.9	0.41	87.2	0.41	110	0.41	108	0.41	ND(2)	0.41	104	0.46	98.2	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	98.6	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	6.1	0.038	97.5	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	9.7	1.5	9.6	1.5	10.5	1.5	10.9	1.5	9.1	1.5	7.4	1.5	8.6	1.5	8.4	1.5	8	1.5	7.3	1.5	7.6	1
Iron (Total)	mg/l	20.6	0.038	23	0.038	21.7	0.0349	19.8	0.0349	21.4	0.0349	15.3	0.035	16.8	0.0453	18.8	0.0453	22	0.0495	26.9	0.0378	26.1	0.0522
Iron (Dissolved)	mg/l	20.8	0.038	23	0.038	20.2	0.0349	18.7	0.0349	20.1	0.0349	16.2	0.035	17.9	0.0453	18.9	0.0453	22	0.0495	26	0.0378	25.8	0.0522
Methane	µg/l	1200	50	1400	40	1400	40	1900	2	1900	50	1200	50	1900	100	1400	50	2500	50	1400	40	2300	500
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.25
Sulfate	mg/l	3j	1.5	4.9j	1.5	3.7j	1.5	4.1j	1.5	6	1.5	4.8j	1.5	2.7j	1.5	5.2	1.5	3.4j	1.5	3.6j	1.5	1.9j	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.35		0.26		0.41		0.17		0.33		0.11		2.68		0.3		0.18		0.37		5.67*	
Ferrous Iron	mg/l	7		5		3		4.5		5		4.2		6.6		5.2		4		4		0	
Oxidation-reduction Pot.	volts	58		-177		-116		-87		-58		-111		-32		*-98*		*-60.3*		*-154*		*-88*	
pH	std. units	6.19		6.18		4.92		5.46		6.03		6.81		5.37		6.08		5.82		5.78		5.77	
Specific Conductance	µS/cm	215		246		239		236		225		206		246		206		213		*		210	
Temperature	°C	22.1		21.58		22.5		22.74		22.67		21.2		22.74		32.19*		24.09		21.14		22	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-08

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001		March 2002		June 2002		September 2002		December 2002		March 2003		June 2003		October 2003		December 2004		December 2005		January 2007	
		Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(9)	0.9	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(16)	1.6	ND(16)	1.6	ND(15)	1.5	ND(16)	1.6	ND(17)	0.98
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(9)	0.9	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(16)	1.6	ND(16)	1.6	ND(15)	1.5	ND(16)	1.6	ND(17)	1.5
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.098)	0.02	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.22)	0.043
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.098)	0.02	ND(0.097)	0.019	ND(0.097)	0.019	ND(0.11)	0.022
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.2)	0.039	ND(0.097)	0.019	ND(0.097)	0.019	ND(0.11)	0.022
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.59)	0.098	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.22)	0.043
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.7)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.098)	0.02	ND(0.58)	0.096	ND(0.58)	0.097	ND(0.65)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.097)	0.019	ND(0.097)	0.019	ND(0.11)	0.022
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.078	ND(0.39)	0.076	ND(0.39)	0.078	ND(0.43)	0.087
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.039	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.22)	0.043
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.039	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.22)	0.043
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.78)	0.18	ND(0.77)	0.17	ND(0.78)	0.49	ND(0.87)	0.54
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.078	ND(0.39)	0.076	ND(0.39)	0.078	ND(0.43)	0.087
Naphthalene	µg/l	ND(10)	1	ND(8)	0.9	ND(9)	1	ND(8)	1	ND(12)	1	ND(11)	1	ND(12)	1.2	ND(12)	1.2	ND(12)	1.5	ND(12)	1.6	ND(13)	1.4
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.078	ND(0.39)	0.076	ND(0.39)	0.078	ND(0.43)	0.087
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.18	ND(0.78)	0.18	ND(0.77)	0.17	ND(0.78)	0.17	ND(0.87)	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	4.1	0.41	3	0.41	3.2	0.41	ND(2)	0.41	3.6	0.41	3.3	0.41	3.1	0.41	3	0.41	ND(2)	0.41	2.5	0.46	2.7	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	3.5	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.2)	0.039	3	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	15.5	1.5	22.5	1.5	24.2	1.5	21.9	1.5	18.6	1.5	25.5	1.5	28.6	1.5	35	3	26.1	1.5	33.8	3	12.2	1
Iron (Total)	mg/l	0.259	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	20.2	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Methane	µg/l	3.6j	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2
Nitrate Nitrogen	mg/l	1.19	0.4	1.47	0.4	1.75	0.4	1.77	0.4	1.19	0.4	1.2	0.4	1.2	0.4	1.5	0.4	1.5	0.4	2.1	0.4	1.9	0.25
Sulfate	mg/l	6.6	1.5	6.4	1.5	3.3j	1.5	3.9j	1.5	6.4	1.5	4j	1.5	3.4j	1.5	3.4j	1.5	3.1j	1.5	3.9j	1.5	4.2j	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	3.33		4.31		2.92		2.82		3.45		2.92		3.28		1.15		1.16		2.15		7.96*	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0	
Oxidation-reduction Pot.	volts	428		528		300		334		367		320		395		196		188		290		294	
pH	std. units	5.25		4.46		4.49		4.43		4.96		4.3		4.68		4.94		4.7		4.56		4.79	
Specific Conductance	µS/cm	88		114		105		100		95		150		126		390		112		*		137	
Temperature	°C	21.4		21.95		21.6		22.24		22.15		21.29		21.83		32.61*		23.87		19.06		21.2	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-09

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	MDL	March 2002 Result	MDL	June 2002 Result	MDL	September 2002 Result	MDL	December 2002 Result	MDL	March 2003 Result	MDL	June 2003 Result	MDL	October 2003 Result	MDL	December 2004 Result	MDL	December 2005 Result	MDL	January 2007 Result	MDL
Acenaphthene	µg/l	240j	27	230	0.8	310	0.9	280	0.8	230	2	190	2	330	1.6	220	1.6	200	1.6	Damaged		Damaged	
Acenaphthylene	µg/l	12	1	ND(8)	0.8	120	0.9	120	0.8	80	2	ND(55)	55	130	1.6	100	1.6	ND(160)	160	Damaged		Damaged	
Anthracene	µg/l	12	1	9	0.4	9	0.4	9.2	0.8	9.8	0.8	7.6	0.4	9.3	0.79	0.066j	0.02	8.9	0.39	Damaged		Damaged	
Benz(a)anthracene	µg/l	ND(11)	1	0.1	0.02	0.1	0.02	0.085j	0.02	0.078j	0.02	0.06j	0.02	0.082j	0.02	ND(0.1)	0.02	0.058j	0.019	Damaged		Damaged	
Benzo(a)pyrene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.2)	0.04	ND(0.097)	0.019	Damaged		Damaged	
Benzo(b)fluoranthene	µg/l	ND(11)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.61)	0.1	ND(0.19)	0.039	Damaged		Damaged	
Benzo(g,h,i)perylene	µg/l	ND(11)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.59)	0.1	ND(0.1)	0.02	ND(0.058)	0.097	Damaged		Damaged	
Benzo(k)fluoranthene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.097)	0.019	Damaged		Damaged	
Chrysene	µg/l	ND(11)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.081	ND(0.39)	0.078	Damaged		Damaged	
Dibenz(a,h)anthracene	µg/l	ND(11)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.039	Damaged		Damaged	
Fluoranthene	µg/l	14	1	110	2	12	0.4	10	0.8	10	0.8	9	0.4	11	0.79	10	0.4	9.1	0.39	Damaged		Damaged	
Fluorene	µg/l	160j	27	10	0.4	160	2	150	3	130	3	110	2	190	3.6	140	1.8	130	1.7	Damaged		Damaged	
Indeno(1,2,3-cd)pyrene	µg/l	ND(11)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.081	ND(0.39)	0.078	Damaged		Damaged	
Naphthalene	µg/l	2600	27	1000	9	1600	10	2400	19	1000	23	1100	11	1700	24	1400	12	1300	16	Damaged		Damaged	
Phenanthrene	µg/l	110	1	97	0.8	130	0.9	120	2	130	2	100	0.8	150	1.6	130	0.81	110	0.78	Damaged		Damaged	
Pyrene	µg/l	9j	1	6	0.2	6	0.2	7.6	0.2	5.2	0.2	3.3	0.2	5.1	0.18	4.2	0.18	5.7	0.17	Damaged		Damaged	
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	85.5	0.41	80	0.41	80.9	0.41	ND(2)	0.41	73	0.41	96.6	0.41	90.1	0.41	84.9	0.41	ND(2)	0.41	Damaged		Damaged	
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	80	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	7	0.04	118	0.41	Damaged		Damaged	
Chloride	mg/l	5.7	1.5	6.5	1.5	7	1.5	7.6	1.5	5.8	1.5	7	1.5	6.9	1.5	6.8	1.5	8.4	1.5	Damaged		Damaged	
Iron (Total)	mg/l	15.8	0.038	15.3	0.038	15.2	0.0349	16	0.0349	14.8	0.0349	17.3	0.035	15.8	0.0453	18	0.0453	26.8	0.0495	Damaged		Damaged	
Iron (Dissolved)	mg/l	15.5	0.038	15.5	0.038	14.8	0.0349	16.2	0.0349	15.2	0.0349	17.3	0.035	16.7	0.0453	17.6	0.0453	25.9	0.0495	Damaged		Damaged	
Methane	µg/l	590	40	380	10	480	10	340	10	230	10	750	20	580	20	450	20	1500	40	Damaged		Damaged	
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	Damaged		Damaged	
Sulfate	mg/l	3.4j	1.5	6.6	1.5	4j	1.5	ND(5)	1.5	5.3	1.5	9.6	1.5	6.4	1.5	13.8	1.5	ND(5)	1.5	Damaged		Damaged	
Field Parameters																							
Dissolved Oxygen	mg/l	0.46		0.34		0.4		0.22		0.17		0.16		4.07		0.42		1.69		Damaged		Damaged	
Ferrous Iron	mg/l	6		3		7		5		5.5		3		4		4.6		5		Damaged		Damaged	
Oxidation-reduction Pot.	volts	62		-179		28		-105		-72		-34		-70.5		-166		-73		Damaged		Damaged	
pH	std. units	6.25		6.23		4.73		5.09		6.2		4.77		5.68		5.96		6.34		Damaged		Damaged	
Specific Conductance	µS/cm	189		185		180		181		171		220		203		238		259		Damaged		Damaged	
Temperature	°C	21.6		19.18		21.5		24.27		22.17		18.95		22.03		23.73		28.55		Damaged		Damaged	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-11

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	MDL	March 2002 Result	MDL	June 2002 Result	MDL	September 2002 Result	MDL	December 2002 Result	MDL	March 2003 Result	MDL	June 2003 Result	MDL	October 2003 Result	MDL	December 2004 Result	MDL	December 2005 Result	MDL	January 2007 Result	MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(16)	1.6	ND(15)	1.5	ND(15)	1.5	ND(15)	1.5	ND(19)	1.1
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(16)	1.6	ND(15)	1.5	ND(15)	1.5	ND(15)	1.5	ND(19)	1.7
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.095)	0.019	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.24)	0.047
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.095)	0.019	ND(0.095)	0.019	ND(0.096)	0.019	ND(0.12)	0.024
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.19)	0.038	ND(0.095)	0.019	ND(0.096)	0.019	ND(0.12)	0.024
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.57)	0.095	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.24)	0.047
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.59)	0.1	ND(0.095)	0.019	ND(0.57)	0.095	ND(0.58)	0.096	ND(0.71)	0.12
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.095)	0.019	ND(0.096)	0.019	ND(0.12)	0.024
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.38)	0.077	ND(0.47)	0.095
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.24)	0.047
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.24)	0.047
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.78)	0.18	ND(0.76)	0.17	ND(0.76)	0.17	ND(0.77)	0.48	ND(0.95)	0.59
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.38)	0.077	ND(0.47)	0.095
Naphthalene	µg/l	ND(10)	1	ND(8)	0.9	ND(8)	1	ND(8)	1	ND(12)	1	ND(11)	1	ND(12)	1.2	ND(11)	1.1	ND(11)	1.5	ND(12)	1.5	ND(14)	1.5
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.38)	0.077	ND(0.47)	0.095
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.78)	0.18	ND(0.76)	0.17	ND(0.76)	0.17	ND(0.77)	0.17	ND(0.95)	0.21
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	0.68j	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	0.7j	0.41	0.56j	0.41	2.2	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.46	1.0j	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.19)	0.038	ND(2)	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	5.8	1.5	6.2	1.5	6.9	1.5	9.7	1.5	7.6	1.5	10.1	1.5	11.6	1.5	11	1.5	11.1	1.5	7.7	1.5	7.2	1
Iron (Total)	mg/l	0.676	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	0.149	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	0.0774j	0.0378	ND(0.2)	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	0.0788j	0.0495	0.0412j	0.0378	ND(0.2)	0.0522
Methane	µg/l	10	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	24	2	130	2	ND(5)	2
Nitrate Nitrogen	mg/l	0.56	0.4	0.44j	0.4	0.52	0.4	0.41j	0.4	0.41j	0.4	0.4j	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.25
Sulfate	mg/l	22.2	1.5	20.8	1.5	20.1	1.5	21.4	1.5	20.3	1.5	22.3	1.5	17.8	1.5	23.1	1.5	26.6	1.5	24.9	1.5	24.4	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	3.95		1.32		1.59		0.56		0.61		1.17		2		0.63		0.63		0.15		5.56*	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0	
Oxidation-reduction Pot.	volts	336		365		520		326		390		515		369		304		166.6		278		353	
pH	std. units	5.52		4.18		3.7		4.4		4.74		3.16		4.57		4.41		4.55		3.99		4.44	
Specific Conductance	µS/cm	81		86		85		97		94		98		109		112		117		*		107	
Temperature	°C	22.3		18.92		24.9		27.74		20.44		18.97		25.12		26.23		21.65		22.06		20.7	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-12

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	MDL	March 2002 Result	MDL	June 2002 Result	MDL	September 2002 Result	MDL	December 2002 Result	MDL	March 2003 Result	MDL	June 2003 Result	MDL	October 2003 Result	MDL	December 2004 Result	MDL	December 2005 Result	MDL	January 2007 Result	MDL
Acenaphthene	µg/l	130	1	100	0.8	85	0.9	100	0.8	29	2	16	2	4.5j	1.6	2.6j	1.7	ND(15)	1.5	ND(15)	1.5	ND(17)	0.95
Acenaphthylene	µg/l	16	1	81	0.8	63	0.9	97	0.8	17	2	14j	2	2.5j	1.6	2.3j	1.7	ND(15)	1.5	ND(15)	1.5	2.1j	1.5
Anthracene	µg/l	5j	1	5	0.04	4	0.04	4.4	0.04	1.7	0.04	1.4	0.04	0.08j	0.04	ND(0.11)	0.022	0.067j	0.038	ND(0.19)	0.2	ND(0.21)	0.042
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.11)	0.022	ND(0.095)	0.019	ND(0.095)	0.019	ND(0.11)	0.021
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.22)	0.043	ND(0.095)	0.019	ND(0.095)	0.019	ND(0.11)	0.021
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.65)	0.11	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.21)	0.042
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.59)	0.1	ND(0.11)	0.022	ND(0.57)	0.095	ND(0.57)	0.095	ND(0.63)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.095)	0.019	ND(0.095)	0.019	ND(0.11)	0.021
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.43)	0.087	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.42)	0.084
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.22)	0.043	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.21)	0.042
Fluoranthene	µg/l	1j	1	38	0.2	0.5	0.04	1.5	0.04	0.27	0.04	ND(0.2)	0.04	0.062j	0.04	0.053j	0.043	0.19j	0.038	ND(0.19)	0.038	ND(0.21)	0.042
Fluorene	µg/l	64	1	0.7	0.04	29	0.2	52	3	12	0.2	6.9	0.2	ND(0.78)	0.18	2.1	0.19	ND(0.76)	0.17	ND(0.76)	0.48	ND(0.84)	0.53
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.43)	0.087	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.42)	0.084
Naphthalene	µg/l	5600	100	2900	20	2600	20	4800	19	360	6	210	1	2.2j	1.2	12j	1.3	ND(11)	1.5	7.8j	1.5	3.7j	1.4
Phenanthrene	µg/l	41	1	28	2	25	2	34	2	7.4	0.08	3.9	0.08	0.15j	0.08	0.63	0.087	0.20j	0.076	0.12j	0.076	0.097j	0.084
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.9)	0.2	1.3	0.2	ND(0.8)	0.2	ND(0.8)	0.2	0.19j	0.18	ND(0.87)	0.19	ND(0.76)	0.17	ND(0.76)	0.17	ND(0.84)	0.19
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	50.8	0.41	53.5	0.41	52.8	0.41	ND(2)	0.41	48.5	0.41	51.7	0.41	50	0.41	50.9	0.41	ND(2)	0.41	53.5	0.46	54.6	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	49.6	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	0.47	0.043	49.1	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	3.3	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3	1.5	3.4	1.5	3.1	1.5	3	1.5	3.1	1.5	2.5	1.5	2.8	1
Iron (Total)	mg/l	1.83	0.038	1.89	0.038	1.72	0.0349	1.78	0.0349	1.58	0.0349	1.7	0.035	1.4	0.0453	1.3	0.0453	1.08	0.0495	1.32	0.0378	0.869	0.0522
Iron (Dissolved)	mg/l	1.62	0.038	1.85	0.038	1.66	0.0349	1.69	0.0349	1.45	0.0349	1.5	0.035	1.35	0.0453	1.18	0.0453	1.03	0.0495	0.985	0.0378	0.582	0.0522
Methane	µg/l	400	10	360	10	370	10	400	10	240	10	210	10	170	20	140	2	64	2	50	2	50	2
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.25
Sulfate	mg/l	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	ND(5)	1.5	2.1j	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.65		0.4		1.25		0.18		0.22		0.27		2.17		0.29		0.5		0.81		5.83*	
Ferrous Iron	mg/l	1.4		2.2		3.8		3		3.5		1.8		1.9		NM		1		0.8		0.6	
Oxidation-reduction Pot.	volts	269		-2.2		132		20.8		49.5		97.4		145		-20.6		33		-12		44	
pH	std. units	6.43		5.86		3.81		6.02		6.28		5.7		5.47		6.19		6.2		5.53		5.8	
Specific Conductance	µS/cm	97		110		107		110		108		111		107		109		103		*		108	
Temperature	°C	20.1		18.19		19		20.86		20.34		18.36		20.18		26.75*		24		20.22		20.3	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-14

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	December 2001 MDL	March 2002 Result	March 2002 MDL	June 2002 Result	June 2002 MDL	September 2002 Result	September 2002 MDL	December 2002 Result	December 2002 MDL	March 2003 Result	March 2003 MDL	June 2003 Result	June 2003 MDL	October 2003 Result	October 2003 MDL	December 2004 Result	December 2004 MDL	December 2005 Result	December 2005 MDL	January 2007 Result	January 2007 MDL
Acenaphthene	µg/l	8j	1	ND(8)	0.8	ND(8)	0.8	0.96j	0.8	ND(15)	2	ND(15)	2	ND(15)	2	ND(15)	1.5	4.8j	1.5	ND(16)	1.6	2.4j	1
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	0.83j	0.8	ND(15)	2	ND(15)	2	ND(15)	2	ND(15)	1.5	3.6j	1.5	ND(16)	1.6	ND(18)	1.6
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.096)	0.019	0.06j	0.038	ND(0.2)	0.04	0.049j	0.046
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.096)	0.019	ND(0.095)	0.019	ND(0.099)	0.02	ND(0.12)	0.023
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.19)	0.038	ND(0.095)	0.019	ND(0.099)	0.02	ND(0.12)	0.023
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.58)	0.096	ND(0.19)	0.038	ND(0.2)	0.04	ND(0.23)	0.046
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.09	ND(0.096)	0.019	ND(0.57)	0.095	ND(0.59)	0.099	ND(0.69)	0.12
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(2)	0.41	ND(0.095)	0.019	ND(0.099)	0.02	ND(0.12)	0.023
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.38)	0.076	ND(0.4)	0.079	ND(0.46)	0.092
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.2)	0.04	ND(0.23)	0.046
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.2)	0.04	ND(0.23)	0.046
Fluorene	µg/l	3j	1	ND(0.2)	0.04	0.2j	0.2	0.43j	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	1.7	0.17	ND(0.79)	0.5	0.99	0.58
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.38)	0.076	ND(0.4)	0.079	ND(0.46)	0.092
Naphthalene	µg/l	3j	1	23	0.9	10	1	42	1	6.2j	1	ND(11)	1	ND(11)	1	ND(12)	1.2	120	1.5	ND(12)	1.6	1.9j	1.5
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	0.1j	0.08	0.19j	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	0.14j	0.077	0.84	0.076	ND(0.4)	0.079	0.35j	0.092
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	ND(0.76)	0.17	ND(0.79)	0.18	ND(0.92)	0.21
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	28.7	0.41	13.7	0.41	18.6	0.41	ND(2)	0.41	12.7	0.41	10.8	0.41	13.7	0.41	13.8	0.41	ND(2)	0.41	14	0.46	15.8	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	23.9	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.19)	0.038	15.9	0.41		0.46	ND(2)	0.46
Chloride	mg/l	4.4	1.5	4.4	1.5	4.3	1.5	4.6	1.5	4.1	1.5	4.5	1.5	5.1	1.5	4.4	1.5	4.5	1.5	4.6	1.5	4.9	1
Iron (Total)	mg/l	1.56	0.038	1.36	0.038	1.42	0.0349	1.43	0.0349	1.09	0.0349	1.4	0.035	1.26	0.0453	0.796	0.0453	1.58	0.0495	1.24	0.0378	2.62	0.0522
Iron (Dissolved)	mg/l	0.353	0.038	0.872	0.038	1.07	0.0349	1.59	0.0349	0.968	0.0349	1.1	0.035	1.23	0.0453	0.896	0.0453	1.04	0.0495	1.21	0.0378	1.45	0.0522
Methane	µg/l	100	2	100	2	210	10	1100	40	120	2	63	2	150	10	47	2	400	10	100	2	180	4
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4		0.4	ND(0.5)	0.25
Sulfate	mg/l	4.1j	1.5	7.5	1.5	9.5	1.5	6	1.5	9.6	1.5	17.1	1.5	14.2	1.5	15.7	1.5	14.1	1.5	19.2	1.5	17.5	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	1.91		0.29		0.81		0.29		0.2		0.32		3.2		0.23		0.69		3.95		6.19*	
Ferrous Iron	mg/l	0.8		1.5		3		3.5		2.5		1.2		2		0.4		2		1.6		0	
Oxidation-reduction Pot.	volts	345		-90		33		-72		49.1		18.4		-29.7		17.8		21.5		-21		12	
pH	std. units	6.6		5.6		4.72		5.65		5.8		5.08		5.34		5.8		5.81		5.31		5.9	
Specific Conductance	µS/cm	78		64		68		75		68		83		80		69		82		*		79	
Temperature	°C	19.6		18.16		18.7		20.32		19.86		18.09		18.83		34.39*		19.7		19.72		19.1	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-15

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	December 2001 MDL	March 2002 Result	March 2002 MDL	June 2002 Result	June 2002 MDL	September 2002 Result	September 2002 MDL	December 2002 Result	December 2002 MDL	March 2003 Result	March 2003 MDL	June 2003 Result	June 2003 MDL	October 2003 Result	October 2003 MDL	December 2004 Result	December 2004 MDL	December 2005 Result	December 2005 MDL	January 2007 Result	January 2007 MDL
Acenaphthene	µg/l	3j	1	3j	0.8	2j	0.8	ND(8)	0.8	ND(15)	2	ND(15)	2	2.1j	1.6	2.3j	1.5	2.3j	1.5	2.6j	1.6	ND(18)	1
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(16)	1.6	ND(15)	1.5	ND(15)	1.5	ND(16)	1.6	ND(18)	1.6
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	0.2	0.04	0.19j	0.04	0.13j	0.04	0.095j	0.04	0.13j	0.04	0.028j	0.019	0.10j	0.038	0.13j	0.039	0.080j	0.045
Benz(a)anthracene	µg/l	ND(10)	1	0.03j	0.02	0.03j	0.02	0.037j	0.02	ND(0.1)	0.02	ND(0.09)	0.02	0.021j	0.02	ND(0.095)	0.019	0.022j	0.019	0.026j	0.02	ND(0.11)	0.023
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.19)	0.038	ND(0.096)	0.019	ND(0.098)	0.02	ND(0.11)	0.023
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.57)	0.095	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.23)	0.045
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.09	ND(0.59)	0.1	ND(0.095)	0.019	ND(0.58)	0.096	ND(0.59)	0.098	ND(0.68)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.096)	0.019	ND(0.098)	0.02	ND(0.11)	0.023
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	1.1	0.08	0.63	0.08	0.45	0.08	ND(0.7)	0.7	ND(0.38)	0.077	ND(0.39)	0.078	ND(0.45)	0.091
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.23)	0.045
Fluoranthene	µg/l	2j	1	0.7j	0.2	1	0.04	1.5	0.04	0.9	0.04	0.72	0.04	1	0.04	1.2	0.038	0.98	0.038	0.93	0.039	0.69	0.045
Fluorene	µg/l	2j	1	1	0.04	0.8	0.2	0.79j	0.2	0.56j	0.2	0.38j	0.2	0.7j	0.18	0.5j	0.17	0.47j	0.17	ND(0.78)	0.49	ND(0.91)	0.57
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.077	ND(0.39)	0.078	ND(0.45)	0.091
Naphthalene	µg/l	ND(10)	1	ND(8)	0.9	ND(8)	1	ND(8)	1	ND(12)	1	ND(11)	1	ND(12)	1.2	ND(11)	1.1	ND(12)	1.5	ND(12)	1.6	ND(14)	1.5
Phenanthrene	µg/l	2j	1	0.5	0.08	0.5	0.08	0.47	0.08	0.24j	0.08	0.17j	0.08	0.24j	0.08	0.29j	0.076	0.18j	0.077	0.20j	0.078	0.10j	0.091
Pyrene	µg/l	1j	1	0.7j	0.2	0.9	0.2	1.1	0.2	0.65j	0.2	0.48j	0.2	0.68j	0.18	0.83	0.17	0.73j	0.17	0.67j	0.18	0.49j	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	128	0.41	192	0.41	129	0.41	ND(2)	0.41	157	0.41	171	0.41	137	0.41	124	0.41	ND(2)	0.41	147	0.46	171	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	131	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	0.14j	0.038	153	0.41		0.46	ND(2)	0.46
Chloride	mg/l	4.7	1.5	4.5	1.5	4.7	1.5	4.6	1.5	4.4	1.5	3.7	1.5	4.2	1.5	4.7	1.5	4.2	1.5	3.6	1.5	3.7	1
Iron (Total)	mg/l	27.2	0.038	38.7	0.038	30.7	0.0349	26.2	0.0349	34.9	0.0349	38.3	0.035	30.7	0.0453	31.2	0.0453	30.2	0.0495	34.3	0.0378	35.9	0.0522
Iron (Dissolved)	mg/l	26.2	0.038	37.8	0.038	29.8	0.0349	26.4	0.0349	33.6	0.0349	38.8	0.035	31.7	0.0453	31.1	0.0453	29.8	0.0495	32.7	0.0378	36.8	0.0522
Methane	µg/l	1400	100	1500	40	1800	50	2200	50	1900	100	2500	200	1900	200	1800	100	1800	40	1800	50	1300	200
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4		0.4	ND(0.5)	0.25
Sulfate	mg/l	1.6j	1.5	3j	1.5	ND(5)	1.5	ND(5)	1.5	3.3j	1.5	2j	1.5	2j	1.5	1.9j	1.5	ND(5)	1.5	6.7	1.5	2.2j	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	1.06		0.6		0.5		0.36		0.35		0.23		3.95		0.63		0.98		0.36		5.05*	
Ferrous Iron	mg/l	5.8		4.5		5.8		7		7		5.1		7.1		5.8		5		4.5		3	
Oxidation-reduction Pot.	volts	89		-46		-24		-59		-39		-34.9		-52.6		-40.4		-47.7		-91		-84	
pH	std. units	6.44		6.15		5.95		6.39		6.3		6.26		5.82		6.16		6.11		5.93		6	
Specific Conductance	µS/cm	304		403		320		294		392		401		369		355		365		*		384	
Temperature	°C	24.6		21.2		25.3		28.77		24.63		20.68		26.3		28.45		25.5		22.7		22.9	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-16

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	December 2001 MDL	March 2002 Result	March 2002 MDL	June 2002 Result	June 2002 MDL	September 2002 Result	September 2002 MDL	December 2002 Result	December 2002 MDL	March 2003 Result	March 2003 MDL	June 2003 Result	June 2003 MDL	October 2003 Result	October 2003 MDL	December 2004 Result	December 2004 MDL	December 2005 Result	December 2005 MDL	January 2007 Result	January 2007 MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(9)	0.9	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(15)	1.5	ND(15)	1.5	ND(15)	1.5	ND(16)	1.6	ND(17)	0.98
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(9)	0.9	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(15)	1.5	ND(15)	1.5	ND(15)	1.5	ND(16)	1.6	ND(17)	1.5
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.095)	0.019	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.044
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.095)	0.019	ND(0.095)	0.019	ND(0.098)	0.02	ND(0.11)	0.022
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.065j	0.038	ND(0.095)	0.019	ND(0.098)	0.02	ND(0.11)	0.022
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.57)	0.095	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.044
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.7)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.1	ND(0.095)	0.019	ND(0.57)	0.095	ND(0.59)	0.098	ND(0.66)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.095)	0.019	ND(0.098)	0.02	ND(0.11)	0.022
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.39)	0.078	ND(0.44)	0.087
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.044
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.19)	0.038	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.044
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	2.7	0.2	ND(0.77)	0.17	ND(2)	2	ND(0.76)	0.17	ND(0.78)	0.49	ND(0.87)	0.55
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.39)	0.078	ND(0.44)	0.087
Naphthalene	µg/l	ND(10)	1	ND(8)	0.9	ND(9)	1	ND(8)	1	ND(12)	1	ND(11)	1	ND(12)	1.2	ND(11)	1.1	ND(11)	1.5	ND(12)	1.6	ND(13)	1.4
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.38)	0.076	ND(0.39)	0.078	ND(0.44)	0.087
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	ND(0.76)	0.17	ND(0.76)	0.17	ND(0.78)	0.18	ND(0.87)	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	12.9	0.41	7.4	0.41	8.2	0.41	ND(2)	0.41	6.8	0.41	4.9	0.41	5.3	0.41	5.3	0.41	ND(2)	0.41	5.8	0.46	6.1	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	7.9	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.19)	0.038	4.8	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	4.5	1.5	4.8	1.5	4.6	1.5	5.6	1.5	4.4	1.5	4.7	1.5	4.6	1.5	4.2	1.5	4.1	1.5	5.2	1.5	4.3	1
Iron (Total)	mg/l	1.3	0.038	0.0658j	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	0.0505j	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	0.98	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	0.342	0.0522
Methane	µg/l	17	2	ND(5)	2	3.3j	2	3.3j	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	2.1j	2	ND(5)	2	ND(5)	2
Nitrate Nitrogen	mg/l	0.42j	0.4	0.68	0.4	0.75	0.4	1.09	0.4	1.05	0.4	1.4	0.4	1.3	0.4	1.6	0.4	1.3	0.4	1.2	0.4	1.1	0.25
Sulfate	mg/l	3.1j	1.5	2.7j	1.5	3.1j	1.5	15.3	1.5	5.9	1.5	8.1	1.5	12.6	1.5	26.6	1.5	9.1	1.5	18.8	1.5	6.2	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	1.99		5.33		4.64		3.03		4.93		4.83		5.61		3.49		2.15		5.3		7.31	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0	
Oxidation-reduction Pot.	volts	484		492		613		323		405		390		603		382		154		272		340	
pH	std. units	5.42		4.69		4.21		4.52		5.08		5.19		4.42		5.07		5.05		4.5		4.85	
Specific Conductance	µS/cm	49		45		47		73		53		63		70		80		63		*		74	
Temperature	°C	20.9		21.28		21.5		21.34		21.39		20.13		21.61		27.19*		23.26		21.01		20	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-17

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	MDL	March 2002 Result	MDL	June 2002 Result	MDL	September 2002 Result	MDL	December 2002 Result	MDL	March 2003 Result	MDL	June 2003 Result	MDL	October 2003 Result	MDL	December 2004 Result	MDL	December 2005 Result	MDL	January 2007 Result	MDL
Acenaphthene	µg/l	38	1	51	0.8	35	0.8	33	0.8	30	2	18	2	6.8j	1.6	13j	1.5	22	1.6	8.6j	1.6	2.1j	1
Acenaphthylene	µg/l	2j	1	ND(8)	0.8	14	0.8	7.7j	0.8	14j	2	6.9j	2	3j	1.6	4.4j	1.5	ND(16)	16	3.3j	1.6	ND(18)	1.6
Anthracene	µg/l	2j	1	2	0.04	2	0.04	1.5	0.04	1.5	0.04	0.68	0.04	0.26	0.04	0.046j	0.019	0.83	0.04	0.55	0.04	0.058j	0.045
Benz(a)anthracene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.036j	0.02	ND(0.09)	0.02	ND(0.1)	0.02	0.035j	0.019	ND(0.1)	0.02	0.025j	0.02	ND(0.11)	0.022
Benzo(a)pyrene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.087j	0.02	ND(0.09)	0.02	ND(0.1)	0.02	0.04j	0.038	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.11)	0.022
Benzo(b)fluoranthene	µg/l	ND(11)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.57)	0.095	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.22)	0.045
Benzo(g,h,i)perylene	µg/l	ND(11)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.09	ND(0.58)	0.1	0.022j	0.019	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.67)	0.11
Benzo(k)fluoranthene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.036j	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.11)	0.022
Chrysene	µg/l	ND(11)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	0.36j	0.08	0.17j	0.08	ND(0.39)	0.08	0.083j	0.076	ND(0.4)	0.081	ND(0.4)	0.08	ND(0.45)	0.089
Dibenz(a,h)anthracene	µg/l	ND(11)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	0.044j	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.19)	0.038	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.22)	0.045
Fluoranthene	µg/l	ND(11)	1	28	0.2	0.9	0.04	0.96	0.04	0.69	0.04	0.49	0.04	0.28	0.04	0.76	0.038	0.44	0.04	0.29	0.04	ND(0.22)	0.045
Fluorene	µg/l	27	1	1	0.04	23	0.2	22	0.2	21	0.2	14	0.2	8.1	0.17	8.2	0.17	12	0.18	5.2	0.5	1.4	0.56
Indeno(1,2,3-cd)pyrene	µg/l	ND(11)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.38)	0.076	ND(0.4)	0.081	ND(0.4)	0.08	ND(0.45)	0.089
Naphthalene	µg/l	720	11	750	5	560	5	590	5	480	6	140	1	ND(12)	1.2	13	1.1	330	1.6	94	1.6	9.6j	1.4
Phenanthrene	µg/l	14	1	16	0.4	12	0.08	14	0.08	13	0.08	3.3	0.08	1.7	0.08	0.094j	0.076	9	0.081	5	0.08	0.56	0.089
Pyrene	µg/l	ND(11)	1	0.4j	0.2	0.4j	0.2	0.62j	0.2	0.26j	0.2	ND(0.8)	0.2	ND(0.78)	0.17	0.54j	0.17	0.22j	0.18	ND(0.8)	0.18	ND(0.89)	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	42.3	0.41	48	0.41	43.8	0.41	ND(2)	0.41	39.2	0.41	30.5	0.41	17.3	0.41	27.5	0.41	ND(2)	0.41	34	0.46	13	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	44.8	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	0.27	0.038	32.4	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	11.4	1.5	13.5	1.5	11.6	1.5	9.9	1.5	12.7	1.5	16.7	1.5	17.9	1.5	17.1	1.5	11.6	1.5	13.5	1.5	14.9	1
Iron (Total)	mg/l	4.13	0.038	4.49	0.038	4.73	0.0349	8.36	0.0349	5.07	0.0349	2.3	0.035	1.41	0.0453	4.6	0.0453	7.85	0.0495	8.5	0.0378	3.45	0.0522
Iron (Dissolved)	mg/l	2.64	0.038	3.65	0.038	4.07	0.0349	4.91	0.0349	4.09	0.0349	2.3	0.035	1.04	0.0453	3.56	0.0453	7.03	0.0495	4.67	0.0378	2.19	0.0522
Methane	µg/l	850	40	1400	40	910	20	930	40	640	20	470	10	300	20	390	20	550	20	300	20	140	2
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.25
Sulfate	mg/l	2.9j	1.5	2.1j	1.5	2.7j	1.5	3.8j	1.5	3.4j	1.5	3.1j	1.5	4.4j	1.5	5.6	1.5	6.3	1.5	9.8	1.5	6.7	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.79		0.3		0.62		0.33		0.31		0.49		2.6		0.5		0.33		0.4		5.98*	
Ferrous Iron	mg/l	1.2		5		5.5		5.5		4.5		2.2		1.4		2.5		5		4		1	
Oxidation-reduction Pot.	volts	339		13.1		340		60.3		113		208		278		162		-13		-75		122	
pH	std. units	5.7		5.89		3.86		3.71		5.57		2.15*		4.5		5.15		5.86		5.36		5.12	
Specific Conductance	µS/cm	111		147		121		126		116		107		112		129		130		*		123	
Temperature	°C	20.1		18.6		20.4		20.99		20.53		18.92		20.02		20.9		21.4		21.09		20.6	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - Indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-18

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001		March 2002		June 2002		September 2002		December 2002		March 2003		June 2003		October 2003		December 2004		December 2005		January 2007	
		Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL
Acenaphthene	µg/l	26	1	42	0.8	9	0.8	1.6j	0.9	12j	2	2.1j	2	ND(16)	1.6	ND(15)	1.5	23	1.7	9.1j	1.6	12j	0.97
Acenaphthylene	µg/l	2j	1	21	0.8	4j	0.8	ND(9)	0.9	5.6j	2	ND(15)	2	ND(16)	1.6	ND(15)	1.5	ND(17)	17	ND(16)	1.6	9.0j	1.5
Anthracene	µg/l	ND(11)	1	ND(0.2)	0.04	0.07j	0.04	ND(0.2)	0.04	0.092j	0.04	ND(0.2)	0.04	0.08j	0.04	ND(0.095)	0.019	ND(0.21)	0.2	0.056j	0.039	0.078j	0.043
Benz(a)anthracene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.082j	0.02	ND(0.095)	0.019	ND(0.1)	0.021	ND(0.098)	0.02	ND(0.11)	0.021
Benzo(a)pyrene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.23	0.02	ND(0.19)	0.038	ND(0.1)	0.021	ND(0.098)	0.02	ND(0.11)	0.021
Benzo(b)fluoranthene	µg/l	ND(11)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	0.098j	0.04	ND(0.57)	0.095	ND(0.21)	0.042	ND(0.2)	0.039	ND(0.21)	0.043
Benzo(g,h,i)perylene	µg/l	ND(11)	1	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	0.11j	0.1	ND(0.095)	0.019	ND(0.63)	0.1	ND(0.59)	0.098	ND(0.64)	0.11
Benzo(k)fluoranthene	µg/l	ND(11)	1	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.085j	0.02	ND(2)	0.41	ND(0.1)	0.021	ND(0.098)	0.02	ND(0.11)	0.021
Chrysene	µg/l	ND(11)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	0.096j	0.08	ND(0.38)	0.076	ND(0.42)	0.084	ND(0.39)	0.078	ND(0.43)	0.086
Dibenz(a,h)anthracene	µg/l	ND(11)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	0.1j	0.04	ND(0.19)	0.038	ND(0.21)	0.042	ND(0.2)	0.039	ND(0.21)	0.043
Fluoranthene	µg/l	ND(11)	1	25	0.2	0.2	0.04	0.086j	0.04	0.28	0.04	0.087j	0.04	0.087j	0.04	ND(0.19)	0.038	0.46	0.042	0.33	0.039	0.61	0.043
Fluorene	µg/l	16	1	0.7	0.04	7	0.2	2.7	0.2	9.8	0.2	2	0.2	ND(0.78)	0.18	0.96	0.17	25	0.19	13	0.49	20	0.54
Indeno(1,2,3-cd)pyrene	µg/l	ND(11)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	0.1j	0.08	ND(0.38)	0.076	ND(0.42)	0.084	ND(0.39)	0.078	ND(0.43)	0.086
Naphthalene	µg/l	470	6	830	5	170	1	27	1	310	1	22	1	ND(12)	1.2	10j	1.1	500	8.4	180	1.6	290	1.4
Phenanthrene	µg/l	15	1	24	0.4	5	0.08	1.7	0.09	8.9	0.08	0.08j	0.08	0.3j	0.08	0.39	0.076	16	0.084	11	0.078	17	0.086
Pyrene	µg/l	ND(11)	1	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.78)	0.18	ND(0.76)	0.17	ND(0.84)	0.19	ND(0.78)	0.18	ND(0.86)	0.19
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	23.1	0.41	11.3	0.41	9.7	0.41	ND(2)	0.41	12.4	0.41	10.5	0.41	8.5	0.41	9.5	0.41	ND(2)	0.41	10.4	0.46	14.2	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	8.8	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.19)	0.038	9.4	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	12.1	1.5	12.8	1.5	17.3	1.5	23.5	1.5	19.8	1.5	22.1	1.5	22.5	1.5	23.3	1.5	17.9	1.5	22.1	1.5	17.9	1
Iron (Total)	mg/l	0.475	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	0.0408j	0.0349	ND(0.1)	0.0349	0.11	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Methane	µg/l	4.4j	2	4.6j	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	3.9j	2	ND(5)	2	ND(5)	2
Nitrate Nitrogen	mg/l	0.79	0.4	0.87	0.4	1.5	0.4	2.07	0.4	1.51	0.4	1.7	0.4	1.9	0.4	2.2	0.4	1.1	0.4	1.5	0.4	1.1	0.25
Sulfate	mg/l	10.3	1.5	9.2	1.5	9.1	1.5	7.9	1.5	9.8	1.5	8	1.5	5.6	1.5	6.9	1.5	9.7	1.5	9.8	1.5	9.7	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.67		0.37		0.63		0.37		0.35		0.38		2.39		0.37		0.58		0.82		5.49*	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0	
Oxidation-reduction Pot.	volts	377		348		423		338		358		410		557		352		111		252		293	
pH	std. units	5.63		4.93		4.55		3.71		5.28		4.42		4.69		5.23		5.17		4.66		5.18	
Specific Conductance	µS/cm	104		102		109		136		135		136		132		112		116		*		122	
Temperature	°C	22.2		22.55		22.3		23.27		22.78		22.35		22.97		36.81*		23.5		22.41		21.3	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-19

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	December 2001 MDL	March 2002 Result	March 2002 MDL	June 2002 Result	June 2002 MDL	September 2002 Result	September 2002 MDL	December 2002 Result	December 2002 MDL	March 2003 Result	March 2003 MDL	June 2003 Result	June 2003 MDL	October 2003 Result	October 2003 MDL	December 2004 Result	December 2004 MDL	December 2005 Result	December 2005 MDL	January 2007 Result	January 2007 MDL
Acenaphthene	µg/l	49	1	93	0.8	83	0.8	71	0.8	91	2	88	2	83	1.6	80	1.7	73	1.5	61	1.6	46	1.1
Acenaphthylene	µg/l	2j	1	ND(8)	0.8	36	0.8	11	0.8	39	2	26	2	37	1.6	36	1.7	33	1.5	ND(26)	26	ND(26)	26
Anthracene	µg/l	2j	1	4	0.04	3	0.04	2.1	0.04	3.6	0.04	3.7	0.04	3	0.04	ND(0.1)	0.021	2.5	0.038	2.2	0.039	2	0.047
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.07j	0.02	ND(0.1)	0.021	ND(0.095)	0.019	ND(0.098)	0.02	ND(0.12)	0.023
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.16	0.02	ND(0.21)	0.042	ND(0.095)	0.019	ND(0.098)	0.02	ND(0.12)	0.023
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	0.081j	0.04	ND(0.63)	0.1	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.23)	0.047
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.09	ND(0.6)	0.09	ND(0.6)	0.09	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.1	ND(0.1)	0.021	ND(0.57)	0.095	ND(0.59)	0.098	ND(0.70)	0.12
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.09)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	0.07j	0.02	ND(2)	0.41	ND(0.095)	0.019	ND(0.098)	0.02	ND(0.12)	0.023
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	0.08j	0.08	ND(0.4)	0.08	0.11j	0.08	ND(0.42)	0.084	ND(0.38)	0.076	0.10j	0.079	0.12j	0.094
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	0.083j	0.04	ND(0.21)	0.042	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.23)	0.047
Fluoranthene	µg/l	ND(10)	1	39	2	1	0.04	1.4	0.04	1.6	0.04	2.2	0.04	1.8	0.04	1.7	0.042	1.8	0.038	1.5	0.039	1.8	0.047
Fluorene	µg/l	22	1	2	0.04	33	0.2	26	0.2	38	2	39	2	35	0.18	34	0.19	27	0.17	22	0.49	22	0.59
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	0.1j	0.08	ND(0.42)	0.084	ND(0.38)	0.076	ND(0.39)	0.079	ND(0.47)	0.094
Naphthalene	µg/l	290	5	980	9	890	9	500	5	1100	11	1000	11	970	12	1000	13	830	7.6	640	7.9	270	1.5
Phenanthrene	µg/l	17	1	36	0.8	31	0.8	24	0.4	37	0.8	39	0.8	32	0.78	37	0.84	26	0.38	22	0.39	19	0.47
Pyrene	µg/l	ND(10)	1	0.8	0.2	0.7j	0.2	1.3	0.2	0.69j	0.2	0.67j	0.2	0.81	0.18	0.77j	0.19	0.85	0.17	0.58j	0.18	0.84j	0.21
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	68.6	0.41	82.3	0.41	78.4	0.41	ND(2)	0.41	92.2	0.41	87.5	0.41	84.9	0.41	88.6	0.41	ND(2)	0.41	112	0.46	109	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	78.4	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	3.1	0.042	95.6	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	10.5	1.5	10.2	1.5	10.1	1.5	1020	150	9.8	1.5	9.7	1.5	10.7	1.5	10.2	1.5	11.5	1.5	10.4	1.5	10.3	1
Iron (Total)	mg/l	4.69	0.038	5.71	0.038	5.75	0.0349	5.47	0.0349	6.76	0.0349	5.6	0.035	6	0.0453	5.61	0.0453	6.07	0.0495	7.25	0.0378	8	0.0522
Iron (Dissolved)	mg/l	3.66	0.038	5.29	0.038	5.61	0.0349	5.48	0.0349	6.74	0.0349	5.8	0.035	6.02	0.0453	5.49	0.0453	6.05	0.0495	6.86	0.0378	7.54	0.0522
Methane	µg/l	590	40	1400	20	1200	40	1000	40	1400	40	1400	40	1200	40	1300	50	1300	40	780	40	700	10
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.25
Sulfate	mg/l	6.7	1.5	4.3j	1.5	4.3j	1.5	ND(5)	1.5	3.3j	1.5	4.1j	1.5	4.7j	1.5	2.8j	1.5	2.1j	1.5	2.3j	1.5	2.1j	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	0.81		1.3		0.51		0.19		0.24		0.23		2.13		0.39		0.82		0.38		5.56*	
Ferrous Iron	mg/l	4.6		6		7		5.5		5		4.8		4.8		NM		4		5		5	
Oxidation-reduction Pot.	volts	177		-90		178		-49		-5.7		25.4		100		-127		-26		-114		-66	
pH	std. units	5.88		6.07		5.15		5.07		6.04		4.12		5.35		5.95		6.06		5.73		5.55	
Specific Conductance	µS/cm	176		193		179		192		204		198		203		234		208		*		201	
Temperature	°C	22.3		19.9		21.1		23.42		22.11		19.98		22.02		22.41		27.24		22.07		20.9	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-20

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001 Result	MDL	March 2002 Result	MDL	June 2002 Result	MDL	September 2002 Result	MDL	December 2002 Result	MDL	March 2003 Result	MDL	June 2003 Result	MDL	October 2003 Result	MDL	December 2004 Result	MDL	December 2005 Result	MDL	January 2007 Result	MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(15)	1.5	ND(15)	1.5	ND(15)	1.5	ND(16)	1.6	ND(17)	0.98
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(15)	1.5	ND(15)	1.5	ND(15)	1.5	ND(16)	1.6	ND(17)	1.5
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.096)	0.019	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.043
Benz(a)anthracene	µg/l	*ND(10)*	*1*	*ND(0.1)*	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(0.096)	0.019	ND(0.095)	0.019	ND(0.099)	0.02	ND(0.11)	0.022
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	*ND(0.096)*	*0.019*	*ND(0.19)*	*0.039*	*ND(0.095)*	0.019	ND(0.099)	0.02	ND(0.11)	0.022
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.58)	0.096	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.043
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.096	ND(0.096)	0.019	ND(0.57)	0.095	ND(0.59)	0.099	ND(0.65)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.096)	0.019	ND(2)	0.41	ND(0.095)	0.019	ND(0.099)	0.02	ND(0.11)	0.022
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.39)	0.077	ND(0.38)	0.076	ND(0.39)	0.079	ND(0.43)	0.087
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.043
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.22)	0.043
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	ND(0.77)	0.17	ND(0.76)	0.17	ND(0.79)	0.49	ND(0.87)	0.54
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.39)	0.077	ND(0.38)	0.076	ND(0.39)	0.079	ND(0.43)	0.087
Naphthalene	µg/l	ND(10)	1	ND(8)	1	ND(8)	1	ND(8)	1	ND(11)	1	ND(11)	1	ND(12)	1.2	ND(12)	1.2	ND(11)	1.5	ND(12)	1.6	ND(13)	1.4
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.38)	0.077	ND(0.39)	0.077	ND(0.38)	0.076	ND(0.39)	0.079	ND(0.43)	0.087
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.77)	0.17	ND(0.77)	0.17	ND(0.76)	0.17	ND(0.79)	0.18	ND(0.87)	0.2
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	9.7	0.41	9.3	0.41	7.8	0.41	ND(2)	0.41	9.7	0.41	10.4	0.41	8	0.41	9.2	0.41	ND(2)	0.41	10.6	0.46	11.7	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	7.5	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.19)	0.039	7.3	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	10.2	1.5	9.2	1.5	10.4	1.5	10.6	1.5	8.8	1.5	8.9	1.5	10	1.5	9.1	1.5	11.3	1.5	10.7	1.5	9.8	1
Iron (Total)	mg/l	0.331	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	0.0473j	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	0.164j	0.0378	0.136j	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Methane	µg/l	3.5j	2	2.8j	2	ND(5)	2	ND(5)	2	ND(5)	2	2.7j	2	ND(5)	2	ND(5)	2	9.6	2	ND(5)	2	3.3j	2
Nitrate Nitrogen	mg/l	0.58	0.4	0.41j	0.4	0.49j	0.4	0.52	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	0.45j	0.4	0.47j	0.4	0.32j	0.25
Sulfate	mg/l	3j	1.5	3.2j	1.5	2.2j	1.5	2.8j	1.5	3.9j	1.5	3.4j	1.5	3j	1.5	5.8	1.5	ND(5)	1.5	1.6j	1.5	5.5	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	1.27		0.89		1.84		0.64		0.6		0.58		2.93		0.45		0.88		0.41		5.73*	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0	
Oxidation-reduction Pot.	volts	478		543		591		272		417		495		286		327		185.2		286		321	
pH	std. units	5.36		4.78		3.57		4.97		5.21		4.62		4.62		5.14		5.01		4.41		4.89	
Specific Conductance	µS/cm	67		66		61		64		72		70		64		61		74		*		68	
Temperature	°C	22.7		21.08		22.8		24.25		23.2		20.22		23.11		34.16*		28.74		22.54		22.1	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-21

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001		March 2002		June 2002		September 2002		December 2002		March 2003		June 2003		October 2003		December 2004		December 2005		January 2007	
		Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(9)	0.9	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(16)	1.6	ND(16)	1.6	ND(15)	1.5	ND(15)	1.5	ND(17)	0.95
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(9)	0.9	ND(8)	0.8	ND(15)	2	ND(15)	2	ND(16)	1.6	ND(16)	1.6	ND(15)	1.5	ND(15)	1.5	ND(17)	1.5
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.1)	0.02	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.21)	0.042
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.095)	0.019	ND(0.097)	0.019	ND(0.11)	0.021
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.2)	0.04	ND(0.095)	0.019	ND(0.097)	0.019	ND(0.11)	0.021
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.6)	0.1	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.21)	0.042
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.59)	0.1	ND(0.1)	0.02	ND(0.57)	0.095	ND(0.58)	0.097	ND(0.63)	0.11
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.095)	0.019	ND(0.097)	0.019	ND(0.11)	0.021
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.4)	0.08	ND(0.38)	0.076	ND(0.39)	0.077	ND(0.42)	0.084
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.21)	0.042
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.19)	0.039	ND(0.21)	0.042
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.78)	0.18	ND(0.8)	0.18	ND(0.76)	0.17	ND(0.77)	0.48	ND(0.84)	0.53
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.4)	0.08	ND(0.38)	0.076	ND(0.39)	0.077	ND(0.42)	0.084
Naphthalene	µg/l	ND(10)	1	ND(8)	1	ND(9)	1	ND(8)	1	ND(11)	1	ND(11)	1	ND(12)	1.2	ND(12)	1.2	ND(11)	1.5	ND(12)	1.5	ND(13)	1.4
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.09	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.4)	0.08	ND(0.38)	0.076	ND(0.39)	0.077	ND(0.42)	0.084
Pyrene	µg/l	ND(10)	1	ND(0.8)	0.2	ND(0.9)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.78)	0.18	ND(0.8)	0.18	ND(0.76)	0.17	ND(0.77)	0.17	ND(0.84)	0.19
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	6.5	0.41	4.1	0.41	4	0.41	ND(2)	0.41	3.8	0.41	4.2	0.41	4.5	0.41	4.6	0.41	ND(2)	0.41	3.7	0.46	3.5	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	4.9	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.2)	0.04	3	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	11.7	1.5	12	1.5	13	1.5	12.5	1.5	12.5	1.5	10.9	1.5	10.1	1.5	10.6	1.5	11.8	1.5	12	1.5	13.3	1
Iron (Total)	mg/l	7	0.038	0.172	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	0.233	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	0.054j	0.0453	ND(0.2)	0.0495	0.0417 J	0.0378	ND(0.2)	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.0349	ND(0.1)	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	ND(0.2)	0.0495	ND(0.2)	0.0378	ND(0.2)	0.0522
Methane	µg/l	2.8j	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	ND(5)	2	4.1 J	2	ND(5)	2
Nitrate Nitrogen	mg/l	1.22	0.4	1.2	0.4	1.23	0.4	1.4	0.4	1.15	0.4	1	0.4	0.8	0.4	1.2	0.4	2	0.4	1.5	0.4	1.7	0.25
Sulfate	mg/l	3.1j	1.5	2.9j	1.5	2.7j	1.5	3j	1.5	3j	1.5	2.1j	1.5	2j	1.5	2.1j	1.5	2.4j	1.5	4.6 J	1.5	3.4j	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	4.4		4.52		4.54		4.06		4.22		4.34		6.06		3.78		1.44		3.51		6.57	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0		0		0		0	
Oxidation-reduction Pot.	volts	507		520		516		274		405		423		571		369		164		264		326	
pH	std. units	5.53		4.54		4.73		5.02		5.14		3.84		4.5		5.18		4.96		4.51		4.79	
Specific Conductance	µS/cm	67		69		68		72		73		68		61		91		78		*		74	
Temperature	°C	22		22.08		21.6		22.8		22.71		21.33		22.2		22.14		22.7		22.58		22.4	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro siemens per centimeter
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - Indicates suspect measurement likely due to instrument malfunction

Table 3-2

Summary of Ground Water Monitoring Data
Monitoring Well MW-22

Gulf States Creosoting Site
Hattiesburg, Mississippi

Polycyclic Aromatic Hydrocarbons (PAHs)	Units	December 2001		March 2002		June 2002		September 2002		December 2002		March 2003		June 2003		October 2003		December 2004		December 2005		January 2007	
		Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL
Acenaphthene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(15)	1.5	ND(16)	1.6	ND(15)	1.5	ND(16)	1.6	ND(20)	1.1
Acenaphthylene	µg/l	ND(10)	1	ND(8)	0.8	ND(8)	0.8	ND(8)	0.8	ND(16)	2	ND(15)	2	ND(15)	1.5	ND(16)	1.6	ND(15)	1.5	ND(16)	1.6	ND(20)	1.7
Anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.099)	0.02	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.25)	0.05
Benz(a)anthracene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.099)	0.02	ND(0.096)	0.019	ND(0.098)	0.02	ND(0.12)	0.025
Benzo(a)pyrene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.2)	0.04	ND(0.096)	0.019	ND(0.098)	0.02	ND(0.12)	0.025
Benzo(b)fluoranthene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.59)	0.099	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.25)	0.05
Benzo(g,h,i)perylene	µg/l	ND(10)	1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.6)	0.1	ND(0.58)	0.1	ND(0.099)	0.02	ND(0.58)	0.096	ND(0.59)	0.098	ND(0.75)	0.12
Benzo(k)fluoranthene	µg/l	ND(10)	1	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(0.1)	0.02	ND(2)	0.41	ND(0.096)	0.019	ND(0.098)	0.02	ND(0.12)	0.025
Chrysene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.4)	0.079	ND(0.38)	0.077	ND(0.39)	0.078	ND(0.50)	0.1
Dibenz(a,h)anthracene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.2)	0.04	ND(0.19)	0.04	ND(0.2)	0.04	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.25)	0.05
Fluoranthene	µg/l	ND(10)	1	ND(0.8)	0.2	0.04j	0.04	ND(0.2)	0.04	0.17j	0.04	0.14j	0.04	0.14j	0.04	0.19j	0.04	ND(0.19)	0.038	ND(0.2)	0.039	ND(0.25)	0.05
Fluorene	µg/l	ND(10)	1	ND(0.2)	0.04	ND(0.8)	0.2	ND(0.8)	0.2	ND(0.8)	0.2	14	0.2	ND(0.77)	0.17	ND(0.79)	0.18	ND(0.77)	0.17	ND(0.78)	0.49	ND(1.0)	0.62
Indeno(1,2,3-cd)pyrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.4)	0.079	ND(0.38)	0.077	ND(0.39)	0.078	ND(0.50)	0.1
Naphthalene	µg/l	ND(10)	1	ND(8)	1	ND(8)	1	ND(8)	1	ND(12)	1	ND(11)	1	ND(12)	1.2	ND(12)	1.2	ND(12)	1.5	ND(12)	1.6	ND(15)	1.6
Phenanthrene	µg/l	ND(10)	1	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.4)	0.08	ND(0.39)	0.08	ND(0.4)	0.079	ND(0.38)	0.077	ND(0.39)	0.078	ND(0.50)	0.1
Pyrene	µg/l	ND(10)	1	0.6j	0.2	0.6j	0.2	0.3j	0.2	0.84	0.2	0.83	0.2	0.76j	0.17	0.61j	0.18	ND(0.77)	0.17	ND(0.78)	0.18	ND(1.0)	0.22
Natural Attenuation Parameters																							
Alkalinity to pH 4.5	mg/l	48.4	0.41	52.1	0.41	50.6	0.41	ND(2)	0.41	54	0.41	59.9	0.41	62.3	0.41	50.6	0.41	ND(2)	0.41	25.5	0.46	32.8	0.46
Alkalinity to pH 8.3	mg/l	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	39.4	0.41	ND(2)	0.41	ND(2)	0.41	ND(2)	0.41	ND(0.2)	0.04	34.2	0.41	ND(2)	0.46	ND(2)	0.46
Chloride	mg/l	9.7	1.5	14.9	1.5	10	1.5	11.5	1.5	10.2	1.5	9.3	1.5	9.4	1.5	9.8	1.5	11.7	1.5	10.3	1.5	10.8	1
Iron (Total)	mg/l	2.54	0.038	0.0906j	0.038	ND(0.1)	0.0349	0.0368j	0.0349	0.0509j	0.0349	0.054j	0.035	0.0855j	0.0453	0.071j	0.0453	0.859	0.0495	1.18	0.0378	14.2	0.0522
Iron (Dissolved)	mg/l	ND(0.1)	0.038	ND(0.1)	0.038	ND(0.1)	0.0349	0.0371j	0.0349	ND(0.1)	0.0349	0.042j	0.035	ND(0.2)	0.0453	ND(0.2)	0.0453	0.339	0.0495	0.256	0.0378	0.185j	0.0522
Methane	µg/l	100	2	71	2	41	2	19	2	33	2	46	2	55	2	38	2	16	2	11	2	9.7	2
Nitrate Nitrogen	mg/l	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	0.57	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	ND(0.5)	0.4	0.42j	0.4	0.54	0.4	0.37j	0.25
Sulfate	mg/l	6.3	1.5	5j	1.5	4.9j	1.5	4.3j	1.5	5.4	1.5	5j	1.5	4.8j	1.5	4.1j	1.5	4.6j	1.5	5.2	1.5	5.2	1.5
Field Parameters																							
Dissolved Oxygen	mg/l	1.63		0.3		0.16		0.43		0.4		0.21		1.74		0.3		0.6		0.58		5.51*	
Ferrous Iron	mg/l	0		0		0		0		0		0		0		0.4		0		1		0	
Oxidation-reduction Pot.	volts	420		278		420		207		182		240		274		369		111		127		153	
pH	std. units	5.97		5.61		5.06		5.3		5.96		5.15		5.59		5.18		5.63		4.92		5.46	
Specific Conductance	µS/cm	131		143		134		127		149		158		161		91		114		*		121	
Temperature	°C	21		20.13		21.3		21.91		21.42		20.09		21.08		22.14		26		20.71		20.3	

Notes:
mg/l - milligrams per liter
µg/l - micrograms per liter
µS/cm - micro *siemens per centimeter*
°C - degrees Celsius
NA - Sample not analyzed for this constituent
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
MDL - Method detection limit
j - qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.
* - indicates suspect measurement likely due to instrument malfunction

Table 3-3
Natural Attenuation Parameters
Comparison of Affected Wells to Background Wells

Gulf States Creosote Site
Hattiesburg, Mississippi

Indicator of Natural Attenuation[1]: Dissolved Oxygen (mg/L)

Plume Concentration < Background Concentration

	Well Type	Well I.D.	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-04	Dec-05	Jan-07
Process Area	Plume	MW-1R	0.54	0.34	0.76	0.27	0.32	0.29	2.14	0.22	0.98	7.02[2]	4.32[2]
	Plume	MW-2R	0.42	0.41	0.48	0.26	0.33	0.25	2.04	0.5	1.3	0.36	4.49[2]
	Plume	MW-06	0.35	0.26	0.41	0.17	0.33	0.11	2.68	0.3	0.18	0.37	5.67[2]
	Background*	MW-16	1.99	5.33	4.64	3.03	4.93	4.83	5.61	3.49	2.15	5.3	7.31
	Background*	MW-18	0.67	0.37	0.63	0.37	0.35	0.38	2.39	0.37	0.56	0.62	5.49[2]
Northeast Drainage Ditch Area	Plume	MW-06	0.35	0.26	0.41	0.17	0.33	0.11	2.68	0.3	0.18	0.37	5.67[2]
	Plume	MW-09	0.46	0.34	0.4	0.22	0.17	0.16	4.07	0.42	1.69	Damaged	Damaged
	Plume	MW-17	0.79	0.3	0.62	0.33	0.31	0.49	2.6	0.5	0.33	0.4	5.98[2]
	Plume	MW-19	0.81	1.3	0.51	0.19	0.24	0.23	2.13	0.39	0.82	0.38	5.56[2]
	Background*	MW-16	1.99	5.33	4.64	3.03	4.93	4.83	5.61	3.49	2.15	5.3	7.31
	Background*	MW-18	0.67	0.37	0.63	0.37	0.35	0.38	2.39	0.37	0.56	0.62	5.49[2]
	Background*	MW-20	1.27	0.89	1.84	0.54	0.6	0.58	2.93	0.45	0.69	0.41	5.73[2]
	Background*	MW-21	4.4	4.52	4.84	4.06	4.22	4.34	6.06	2.78	1.44	3.61	6.57[2]
	Background*	MW-22	1.63	0.3	0.16	0.43	0.4	0.21	1.74	0.3	0.6	0.58	5.51[2]
Fill Area	Plume	MW-12	0.65	0.4	1.25	0.18	0.22	0.27	2.17	0.29	0.5	0.81	5.83[2]
	Background*	MW-13	0.63	0.22	0.26	0.21	0.25	0.46	2.19	NM	NM	NM	NM
	Background*	MW-15	1.06	0.6	0.5	0.39	0.35	0.23	2.95	0.63	0.98	0.36	5.92[2]

Notes
mg/L - milligram per liter
* background or as defined in this report "plume defining well"
(1) Geochemical indicators of occurrence of natural attenuation were derived from the EPA publication
Policy on Use of Natural Attenuation for Site Remediation, 1997
(2) - Indicates suspect measurement likely due to instrument malfunction
NM - Not Measured
NA - Not Analyzed
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
j - Qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.

Table 3-3
Natural Attenuation Parameters
Comparison of Affected Wells to Background Wells

Gulf States Creosote Site
Hattiesburg, Mississippi

Indicator of Natural Attenuation [1]

Iron - Fe+2 (mg/L)

Plume Concentration > Background Concentration

	Well Type	Well I.D.	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-04	Dec-05	Jan-07
Process Area	Plume	MW-1R	8	5.1	5	4	2.6	0	1.4	0	0	0	0
	Plume	MW-2R	0	0	0	0	0	0	0	0	0	0	0.6
	Plume	MW-06	7	5	3	4.5	5	4.2	6.6	5.2	4	4	0
	Background*	MW-16	0	0	0	0	0	0	0	0	0	0	0
	Background*	MW-18	0	0	0	0	0	0	0	0	0	0	0
Northeast Drainage Ditch Area	Plume	MW-06	7	5	3	4.5	5	4.2	6.6	5.2	4	4	0
	Plume	MW-09	6	3	7	5	5.5	3	4	4.6	5	Damaged	Damaged
	Plume	MW-17	1.2	5	5.5	5.5	4.5	2.2	1.4	2.5	5	4	1
	Plume	MW-19	4.6	6	7	5.5	5	4.8	4.8	NM	4	5	5
	Background*	MW-16	0	0	0	0	0	0	0	0	0	0	0
	Background*	MW-18	0	0	0	0	0	0	0	0	0	0	0
	Background*	MW-20	0	0	0	0	0	0	0	0	0	0	0
	Background*	MW-21	0	0	0	0	0	0	0	0	0	0	0
	Background*	MW-22	0	0	0	0	0	0	0	0.4	0	1	0
Fill Area	Plume	MW-12	1.4	2.2	3.8	3	3.5	1.8	1.9	NM	1	0.8	0.6
	Background*	MW-13	4.8	5.1	8	4	5.5	1.2	4	NM	NM	NM	NM
	Background*	MW-15	5.9	4.8	5.8	7	7	8.1	7.3	5.6	6	4.5	3

Notes
mg/L - milligram per liter
* background or as defined in this report "plume defining well"
(1) Geochemical indicators of occurrence of natural attenuation were derived from the EPA publication
Policy on Use of Natural Attenuation for Site Remediation, 1997
(2) - Indicates suspect measurement likely due to instrument malfunction
NM - Not Measured
NA - Not Analyzed
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
j - Qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.

Table 3-3
Natural Attenuation Parameters
Comparison of Affected Wells to Background Wells

Gulf States Creosote Site
Hattiesburg, Mississippi

Indicator of Natural Attenuation [1]

Methane (µg/L)

Plume Concentration > Background Concentration

	Well Type	Well I.D.	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-04	Dec-05	Jan-07
Process Area	Plume	MW-1R	2400	350	71	43	48	ND(5)	35	3.7j	2.2j	ND(5)	10
	Plume	MW-2R	2.8j	2.2j	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	2.1j	ND(5)	2.3j
	Plume	MW-06	1200	1400	1400	1900	1900	1200	1900	1400	2500	1400	2300
	Background*	MW-16	17	ND(5)	3.3j	3.3j	ND(5)	ND(5)	ND(5)	ND(5)	2.1j	ND(5)	ND(5)
	Background*	MW-18	4.4j	4.6j	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	3.9j	ND(5)	ND(5)
Northeast Drainage Ditch Area	Plume	MW-06	1200	1400	1400	1900	1900	1200	1900	1400	2500	1400	2300
	Plume	MW-09	590	380	480	340	230	750	580	450	1500	Damaged	Damaged
	Plume	MW-17	850	1400	910	930	640	470	300	390	550	300	140
	Plume	MW-19	590	1400	1200	1000	1400	1400	1200	1300	1300	780	700
	Background*	MW-16	17	ND(5)	3.3j	3.3j	ND(5)	ND(5)	ND(5)	ND(5)	2.1j	ND(5)	ND(5)
	Background*	MW-18	4.4j	4.6j	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	3.9j	ND(5)	ND(5)
	Background*	MW-20	3.5j	2.6j	ND(5)	ND(5)	ND(5)	2.7j	ND(5)	ND(5)	9.6	ND(5)	3.9j
	Background*	MW-21	2.8j	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	4.1j	ND(5)
	Background*	MW-22	100	71	41	19	33	46	55	36	16	11	9.7
Fill Area	Plume	MW-12	400	360	370	400	240	210	170	140	64	50	50
	Background*	MW-13	42	130	57	43	42	290	47	NA	NA	NA	NA
	Background*	MW-15	1400	1500	1800	2200	1900	2500	1900	1800	1800	1800	1300

Notes
µg/L - microgram per liter
* background or as defined in this report "plume defining well"
(1) Geochemical indicators of occurrence of natural attenuation were derived from the EPA publication
Policy on Use of Natural Attenuation for Site Remediation, 1997
(2) - Indicates suspect measurement likely due to instrument malfunction
NM - Not Measured
NA - Not Analyzed
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
j - Qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.

Table 3-3
Natural Attenuation Parameters
Comparison of Affected Wells to Background Wells

Gulf States Creosote Site
Hattiesburg, Mississippi

Indicator of Natural Attenuation [1]: Sulfate (mg/L)

Plume Concentration < Background Concentration

	Well Type	Well I.D.	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-04	Dec-05	Jan-07
Process Area	Plume	MW-1R	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	1.8j	1.5j	ND(5)	2.7j	1.9j
	Plume	MW-2R	19.9	18.8	20.9	21.2	19.3	20.9	21.8	19.9	17.9	18.8	19
	Plume	MW-06	3j	4.9j	3.7j	4.1j	6	4.8j	2.7j	5.2	3.4j	3.6j	1.9j
	Background*	MW-16	3.1j	2.7j	3.1j	15.3	5.9	9.1	12.6	26.6	9.1	18.6	6.2
	Background*	MW-18	10.3	9.2	9.1	7.9	9.8	8	8.6	8.9	9.7	9.8	9.7
Northeast Drainage Ditch Area	Plume	MW-06	3j	4.9j	3.7j	4.1j	6	4.8j	2.7j	5.2	3.4j	3.6j	1.9j
	Plume	MW-09	3.4j	6.6	4j	ND(5)	5.3	9.6	6.4	13.8	ND(5)	Damaged	Damaged
	Plume	MW-17	2.9j	2.1j	2.7j	3.8j	3.4j	3.1j	4.4j	5.6	6.3	9.8	6.7
	Plume	MW-19	6.7	4.3j	4.3j	ND(5)	3.3j	4.1j	4.7j	2.8j	2.1j	2.3j	2.1j
	Background*	MW-16	3.1j	2.7j	3.1j	15.3	5.9	9.1	12.6	26.6	9.1	18.6	6.2
	Background*	MW-18	10.3	9.2	9.1	7.9	9.8	8	8.6	8.9	9.7	9.8	9.7
	Background*	MW-20	3j	3.2j	2.2j	2.8j	3.9j	3.4j	3j	5.6	ND(5)	1.6j	5.5
	Background*	MW-21	3.1j	2.9j	2.7j	3j	3j	2.1j	2j	2.1j	2.4j	4.6j	3.4j
	Background*	MW-22	6.3	5j	4.9j	4.3j	5.4	5j	4.6j	4.1j	4.6j	5.2	5.2
Fill Area	Plume	MW-12	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	2.1j
	Background*	MW-13	3.7j	6.7	3.1j	2.7j	5.6j	22.9	4.1j	NA	NA	NA	NA
	Background*	MW-15	1.9j	3j	ND(5)	ND(5)	3.9j	2j	2j	1.9j	ND(5)	7	2.2j

Notes
mg/L - milligram per liter
* background or as defined in this report "plume defining well"
(1) Geochemical indicators of occurrence of natural attenuation were derived from the EPA publication
Policy on Use of Natural Attenuation for Site Remediation, 1997
(2) - Indicates suspect measurement likely due to instrument malfunction
NM - Not Measured
NA - Not Analyzed
ND - Constituent not detected at or above laboratory reporting limit shown in parentheses
j - Qualifier denotes estimated value either less than quantitation limit or due to limitations discovered by data validation effort.

Table 3-3
Natural Attenuation Parameters
Comparison of Affected Wells to Background Wells

Gulf States Creosote Site
Hattiesburg, Mississippi

Indicator of Natural Attenuation [1]: Nitrate (mg/L)

Plume Concentration < Background Concentration

	Well Type	Well I.D.	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-04	Dec-05	Jan-07
Process Area	Plume	MW-1R	ND(0.5)	ND(0.5)	ND(0.5)	0.61	0.7	1.1	0.81	1.4	1.5	ND(0.5)	1.6
	Plume	MW-2R	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	Plume	MW-06	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	Background*	MW-16	0.42j	0.68	0.75	1.09	1.05	1.4	1.3	1.6	1.3	1.2	1.1
	Background*	MW-18	0.79	0.87	1.5	2.07	1.51	1.7	1.9	2.2	1.1	1.5	1.1
Northeast Drainage Ditch Area	Plume	MW-06	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	Plume	MW-09	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	Damaged	Damaged
	Plume	MW-17	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	Plume	MW-19	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	Background*	MW-16	0.42j	0.68	0.75	1.09	1.05	1.4	1.3	1.6	1.3	1.2	1.1
	Background*	MW-18	0.79	0.87	1.5	2.07	1.51	1.7	1.9	2.2	1.1	1.5	1.1
	Background*	MW-20	0.56	0.41j	0.48j	0.52	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	0.45j	0.47j	0.32j
	Background*	MW-21	1.22	1.2	1.23	1.4	1.15	1	0.8	1.2	2	1.5	1.7
	Background*	MW-22	ND(0.5)	ND(0.5)	ND(0.5)	0.57	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	0.42j	0.54	0.37j
Fill Area	Plume	MW-12	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	Background*	MW-13	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	NA	NA	NA	NA
	Background*	MW-15	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

Notes
mg/L - milligram per liter
* background or as defined in this report "plume defining well"
(1) Geochemical indicators of occurrence of natural attenuation were derived from the EPA publication
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Appendix A

Site Background Information

Former Gulf States Creosoting Site
Hattiesburg, Mississippi

1.0 Introduction

This *Ground Water Monitoring Report* documents the results of ground water monitoring activities conducted at the former Gulf States Creosoting site in Hattiesburg, Mississippi from December 2001 through October 2003. Ground water monitoring was performed in accordance with the Mississippi Department of Environmental Quality (MDEQ)-approved *Ground Water Monitoring Plan* (Michael Pisani & Associates, June 25, 2001). This report is organized as follows:

- Section 1 includes background information on the site, a summary of previous ground water investigations, and information on the current ground water monitoring well network.
- Section 2 describes procedures for the collection, handling, and analysis of ground water samples.
- Section 3 presents the results from the initial eight quarterly sampling events, including potentiometric surface maps, tables summarizing analytical results, graphical charts, and a preliminary site-specific evaluation of monitored natural attenuation parameters.
- Section 4 presents proposed changes to the program for future ground water monitoring activities.

1.1 Site Description and Background

The former Gulf States Creosoting site is located in Hattiesburg, Mississippi near the intersection of U.S. Highways 49 and 11. The site is situated entirely within Section 16 of Township 4 North, Range 13 West, in Forrest County, Mississippi (Figure 1-1). Creosoting operations were conducted at the site between the early 1900s and approximately 1960. Wood treating operations were confined to a 2.5-acre area at the northeast corner of the site; this area is referred to as the former Process Area (see Figure 1-2).

The property was developed commercially beginning in approximately 1962. During the redevelopment of the site, fill materials containing creosote residuals were apparently placed in the southwestern portion of the site adjacent to Gordon's Creek; this area is referred to as the Fill Area. The original plant area is currently occupied by automobile dealerships, auto parts retailers, and other commercial operations (Figure 1-2).

1.2 Summary of Previous Ground Water Investigations

Ground water beneath the Gulf States Creosoting site has been studied extensively beginning in 1994. In 1994, Environmental Protection Systems (EPS) conducted a limited investigation of the former Process Area only, which included the installation of four ground water monitoring wells. From early 1997 through December 2001, Kerr-McGee Chemical, LLC (KMC) conducted ground water assessment activities during five different phases of investigation.

In February through April 1997, KMC conducted a Remedial Investigation (RI). The RI included detailed site-wide stratigraphic characterization, as well as the installation of four new monitoring wells. Water level data, ground water quality data, and aquifer characterization data were obtained from the four new wells and four existing wells.

In 1998, KMC conducted a Phase II RI. The Phase II RI included additional stratigraphic characterization, the collection of ground water samples from 13 temporary well points, the installation of eight new monitoring wells, and the collection of water level data and ground water quality data from the eight new wells and six of the existing wells.

In August and September 2000, KMC conducted additional site investigation activities. The additional activities included the collection of ground water samples from 18 temporary well points, the plugging and abandonment of three of the monitoring wells installed during the 1994 EPS investigation, the installation of two new monitoring wells, and the collection of water level data and ground water quality data from the two new wells and 13 existing wells.

In February and March 2001, KMC conducted additional site investigation activities. The additional activities included the collection of ground water samples from two temporary well points.

In June 2001, KMC submitted a *Ground Water Monitoring Plan* (GWMP) for the site. The plan included the installation of nine additional monitoring wells, with proposed locations based on the results of sampling from existing wells and temporary well points. LDEQ approved the GWMP, including the proposed monitoring well locations, in a letter dated July 17, 2001. The nine new monitoring wells were installed and developed in November and December 2001. Figure 1-3 depicts the locations of all monitoring wells in the existing monitoring network.

Major conclusions from these ground water investigations were:

- The shallow geology of the former Process Area and the Fill Area are significantly different. The shallow water bearing zones beneath the two areas are not hydraulically connected.
- Ground water flow within the sand channel beneath the former Process Area is eastward in the general direction of the Leaf River. Ground water flow continues in an easterly direction beneath the adjacent residential area. Ground water within the Fill Area sands flows toward Gordon's Creek and downstream along the creek. This provides further evidence that the shallow water bearing zones beneath the two areas are not hydraulically connected.
- Shallow ground water (i.e., ground water at depths less than 200 feet below land surface) is unused for any purpose in the Hattiesburg area. Furthermore, in 2001, the Hattiesburg City Council adopted an ordinance resolution prohibiting the development and use of ground water resources within the City limits.
- Ground water beneath the former Process Area has been impacted by historical creosoting operations. However, no free-phase DNAPLs are present in monitoring

wells within the former Process Area. Affected ground water does not extend westward, southward, or northward from the former Process Area.

- Creosote constituents have migrated offsite to the east of the former Process Area via the ground water pathway. However, the number and concentrations of constituents decrease dramatically with distance from the former Process Area. The former Process Area plume extends to a maximum distance of 500 feet offsite.
- Historically, a ditch that flowed offsite to the east from the former Process Area (the northeast drainage ditch) may have conveyed process wastewater from wood treating operations. Ground water beneath and immediately adjacent to this ditch has been impacted by the vertical migration of constituents from the ditch itself. Affected ground water is confined to a narrow band beneath and adjacent to the ditch.
- Affected ground water beneath the Fill Area is generally confined to portions of the site where historical filling with impacted materials occurred. The area containing affected ground water extends northward from the Fill Area in a narrow band along the east bank of Gordon's Creek.

1.3 Source Area Remediation

In 2003, KMC completed the vast majority (i.e., over 95 percent) of site remediation specified in the MDEQ-approved *Final Remedial Action Work Plan* (MP&A, August 3, 2001) and *Removal Action Work Plan – Northeast Drainage Ditch* (MP&A, August 21, 2002). Each of these plans included the removal and offsite disposal of materials that constituted potential sources of ground water contamination (i.e., free product or creosote-saturated soils). In addition, each plan included containment and control elements designed to either reduce the potential for migration of constituents via the ground water pathway or to preclude the potential for infiltration/percolation of water through affected soils left in place.

Specifically, cleanup activities undertaken in part to address affected ground water included the following:

- Approximately 2,400 tons of affected material and associated liquids were removed from two subsurface features within the former Process Area (the concrete sump and wooden substructure). Solids were transported and disposed offsite at a permitted Subtitle C landfill. Liquids were transported to KMC's facility in Texarkana, Texas facility for reuse/recycle.
- Affected soils remaining in place within the former Process Area were capped with an impermeable composite liner and 4 inches of asphalt.
- Approximately 13,300 tons of affected soils and debris were removed from the northeast drainage ditch. These materials were transported and disposed offsite at permitted Subtitle C and Subtitle D landfills.
- Prior to the installation of culvert pipe in the former ditch, HDPE liner was installed above potentially-affected soils remaining in place.
- Approximately 800 tons of affected sediment, soils, and associated liquids were removed from Gordon's Creek adjacent to the Fill Area. Solids were transported

and disposed offsite at a permitted Subtitle C landfill. Liquids were transported to KMC's facility in Columbus, Mississippi facility for reuse/recycle.

- A Waterloo Barrier System (i.e., interlocking sheet piling) was installed around the Fill Area to eliminate the potential for seepage of free product and affected ground water to Gordon's Creek. Geosynthetic Clay Liner (GCL) was installed above the Fill Area to reduce the potential for ground water mounding behind the sheet piling barrier.
- Monitoring and recovery wells were installed within the Fill Area containment cell to allow for the recovery of free product. Approximately 800 phreatophytic trees (i.e., hybrid poplars and black willows) were planted within the containment cell to uptake affected ground water.

These source removal/containment and control activities were all completed within the last 24 months, and their effects on reducing constituent concentrations in ground water will likely take time to observe. However, once source materials are removed and/or contained, monitored natural attenuation of ground water contamination typically becomes a viable ground water remedy.

Appendix B

January 2007 Laboratory Reports

Former Gulf States Creosoting Site
Hattiesburg, Mississippi

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

405-775-5429

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1020889. Samples arrived at the laboratory on Wednesday, January 10, 2007. The PO# for this group is ZAKW1CEOK0A50149.

Client Description	Lancaster Labs Number
DUP01 Grab Water Sample	4955351
MW-11 Grab Water Sample	4955352
MW-12 Grab Water Sample	4955353
MW-21 Grab Water Sample	4955354
MW-20 Grab Water Sample	4955355
MW-16 Grab Water Sample	4955356
MW-18 Grab Water Sample	4955357
Trip_Blank Water Sample	4955358

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Michael Pisani & Associates	Attn: David Upthegrove
ELECTRONIC COPY TO	Tronox LLC	Attn: Roy Widmann
1 COPY TO	Data Package Group	

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories

Questions? Contact your Client Services Representative
Gwen A Birchall at (717) 656-2300

Respectfully Submitted,

Robert Heisey
Sr. Specialist

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RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	*nephelometric turbidity units*
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955351

DUP01 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:12
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

2104D SDG#: HMS61-01FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	14.4		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	18.6		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	9.4		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	1.1		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	N.D.		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	280.		13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	9.3	J	17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	12.	J	17.	0.94	ug/l	1
00784	Fluorene	86-73-7	21.		0.84	0.52	ug/l	1
00785	Phenanthrene	85-01-8	17.		0.42	0.084	ug/l	1
00789	Anthracene	120-12-7	0.082	J	0.21	0.042	ug/l	1
00807	Fluoranthene	206-44-0	0.61		0.21	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.84	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.10	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.21	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.10	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.21	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.42	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.63	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.42	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.10	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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g	gram(s)	**kg**	kilogram(s)
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ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppb parts per billion

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955351

DUP01 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:12
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

2104D SDG#: HMS61-01FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:10	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 01:59	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 01:59	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 01:59	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 20:09	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 06:16	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

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g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppb parts per billion

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955352

MW-11 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 08:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:12
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10411 SDG#: HMS61-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	1.0 J	2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	7.2	2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	24.4	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	N.D.	5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.	14.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	19.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	19.	1.1	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.95	0.59	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.47	0.095	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.24	0.047	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.24	0.047	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.95	0.21	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.12	0.024	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.24	0.047	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.12	0.024	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.24	0.047	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.47	0.095	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.71	0.12	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.47	0.095	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.12	0.024	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955352

MW-11 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 08:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:12
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10411 SDG#: HMS61-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 09:41	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 03:26	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 03:26	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 03:26	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 20:22	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 06:55	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to *milligrams per liter (mg/l)*, because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955353

MW-12 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 09:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:12
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10412 SDG#: HMS61-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.869		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	54.6		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	2.8		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	2.1	J	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	50.		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	3.7	J	13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	2.1	J	17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		17.	0.95	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.84	0.53	ug/l	1
00785	Phenanthrene	85-01-8	0.097	J	0.42	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.21	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.21	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.84	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.21	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.21	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0,42	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.63	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.42	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

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U.S. EPA CLP Data Qualifiers:

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D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
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*****	Duplicate analysis not within control limits
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955353

MW-12 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 09:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:12
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10412 SDG#: HMS61-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:15	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 03:44	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 03:44	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 03:44	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 21:03	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 07:33	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

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g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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ppb parts per billion

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Organic Qualifiers

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Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
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U	Compound was not detected
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955354

MW-21 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 10:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10421 SDG#: HMS61-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	3.5		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	13.3		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	3.4	J	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	1.7		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	N.D.		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	N.D.		13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		17.	0.95	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.84	0.53	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.42	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.21	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.21	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.84	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.21	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.21	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.42	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.63	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.42	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.021	ug/l	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955354

MW-21 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 10:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10421 SDG#: HMS61-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:29	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 04:01	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 04:01	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 04:01	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 21:16	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 08:12	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955355

MW-20 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 14:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10420 SDG#: HMS61-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.136 J	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	11.7	2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	9.8	2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	5.5	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	0.32 J	0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	3.3 J	5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.	13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	17.	0.98	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.87	0.54	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.43	0.087	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.22	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.22	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.87	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.11	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.22	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.11	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.22	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.43	0.087	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.65	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.43	0.087	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.11	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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PO Box 12425
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2425 New Holland Pike • Lancaster, PA 17601

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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

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E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
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W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955355

MW-20 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 14:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10420 SDG#: HMS61-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:33	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 04:18	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 04:18	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 04:18	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 21:29	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 08:51	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories
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umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppb parts per billion

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E	Concentration exceeds the calibration range of the instrument
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Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955356

MW-16 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 15:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10416 SDG#: HMS61-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.980	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	6.1	2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	4.3	2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	6.2	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	1.1	0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	N.D.	5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.	13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	17.	0.98	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.87	0.55	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.44	0.087	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.22	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.22	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.87	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.11	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.22	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.11	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.22	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.44	0.087	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.66	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.44	0.087	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.11	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

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2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
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g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955356

MW-16 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 15:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10416 SDG#: HMS61-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:38	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 04:36	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 04:36	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 04:36	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 21:43	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 09:30	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	*none detected*	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	*milliliter*(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955357

MW-18 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 18:30 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10418 SDG#: HMS61-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	14.2		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	17.9		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	9.7		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	1.1		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	N.D.		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	290.		13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	9.0	J	17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	12.	J	17.	0.97	ug/l	1
00784	Fluorene	86-73-7	20.		0.86	0.54	ug/l	1
00785	Phenanthrene	85-01-8	17.		0.43	0.086	ug/l	1
00789	Anthracene	120-12-7	0.078	J	0.21	0.043	ug/l	1
00807	Fluoranthene	206-44-0	0.61		0.21	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.86	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.21	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.21	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.43	0.086	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.64	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.43	0.086	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

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ppb parts per billion

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D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
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X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955357

MW-18 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 18:30 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

10418 SDG#: HMS61-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:43	Joanne M Gates	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/15/2007 13:14	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 04:53	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 04:53	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 04:53	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 22:09	Robert I Pusch	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/12/2007 10:09	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1
03337	PAH Water Extraction	SW-846 3510C	1	01/11/2007 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

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umhos/cm	micromhos/cm		
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g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955358

Trip_Blank Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/19/2007 at 12:13
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

104TB SDG#: HMS61-08TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	N.D.	5.0	2.0	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/11/2007 22:23	Robert I Pusch	1

*=This limit was used in the evaluation of the final result

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g	gram(s)	**kg**	kilogram(s)
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ppb parts per billion

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X,Y,Z	Defined in case narrative

Inorganic Quallfiers

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC Group Number: 1020889
Reported: 01/19/07 at 12:13 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 07010196602A	Sample number(s): 4955351-4955357								
Chloride	N.D.	0.40	0.20	mg/l	102		90-110		
Sulfate	N.D.	1.0	0.30	mg/l	102		89-110		
Nitrate Nitrogen	N.D.	0.10	0.050	mg/l	97		90-110		
Batch number: 07010WAF026	Sample number(s): 4955351-4955357								
Naphthalene	N.D.	12.	1.3	ug/l	93	86	55-94	8	30
Acenaphthylene	N.D.	16.	1.4	ug/l	95	88	59-96	8	30
Acenaphthene	N.D.	16.	0.90	ug/l	95	88	60-116	7	30
Fluorene	N.D.	0.80	0.50	ug/l	100	93	66-106	8	30
Phenanthrene	N.D.	0.40	0.080	ug/l	102	94	67-115	8	30
Anthracene	N.D.	0.20	0.040	ug/l	95	88	67-109	7	30
Fluoranthene	N.D.	0.20	0.040	ug/l	96	89	70-112	8	30
Pyrene	N.D.	0.80	0.18	ug/l	97	91	69-113	6	30
Benzo(a)anthracene	N.D.	0.10	0.020	ug/l	98	93	73-114	6	30
Benzo(b)fluoranthene	N.D.	0.20	0.040	ug/l	97	92	72-113	6	30
Benzo(a)pyrene	N.D.	0.10	0.020	ug/l	100	92	68-112	8	30
Dibenz(a,h)anthracene	N.D.	0.20	0.040	ug/l	86	79	30-121	9	30
Indeno(1,2,3-cd)pyrene	N.D.	0.40	0.080	ug/l	98	92	60-111	6	30
Benzo(g,h,i)perylene	N.D.	0.60	0.10	ug/l	84	77	9-127	8	30
Chrysene	N.D.	0.40	0.080	ug/l	98	95	70-111	3	30
Benzo(k)fluoranthene	N.D.	0.10	0.020	ug/l	98	92	72-119	7	30
Batch number: 070110020A	Sample number(s): 4955351-4955358								
Methane	N.D.	5.0	2.0	ug/l	92		80-120		
Batch number: 070121848003	Sample number(s): 4955351-4955357								
Iron	N.D.	0.200	0.0522	mg/l	99		90-112		
Batch number: 07015020201A	Sample number(s): 4955351-4955357								
Alkalinity to pH 4.5					100		98-103		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07010196602A	Sample number(s): 4955351-4955357 UNSPK: 4955351 BKG: 4955351								
Chloride	121*		90-110			18.6	17.7	5*	3
Sulfate	123*		90-110			9.4	8.9	5* (1)	3
Nitrate Nitrogen	113*		90-110			1.1	1.0	5* (1)	2

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meq	milliequivalents	**lb.**	pound(s)
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ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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ppb parts per billion

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC
Reported: 01/19/07 at 12:13 PM

Group Number: 1020889

Sample Matrix Quality Control

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Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 070110020A	Sample number(s): 4955351-4955358 UNSPK: 4955352								
Methane	90	90	63-124	0	20				
Batch number: 070121848003	Sample number(s): 4955351-4955357 UNSPK: 4955352 BKG: 4955352								
Iron	102	103	75-125	1	20	N.D.	N.D.	6 (1)	20
Batch number: 07015020201A	Sample number(s): 4955351-4955357 UNSPK: P956267 BKG: P956267								
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Alkalinity to pH 4.5	76	55*	64-130	23*	2	51.0	48.9	4	4

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH's in Water by HPLC
Batch number: 07010WAF026

	Nitrobenzene	Triphenylene
4955351	103	100
4955352	95	95
4955353	102	102
4955354	104	97
4955355	101	94
4955356	102	97
4955357	103	103
Blank	100	100
LCS	105	104
LCSD	100	99
Limits:	71-128	55-130

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 070110020A

	Propene
4955351	69
4955352	63
4955353	74
4955354	70
4955355	60
4955356	59
4955357	59
4955358	77
Blank	92
LCS	92
MS	62
MSD	62

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Lancaster Laboratories

Quality Control Summary

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Reported: 01/19/07 at 12:13 PM

Group Number: 1020889

Surrogate Quality Control

Limits: 38-129

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Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11947 Group# 1020889 Sample # 4955351-58

COC # 0141759

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: MP+A Acct. #:

Project Name/#: 21-04 PWSID #:

Project Manager: DAVE UP. P.O.#: 21-04

Sampler: BRAD BLALOCK Quote #:

Name of state where samples were collected: MS

For Lab Use Only
FSC:
SCR#:

(5) Preservation Codes

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(6)

(2)			(3)	(4) PAH's 8270	Chloride, Sulfate	Tot+Diss Fe	Nitrate	Methane	ALK	Remarks
DUPOL	01/09/17	0000	X	2	1	2	1	2	1	
MW-11		0600		1	1	2	1	2	1	
MW-12		0900		1	1	2	1	2	1	
MW-21		1000		1	1	2	1	2	1	
MW-20		1400		1	1	2	1	2	1	
MW-16		1500		2	1	2	1	2	1	
MW-18		0630		2	1	2	1	2	1	
TRIP BLANK										

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

Rush results requested by (please circle): Phone Fax E-mail

Phone #: Fax #:

E-mail address:

(8) **Data Package Options** (please circle if required)

Type I (validation/NJ Reg)
Type II (Tier II)
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

TX TRRP-13
MA MCP CT RCP

SDG Complete? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC samples and submit triplicate volume.)

Internal COC Required? Yes / No

(9) Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	01/09/17	1830			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: Ice 3.2°C	1/10/17	0900

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

405-775-5429

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1020903. Samples arrived at the laboratory on Wednesday, January 10, 2007. The PO# for this group is ZAKW1CEOK0A50149.

Client Description	Lancaster Labs Number
DUP01 Filtered Grab Water Sample	4955410
MW-11 Filtered Grab Water Sample	4955411
MW-12 Filtered Grab Water Sample	4955412
MW-21 Filtered Grab Water Sample	4955413
MW-20 Filtered Grab Water Sample	4955414
MW-16 Filtered Grab Water Sample	4955415
MW-18 Filtered Grab Water Sample	4955416

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Michael Pisani & Associates	Attn: David Upthegrove
ELECTRONIC COPY TO	Tronox LLC	Attn: Roy Widmann
1 COPY TO	Data Package Group	

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Lancaster Laboratories

Questions? Contact your Client Services Representative
Gwen A Birchall at (717) 656-2300

Respectfully Submitted,

Max E. Snavely
Senior Specialist

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955410

DUP01 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

DUP1F SDG#: HMS62-01FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:48	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955411

MW-11 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 08:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

MW11F SDG#: HMS62-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:52	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value -- The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955412

MW-12 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 09:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

MW12F SDG#: HMS62-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.582	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 10:57	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955413

MW-21 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 10:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

MW21F SDG#: HMS62-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 11:02	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955414

MW-20 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 14:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

MW20F SDG#: HMS62-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 11:07	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955415

MW-16 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 15:00 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

MW16F SDG#: HMS62-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.342	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 11:11	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

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N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value -- The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4955416

MW-18 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/09/2007 18:30 by BB

Account Number: 11947

Submitted: 01/10/2007 09:00
Reported: 01/15/2007 at 18:18
Discard: 03/17/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

MW18F SDG#: HMS62-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/15/2007 11:26	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/13/2007 18:25	Helen L Schaeffer	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories
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Explanation of Symbols and Abbreviations

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N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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Quality Control Summary

Client Name: Tronox LLC Group Number: 1020903
Reported: 01/15/07 at 06:18 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 070121848003	Sample number(s): 4955410-4955416								
Iron	N.D.	0.200	0.0522	mg/l	99		90-112		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 070121848003	Sample number(s): 4955410-4955416 UNSPK: P955352 BKG: P955352								
Iron	102	103	75-125	1	20	N.D.	N.D.	6 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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2425 New Holland Pike • Lancaster, PA 17601

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Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11947 Group# 1020889 Sample # 4955351-58
1020903 4955410-16

COC # 0141759

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: MP+A Acct. #:
Project Name/#: 21-04 PWSID #:
Project Manager: DAVE UP. P.O.#: 21-04
Sampler: BRAD BLALOCK Quote #:
Name of state where samples were collected: MS

(2) Sample Identification | (3) Date Collected | Time Collected | Matrix | Sample Type | Number of Containers | (4) | (5) Preservation Codes: PAH's 8270 | Chloride, Sulfate | Tot+Diss Fe | Nitrate | Methane | ALK

Sample Identification	Date Collected	Time Collected	Matrix	PAH's 8270	Chloride, Sulfate	Tot+Diss Fe	Nitrate	Methane	ALK	Remarks
Dupol	01/09/07	0000	K	2	1	2	1	2	1	
MW-11		0600		1	1	2	1	2	1	
MW-12		0900		1	1	2	1	2	1	
MW-21		1000		1	1	2	1	2	1	
MW-20		1400		1	1	2	1	2	1	
MW-16		1500		2	1	2	1	2	1	
MW-18	↓	1630		2	1	2	1	2	1	
TRIP BLANK										

(6) **For Lab Use Only**
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

Remarks

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg)
Type II (Tier II)
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)
TX TRRP-13
MA MCP CT RCP
SDG Complete? Yes No
Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	01/09/07	1830			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: [signature]	1/10/07	0900

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

405-775-5429

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1021308. Samples arrived at the laboratory on Thursday, January 11, 2007. The PO# for this group is ZAKW1CEOK0A50149.

Client Description	Lancaster Labs Number
MW-R1 Grab Water Sample	4957385
MW-04 Grab Water Sample	4957386
MW-22 Grab Water Sample	4957387
MW-19 Grab Water Sample	4957388
MW-17_Unspiked Grab Water Sample	4957389
MW-17_Matrix_Spike Grab Water Sample	4957390
MW-17_ Matrix_Spike_Dup. Grab Water Sample	4957391
MW-17_Duplicate Grab Water Sample	4957392
MW-08 Grab Water Sample	4957393
MW-06 Grab Water Sample	4957394
Trip_Blank Water Sample	4957395

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Michael Pisani & Associates	Attn: David Upthegrove
1 COPY TO	Data Package Group	

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Questions? Contact your Client Services Representative
Gwen A Birchall at (717) 656-2300

Respectfully Submitted,

Max E. Snavely
Senior Specialist

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957385

MW-R1 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 07:00 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

1RHAT SDG#: HMS61-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	44.7	2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	7.2	2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	1.9	1.0	0.30	mg/l	1
00368	Nitrate Nitrogen	14797-55-8	1.6	0.10	0.050	mg/l	1
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	10.	5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.	14.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	18.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	18.	1.0	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.90	0.56	ug/l	1
00785	Phenanthrene	85-01-8	1.0	0.45	0.090	ug/l	1
00789	Anthracene	120-12-7	0.29	0.23	0.045	ug/l	1
00807	Fluoranthene	206-44-0	1.6	0.23	0.045	ug/l	1
00811	Pyrene	129-00-0	1.1	0.90	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.044 J	0.11	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.23	0.045	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.11	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.23	0.045	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.45	0.090	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.68	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.45	0.090	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.11	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957385

MW-R1 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 07:00 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

1RHAT SDG#: HMS61-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 02:59	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/11/2007 23:56	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/11/2007 23:38	Ashley M Heckman	1
00368	Nitrate Nitrogen	EPA 300.0	1	01/11/2007 23:38	Ashley M Heckman	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 17:34	Glorines Suarez-Rivera	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 19:25	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

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RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value -- The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

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U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957386

MW-04 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 08:00 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

04HAT SDG#: HMS61-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	16.4	2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	7.1	2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	N.D.	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.	0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	N.D.	5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	38.	13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	18.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	18.	1.0	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.89	0.55	ug/l	1
00785	Phenanthrene	85-01-8	0.16 J	0.44	0.089	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.22	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.22	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.89	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.11	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.22	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.11	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.22	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.44	0.089	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.67	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.44	0.089	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.11	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957386

MW-04 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 08:00 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

04HAT SDG#: HMS61-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 03:13	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 00:13	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 00:13	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 00:13	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 17:47	Glorines Suarez-Rivera	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 20:04	Mark A Clark	1
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957387

MW-22 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 11:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

22HAT SDG#: HMS61-11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	14.2		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	32.8		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	10.8		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	5.2		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	0.37	J	0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	9.7		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	N.D.		15.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		20.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		20.	1.1	ug/l	1
00784	Fluorene	86-73-7	N.D.		1.0	0.62	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.50	0.10	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.25	0.050	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.25	0.050	ug/l	1
00811	Pyrene	129-00-0	N.D.		1.0	0.22	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.12	0.025	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.25	0.050	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.12	0.025	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.25	0.050	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.50	0.10	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.75	0.12	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.50	0.10	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.12	0.025	ug/l	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957387

MW-22 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 11:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

22HAT SDG#: HMS61-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

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00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 00:31	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 00:31	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 00:31	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 18:00	Glorines Suarez-Rivera	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 20:43	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

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RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

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A	TIC is a possible aldol-condensation product
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X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957388

MW-19 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 13:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

19HAT SDG#: HMS61-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	8.00		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	109.		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	10.3		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	2.1	J	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	700.		25.	10.	ug/l	5
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	270.		14.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		26.	26.	ug/l	1
00783	Acenaphthene	83-32-9	46.		19.	1.1	ug/l	1
00784	Fluorene	86-73-7	22.		0.94	0.59	ug/l	1
00785	Phenanthrene	85-01-8	19.		2.3	0.47	ug/l	5
00789	Anthracene	120-12-7	2.0		0.23	0.047	ug/l	1
00807	Fluoranthene	206-44-0	1.8		0.23	0.047	ug/l	1
00811	Pyrene	129-00-0	0.84	J	0.94	0.21	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.12	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.23	0.047	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.12	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.23	0.047	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.47	0.094	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.70	0.12	ug/l	1
07409	Chrysene	218-01-9	0.12	J	0.47	0.094	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.12	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for acenaphthylene. The reporting limit for this compound was raised accordingly.

*=This limit was used in the evaluation of the final result

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ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957388

MW-19 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 13:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

19HAT SDG#: HMS61-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 03:22	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 00:48	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 00:48	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 00:48	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/18/2007 19:04	Glorines Suarez-Rivera	5
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 21:21	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/17/2007 02:57	Mark A Clark	5
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957389

MW-17_Unspiked Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17HAT SDG#: HMS61-13BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	3.45		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	13.0		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	14.9		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	6.7		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	140.		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	9.6	J	13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		18.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	2.1	J	18.	1.0	ug/l	1
00784	Fluorene	86-73-7	1.4		0.89	0.56	ug/l	1
00785	Phenanthrene	85-01-8	0.56		0.45	0.089	ug/l	1
00789	Anthracene	120-12-7	0.058	J	0.22	0.045	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.22	0.045	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.89	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.22	0.045	ug/l	1
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00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.45	0.089	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.67	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.45	0.089	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

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Lancaster Laboratories

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MW-17_Unspiked Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17HAT SDG#: HMS61-13BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 02:26	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 01:23	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 01:23	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 01:23	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 18:27	Glorines Suarez-Rivera	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 16:50	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

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Explanation of Symbols and Abbreviations

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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

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W	*Post digestion spike out of control limits*
*****	Duplicate analysis not within control limits
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957390

MW-17 Matrix Spike Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:45 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17HAT SDG#: HMS61-13MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	3.77	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	202.	2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	30.9	4.0	2.0	mg/l	10
00228	Sulfate	14808-79-8	56.4	10.0	3.0	mg/l	10
00368	Nitrate Nitrogen	14797-55-8	14.8	1.0	0.50	mg/l	10
	The second trial run past hold for nitrate yielded a 99% recovery. The result was 9.9138 mg/L.						
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	180.	10.	4.0	ug/l	2
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	210.	13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	180.	17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	180.	17.	0.96	ug/l	1
00784	Fluorene	86-73-7	23.	0.85	0.53	ug/l	1
00785	Phenanthrene	85-01-8	7.8	0.43	0.085	ug/l	1
00789	Anthracene	120-12-7	3.1	0.21	0.043	ug/l	1
00807	Fluoranthene	206-44-0	2.9	0.21	0.043	ug/l	1
00811	Pyrene	129-00-0	20.	0.85	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.5	0.11	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.2	0.21	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.5	0.11	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.8	0.21	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.8	0.43	0.085	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	11.	0.64	0.11	ug/l	1
07409	Chrysene	218-01-9	5.9	0.43	0.085	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.2	0.11	0.021	ug/l	1
	Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.						

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957390

MW-17_Matrix_Spike Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:45 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17HAT SDG#: HMS61-13MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

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Laboratory Chronicle

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01754	Iron	SW-846 6010B	1	01/17/2007 02:40	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/15/2007 15:25	Ashley M Heckman	10
00228	Sulfate	EPA 300.0	1	01/15/2007 15:25	Ashley M Heckman	10
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 03:07	Ashley M Heckman	10
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/18/2007 19:18	Glorines Suarez-Rivera	2
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07106	Methane	74-82-8	140.	10.	4.0	ug/l	2
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00775	Naphthalene	91-20-3	220.	14.	1.5	ug/l	1
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00784	Fluorene	86-73-7	24.	0.92	0.57	ug/l	1
00785	Phenanthrene	85-01-8	8.2	0.46	0.092	ug/l	1
00789	Anthracene	120-12-7	3.3	0.23	0.046	ug/l	1
00807	Fluoranthene	206-44-0	3.1	0.23	0.046	ug/l	1
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17HAT SDG#: HMS61-13MSD

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meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957392

MW-17 Duplicate Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17HAT SDG#: HMS61-13DUP

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	3.51		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	13.3		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	11.6		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	7.6		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	0.37	J	0.50	0.25	mg/l	5

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 02:35	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 02:49	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 02:49	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 02:49	Ashley M Heckman	5
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

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N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957393

MW-08 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 15:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

08HAT SDG#: HMS61-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	2.7		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	12.2		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	4.2	J	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	1.9		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	N.D.		5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	N.D.		13.	1.4	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		17.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		17.	0.98	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.87	0.54	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.43	0.087	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.22	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.22	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.87	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.22	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.22	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.43	0.087	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.65	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.43	0.087	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
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meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

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ppb parts per billion

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Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
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WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957393

MW-08 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 15:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

08HAT SDG#: HMS61-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 03:27	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 01:40	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 01:40	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 01:40	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 19:20	Glorines Suarez-Rivera	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 22:39	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories
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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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> greater than

J estimated value -- The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

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E	Concentration exceeds the calibration range of the instrument
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X,Y,Z	Defined in case narrative

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957394

MW-06 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 16:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

06HAT SDG#: HMS61-15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	26.1		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	98.2		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	7.6		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	1.9	J	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	2,300.		1,300.	500.	ug/l	250
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	6,500.		270.	29.	ug/l	20
00782	Acenaphthylene	208-96-8	N.D.		160.	160.	ug/l	1
00783	Acenaphthene	83-32-9	120.		18.	1.0	ug/l	1
00784	Fluorene	86-73-7	94.		18.	11.	ug/l	20
00785	Phenanthrene	85-01-8	76.		9.0	1.8	ug/l	20
00789	Anthracene	120-12-7	7.1		0.23	0.045	ug/l	1
00807	Fluoranthene	206-44-0	2.5		0.23	0.045	ug/l	1
00811	Pyrene	129-00-0	0.82	J	0.90	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.23	0.045	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.23	0.045	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.45	0.090	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.68	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.45	0.090	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for acenaphthylene. The reporting limit for this compound was raised accordingly.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories
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umhos/cm	micromhos/cm		
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g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957394

MW-06 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 16:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

06HAT SDG#: HMS61-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 03:32	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/12/2007 02:32	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/12/2007 02:32	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/12/2007 02:32	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/18/2007 17:56	Glorines Suarez-Rivera	250
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 23:18	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/17/2007 03:43	Mark A Clark	20
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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> greater than

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ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

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X,Y,Z	Defined in case narrative

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957395

Trip Blank Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected: n.a.

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17TBT SDG#: HMS61-16TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
07105	Volatile Headspace Hydrocarbon						
07106	Methane	74-82-8	N.D.	5.0	2.0	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 19:46	Glorines Suarez-Rivera	1

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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	*milliequivalents*	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC Group Number: 1021308
Reported: 01/22/07 at 03:03 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 07011196102A	Sample number(s): 4957385-4957390,4957392-4957394								
Chloride	N.D.	0.40	0.20	mg/l	93		90-110		
Sulfate	N.D.	1.0	0.30	mg/l	99		89-110		
Nitrate Nitrogen	N.D.	0.10	0.050	mg/l	99		90-110		
Batch number: 07012WAC026	Sample number(s): 4957385-4957391,4957393-4957394								
Naphthalene	N.D.	12.	1.3	ug/l	79		55-94		
Acenaphthylene	N.D.	16.	1.4	ug/l	82		59-96		
Acenaphthene	N.D.	16.	0.90	ug/l	82		60-116		
Fluorene	N.D.	0.80	0.50	ug/l	88		66-106		
Phenanthrene	N.D.	0.40	0.080	ug/l	89		67-115		
Anthracene	N.D.	0.20	0.040	ug/l	87		67-109		
Fluoranthene	N.D.	0.20	0.040	ug/l	84		70-112		
Pyrene	N.D.	0.80	0.18	ug/l	89		69-113		
Benzo(a)anthracene	N.D.	0.10	0.020	ug/l	89		73-114		
Benzo(b)fluoranthene	N.D.	0.20	0.040	ug/l	87		72-113		
Benzo(a)pyrene	N.D.	0.10	0.020	ug/l	91		68-112		
Dibenz(a,h)anthracene	N.D.	0.20	0.040	ug/l	88		30-121		
Indeno(1,2,3-cd)pyrene	N.D.	0.40	0.080	ug/l	91		60-111		
Benzo(g,h,i)perylene	N.D.	0.60	0.10	ug/l	86		9-127		
Chrysene	N.D.	0.40	0.080	ug/l	89		70-111		
Benzo(k)fluoranthene	N.D.	0.10	0.020	ug/l	88		72-119		
Batch number: 070160021A	Sample number(s): 4957385-4957391,4957393-4957395								
Methane	N.D.	5.0	2.0	ug/l	97		80-120		
Batch number: 07016020201A	Sample number(s): 4957385-4957394								
Alkalinity to pH 4.5					101		98-103		
Batch number: 070161848001	Sample number(s): 4957385-4957394								
Iron	N.D.	0.200	0.0522	mg/l	96		90-112		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc		DUP RPD	Dup RPD Max
Batch number: 07011196102A	Sample number(s): 4957385-4957390,4957392-4957394					UNSPK: 4957389		BKG: 4957389		
Chloride	80*		90-110			14.9	11.6		25*	3
Sulfate	99		90-110			6.7	7.6		13* (1)	3
Nitrate Nitrogen	148*		90-110			N.D.	0.37	J	200* (1)	2

*- Outside of specification
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g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppb parts per billion

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC Group Number: 1021308
Reported: 01/22/07 at 03:03 PM

Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07012WAC026	Sample number(s): 4957385-4957391,4957393-4957394 UNSPK: 4957389								
Naphthalene	93	93	54-112	7	30				
Acenaphthylene	84	83	63-104	6	30				
Acenaphthene	85	84	59-114	7	30				
Fluorene	102	99	66-102	4	30				
Phenanthrene	114	110	66-115	4	30				
Anthracene	95	93	68-104	5	30				
Fluoranthene	91	89	67-104	5	30				
Pyrene	92	90	66-106	5	30				
Benzo(a)anthracene	93	90	63-111	4	30				
Benzo(b)fluoranthene	91	88	71-106	4	30				
Benzo(a)pyrene	94	92	69-109	4	30				
Dibenz(a,h)anthracene	87	83	62-115	3	30				
Indeno(1,2,3-cd)pyrene	91	88	56-112	4	30				
Benzo(g,h,i)perylene	85	82	56-115	4	30				
Chrysene	92	89	69-107	4	30				
Benzo(k)fluoranthene	92	89	70-109	5	30				
Batch number: 070160021A	Sample number(s): 4957385-4957391,4957393-4957395 UNSPK: 4957389								
Methane	33*	0*	63-124	25*	20				
Batch number: 07016020201A	Sample number(s): 4957385-4957394 UNSPK: 4957389 BKG: 4957389								
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Alkalinity to pH 4.5	100	101	64-130	0	2	13.0	13.3	2	4
Batch number: 070161848001	Sample number(s): 4957385-4957394 UNSPK: 4957389 BKG: 4957389								
Iron	31*	84	75-125	13	20	3.45	3.51	2	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH's in Water by HPLC
Batch number: 07012WAC026

	Nitrobenzene	Triphenylene
4957385	93	88
4957386	100	92
4957387	101	93
4957388	103	93
4957389	100	90
4957390	107	95
4957391	102	91
4957393	104	93
4957394	103	89
Blank	103	96
LCS	97	92

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g	gram(s)	**kg**	kilogram(s)
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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC
Reported: 01/22/07 at 03:03 PM

Group Number: 1021308

Surrogate Quality Control

MS	107	95
MSD	102	91
Limits:	71-128	55-130

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 070160021A

	Propene
4957385	83
4957386	82
4957387	51
4957388	89
4957389	84
4957390	88
4957391	87
4957393	81
4957394	94
4957395	89
Blank	95
LCS	94
MS	88
MSD	87
Limits:	38-129

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	*none detected*	**MPN**	*Most Probable Number*
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> *greater than*

J estimated value -- The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

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E	Concentration exceeds the calibration range of the instrument
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X,Y,Z	Defined in case narrative

Inorganic Qualifiers

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Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11947 Group# 1021308 Sample # 4957385-95

COC # 0141762

Please print. Instructions on reverse side correspond with circled numbers.

For Lab Use Only
FSC: _____
SCR#: _____

(1) Client: MICHAEL PISANI & ASSOC Acct. #: _____
Project Name/#: HATTIESBURG, MS PWSID #: _____
Project Manager: DAVE UPTHEGROVE P.O.#: 21-04
Sampler: BRAD BLALOCK (BMB) Quote #: _____
Name of state where samples were collected: MS.

(4) Matrix

(5) Analyses Requested — Preservation Codes

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(6) Temperature of samples upon receipt (if requested)

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Comp	Soil	Water	Other	Total # containers	PAH's by 8310	Chloride, Sulfate	Tot. & Diss. Iron	Nitrate	Methane H	Alkalinity	Remarks
MW-1R	01/10/07	0700	X			X		10	2	1	2	2	2	1	
MW-04		0800	X			X									
MW-22		1130	X			X									
MW-19		1330	X			X									
MW-17		1430	X			X									
MW-17MS/MSD		1445	X			X									
MW-08		1530	X			X									
MW-06		1630	X			X									
TRIP BLANK	—	—	—					1					X		

(7) **Turnaround Time Requested** (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: _____
Rush results requested by (please circle): Phone Fax E-mail
Phone #: _____ Fax #: _____
E-mail address: _____

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg)
Type II (Tier II)
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)
TX TRRP-13
MA MCP CT RCP

SDG Complete? Yes (No)

Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No _____

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
B M Blalock	1/10/07	1815			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: Kathy Brinkley	1-11-07	0905

Directions For Completing This Form

(1) **Client:** Your company's name

Acct. #: Your account number with Lancaster Laboratories

Project Name/#: The way your company refers to the work involved with these samples. You may want to include project location as part of the description.

PWSID: Potable Water Source ID#

Project Manager: The person at your company responsible for overseeing the project

P.O.#: Your company's purchase order number

Sampler: The name of the person who collected the samples

Quote #: The reference number that appears on your quote (if Lancaster Laboratories gave you a number)

State where sample was collected: Please indicate where the sample was taken, e.g., PA, NJ, etc.

(2) **Sample Identification:** The unique sample description you want to appear on the analytical report

Date Collected/Time Collected: When the sample was collected

(3) **Grab:** Check here if sample was taken at one time from a single spot.

Composite: Check here if samples were taken from more than one spot, or periodically, and combined to make one sample.

(4) **Matrix:** Check the type of sample you are submitting. If it is a water sample, please indicate if it is a potable water or if it is an NPDES sample.

Number of Containers: Indicate the total number of containers for each sampling point.

(5) **Analyses Requested:** Write the name of each analysis (or an abbreviation of it) here, and use the **catalog number** that appears at the beginning of each line in the *Schedule of Services*. Be sure to indicate which analyses are to be performed on which samples.

(6) **Remarks:** List special instructions about the sample here (e.g., hazardous elements, high levels of analyte, etc.). The space can also be used (if needed) for listing additional analyses.

(7) **Turnaround Time Requested:** Circle **Normal** if you want routine TAT, which is usually within 10-15 days. If you need your results faster, call ahead to schedule **Rush** work.

Rush Results Requested by: Circle **Fax** or **Phone** and include the number.

(8) **Data Package Options:** Call our Client Services Group (717-656-2300) if you have questions about these choices.

SDG Complete? Indicate **Yes** if this is a complete sample delivery group or **No** if you will be submitting additional samples to be included in the same data package.

Note: We need to have one quality control (QC) sample for every 20 samples you send, if you are requesting site-specific QC. Please give us this sample in triplicate volume and identify it by writing "QC" in the **Remarks** column.

The internal chain of custody is a hand-to-hand documentation recording a sample's movement throughout the company. We routinely start a chain of custody for data package samples unless we are told otherwise. There is a $25 **per sample** charge for the chain-of-custody documentation.

(9) **Relinquished by/Received by:** The form must be signed each time the sample changes hands. We can supply chain-of-custody seals for the outside of your packages if you require them.

Note: *Federal and State regulations require documentation of sample name and sampling location, date, and time in order for sample data to be legally defensible.*

Thank you for using Lancaster Laboratories.
Please call our Client Services Group (717-656-2300) if you have any questions about completing this form.

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

405-775-5429

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1021309. Samples arrived at the laboratory on Thursday, January 11, 2007. The PO# for this group is ZAKW1CEOK0A50149.

Client Description	Lancaster Labs Number
MW-1R_Filtered Grab Water Sample	4957396
MW-04_Filtered Grab Water Sample	4957397
MW-22_Filtered Grab Water Sample	4957398
MW-19_Filtered Grab Water Sample	4957399
MW-17_Filtered_Unspiked Grab Water Sample	4957400
MW-17_Filtered_Matrix_Spike Grab Water Sample	4957401
MW-17_Filtered_Matrix_ Spike_Dup. Grab Water	4957402
MW-17_Filtered_Duplicate Grab Water Sample	4957403
MW-08_Filtered Grab Water Sample	4957404
MW-06_Filtered Grab Water Sample	4957405

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Michael Pisani & Associates	Attn: David Upthegrove
1 COPY TO	Data Package Group	

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

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Lancaster Laboratories

Questions? Contact your Client Services Representative
Gwen A Birchall at (717) 656-2300

Respectfully Submitted,

Max E. Snavely

Max E. Snavely
Senior Specialist

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957396

MW-1R Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 07:00 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

1RFMT SDG#: HMS62-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 10:54	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957397

MW-04 Filtered Grab Water Sample
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Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

04FMT SDG#: HMS62-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

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01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

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M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957398

MW-22_Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 11:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

22FMT SDG#: HMS62-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.185 J	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:09	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957399

MW-19 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 13:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

19FMT SDG#: HMS62-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	7.54	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:13	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

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RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value -- The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957400

MW-17_Filtered_Unspiked Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17FMT SDG#: HMS62-12BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	2.19	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 10:31	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957401

MW-17_Filtered_Matrix_Spike Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:45 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17FMT SDG#: HMS62-12MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	2.82	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 10:43	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm *parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.*

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957402

MW-17_Filtered_Matrix_ Spike_Dup. Grab Water
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:45 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17FMT SDG#: HMS62-12MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	2.86	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 10:46	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
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umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

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ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

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U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957403

MW-17_Filtered_Duplicate Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 14:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

17FMT SDG#: HMS62-12DUP

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	2.19	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 10:39	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

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Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
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*****	Duplicate analysis not within control limits
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957404

MW-08 Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 15:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

08FMT SDG#: HMS62-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:17	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

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meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
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ppb parts per billion

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Organic Qualifiers

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957405

MW-06_Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/10/2007 16:30 by BB

Account Number: 11947

Submitted: 01/11/2007 09:05
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

06FMT SDG#: HMS62-14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	25.8	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:20	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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ppb parts per billion

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC
Reported: 01/19/07 at 11:58 AM

Group Number: 1021309

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 070161848002	Sample number(s): 4957396-4957405								
Iron	N.D.	0.200	0.0522	mg/l	102		90-112		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 070161848002	Sample number(s): 4957396-4957405 UNSPK: 4957400 BKG: 4957400								
Iron	63*	67*	75-125	1	20	2.19	2.19	0	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

405-775-5429

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1021325. Samples arrived at the laboratory on Friday, January 12, 2007. The PO# for this group is ZAKW1CEOK0A50149.

Client Description	Lancaster Labs Number
MW-2R Grab Water Sample	4957573
MW-15 Grab Water Sample	4957574
MW-14 Grab Water Sample	4957575

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Michael Pisani & Associates	Attn: David Upthegrove
1 COPY TO	Data Package Group	

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Lancaster Laboratories

Questions? Contact your Client Services Representative
Gwen A Birchall at (717) 656-2300

Respectfully Submitted,

Max E. Snavely
Senior Specialist

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TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< *less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.*

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957573

MW-2R Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 07:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

2RHAT SDG#: HMS61-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.120	J	0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	21.9		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	5.5		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	19.0		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	2.3	J	5.0	2.0	ug/l	1
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	5,800.		270.	30.	ug/l	20
00782	Acenaphthylene	208-96-8	N.D.		110.	110.	ug/l	1
00783	Acenaphthene	83-32-9	47.		18.	1.0	ug/l	1
00784	Fluorene	86-73-7	54.		18.	11.	ug/l	20
00785	Phenanthrene	85-01-8	94.		9.1	1.8	ug/l	20
00789	Anthracene	120-12-7	N.D.		0.50	0.50	ug/l	1
00807	Fluoranthene	206-44-0	5.7		0.23	0.046	ug/l	1
00811	Pyrene	129-00-0	0.70	J	0.91	0.21	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.15		0.11	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	0.064	J	0.23	0.046	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.23	0.046	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.46	0.091	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.69	0.11	ug/l	1
07409	Chrysene	218-01-9	0.20	J	0.46	0.091	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	0.043	J	0.11	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Due to the presence of interferents near their retention times, normal reporting limits were not attained for several target compounds. The reporting limits for these compounds were raised accordingly.

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

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umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppb parts per billion

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Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957573

MW-2R Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 07:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

2RHAT SDG#: HMS61-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 03:36	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/13/2007 06:13	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/13/2007 06:13	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/13/2007 06:13	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/17/2007 22:11	Glorines Suarez-Rivera	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/15/2007 23:57	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	01/17/2007 04:28	Mark A Clark	20
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

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RL	*Reporting Limit*	**BMQL**	*Below Minimum Quantitation Level*
N.D.	none detected	**MPN**	Most Probable Number
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umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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> greater than

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ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

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A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
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B	Value is <CRDL, but ≥IDL
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957574

MW-15 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 08:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

15HAT SDG#: HMS61-18

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	35.9		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	171.		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	3.7		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	2.2	J	5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	1,300.		500.	200.	ug/l	100
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	N.D.		14.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		18.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		18.	1.0	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.91	0.57	ug/l	1
00785	Phenanthrene	85-01-8	0.10	J	0.45	0.091	ug/l	1
00789	Anthracene	120-12-7	0.080	J	0.23	0.045	ug/l	1
00807	Fluoranthene	206-44-0	0.69		0.23	0.045	ug/l	1
00811	Pyrene	129-00-0	0.49	J	0.91	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.11	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.23	0.045	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.11	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.23	0.045	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.45	0.091	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.68	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.45	0.091	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.11	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

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Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

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Collected:01/11/2007 08:00 by BB

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P.O. Box 268859
Oklahoma City OK 73126-8859

15HAT SDG#: HMS61-18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

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00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/13/2007 07:34	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/13/2007 07:34	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/13/2007 07:34	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/18/2007 18:50	Glorines Suarez-Rivera	100
00774	PAH's in Water by HPLC	SW-846 8310	1	01/16/2007 00:36	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957575

MW-14 Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 09:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/22/2007 at 15:03
Discard: 03/24/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

14HAT SDG#: HMS61-19*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	2.62		0.200	0.0522	mg/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.		2.0	0.46	mg/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	15.8		2.0	0.46	mg/l as CaCO3	1
00224	Chloride	16887-00-6	4.9		2.0	1.0	mg/l	5
00228	Sulfate	14808-79-8	17.5		5.0	1.5	mg/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.		0.50	0.25	mg/l	5
07105	Volatile Headspace Hydrocarbon							
07106	Methane	74-82-8	180.		10.	4.0	ug/l	2
00774	PAH's in Water by HPLC							
00775	Naphthalene	91-20-3	1.9	J	14.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		18.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	2.4	J	18.	1.0	ug/l	1
00784	Fluorene	86-73-7	0.99		0.92	0.58	ug/l	1
00785	Phenanthrene	85-01-8	0.35	J	0.46	0.092	ug/l	1
00789	Anthracene	120-12-7	0.049	J	0.23	0.046	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.23	0.046	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.92	0.21	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.12	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.23	0.046	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.12	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.23	0.046	ug/l	1
00898	*Indeno(1,2,3-cd)pyrene*	193-39-5	N.D.		0.46	0.092	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.69	0.12	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.46	0.092	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.12	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
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14HAT SDG#: HMS61-19*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 03:46	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	01/16/2007 09:07	Susan A Engle	1
00224	Chloride	EPA 300.0	1	01/13/2007 07:50	Ashley M Heckman	5
00228	Sulfate	EPA 300.0	1	01/13/2007 07:50	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	01/13/2007 07:50	Ashley M Heckman	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	01/18/2007 19:59	Glorines Suarez-Rivera	2
00774	*PAH's in Water by HPLC*	*SW-846 8310*	1	01/16/2007 01:14	Mark A Clark	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:07	James L Mertz	1
03337	PAH Water Extraction	SW-846 3510C	1	01/13/2007 02:20	Michael E Cunningham	1

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC Group Number: 1021325
Reported: 01/22/07 at 03:03 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 07012196602B	Sample number(s): 4957573-4957575								
Chloride	N.D.	0.40	0.20	mg/l	99		90-110		
Sulfate	N.D.	1.0	0.30	mg/l	98		89-110		
Nitrate Nitrogen	N.D.	0.10	0.050	mg/l	99		90-110		
Batch number: 07012WAC026	Sample number(s): 4957573-4957575								
Naphthalene	N.D.	12.	1.3	ug/l	79		55-94		
Acenaphthylene	N.D.	16.	1.4	ug/l	82		59-96		
Acenaphthene	N.D.	16.	0.90	ug/l	82		60-116		
Fluorene	N.D.	0.80	0.50	ug/l	88		66-106		
Phenanthrene	N.D.	0.40	0.080	ug/l	89		67-115		
Anthracene	N.D.	0.20	0.040	ug/l	87		67-109		
Fluoranthene	N.D.	0.20	0.040	ug/l	84		70-112		
Pyrene	N.D.	0.80	0.18	ug/l	89		69-113		
Benzo(a)anthracene	N.D.	0.10	0.020	ug/l	89		73-114		
Benzo(b)fluoranthene	N.D.	0.20	0.040	ug/l	87		72-113		
Benzo(a)pyrene	N.D.	0.10	0.020	ug/l	91		68-112		
Dibenz(a,h)anthracene	N.D.	0.20	0.040	ug/l	88		30-121		
Indeno(1,2,3-cd)pyrene	N.D.	0.40	0.080	ug/l	91		60-111		
Benzo(g,h,i)perylene	N.D.	0.60	0.10	ug/l	86		9-127		
Chrysene	N.D.	0.40	0.080	ug/l	89		70-111		
Benzo(k)fluoranthene	N.D.	0.10	0.020	ug/l	88		72-119		
Batch number: 070160021A	Sample number(s): 4957573-4957575								
Methane	N.D.	5.0	2.0	ug/l	97		80-120		
Batch number: 07016020201A	Sample number(s): 4957573-4957575								
Alkalinity to pH 4.5					101		98-103		
Batch number: 070161848001	Sample number(s): 4957573-4957575								
Iron	N.D.	0.200	0.0522	mg/l	96		90-112		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07012196602B	Sample number(s): 4957573-4957575 UNSPK: 4957573 BKG: 4957573								
Chloride	115*		90-110			5.5	5.6	0 (1)	3
Sulfate	114*		90-110			19.0	18.9	1 (1)	3
Nitrate Nitrogen	109		90-110			N.D.	N.D.	0 (1)	2

*- Outside of specification
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Quality Control Summary

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Reported: 01/22/07 at 03:03 PM

Sample Matrix Quality Control

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Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07012WAC026	Sample number(s): 4957573-4957575 UNSPK: P957389								
Naphthalene	93	93	54-112	7	30				
Acenaphthylene	84	83	63-104	6	30				
Acenaphthene	85	84	59-114	7	30				
Fluorene	102	99	66-102	4	30				
Phenanthrene	114	110	66-115	4	30				
Anthracene	95	93	68-104	5	30				
Fluoranthene	91	89	67-104	5	30				
Pyrene	92	90	66-106	5	30				
Benzo(a)anthracene	93	90	63-111	4	30				
Benzo(b)fluoranthene	91	88	71-106	4	30				
Benzo(a)pyrene	94	92	69-109	4	30				
Dibenz(a,h)anthracene	87	83	62-115	3	30				
Indeno(1,2,3-cd)pyrene	91	88	56-112	4	30				
Benzo(g,h,i)perylene	85	82	56-115	4	30				
Chrysene	92	89	69-107	4	30				
Benzo(k)fluoranthene	92	89	70-109	5	30				
Batch number: 070160021A	Sample number(s): 4957573-4957575 UNSPK: P957389								
Methane	33*	0*	63-124	25*	20				
Batch number: 07016020201A	Sample number(s): 4957573-4957575 UNSPK: P957389 BKG: P957389								
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Alkalinity to pH 4.5	100	101	64-130	0	2	13.0	13.3	2	4
Batch number: 070161848001	Sample number(s): 4957573-4957575 UNSPK: P957389 BKG: P957389								
Iron	31*	84	75-125	13	20	3.45	3.51	2	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PAH's in Water by HPLC
Batch number: 07012WAC026

	Nitrobenzene	Triphenylene
4957573	113	90
4957574	102	91
4957575	102	91
Blank	103	96
LCS	97	92
MS	107	95
MSD	102	91
Limits:	71-128	55-130

Analysis Name: Volatile Headspace Hydrocarbon

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Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC
Reported: 01/22/07 at 03:03 PM

Group Number: 1021325

Surrogate Quality Control

Batch number: 070160021A
Propene

4957573	88
4957574	96
4957575	83
Blank	95
LCS	94
MS	88
MSD	87
Limits:	38-129

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
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IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

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ppb parts per billion

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U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
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E	Concentration exceeds the calibration range of the instrument
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B	Value is <CRDL, but ≥IDL
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Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

405-775-5429

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1021326. Samples arrived at the laboratory on Friday, January 12, 2007. The PO# for this group is ZAKW1CEOK0A50149.

Client Description	Lancaster Labs Number
MW-2R_Filtered Grab Water Sample	4957576
MW-15_Filtered Grab Water Sample	4957577
MW-14_Filtered Grab Water Sample	4957578

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Michael Pisani & Associates	Attn: David Upthegrove
1 COPY TO	Data Package Group	

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Lancaster Laboratories

Questions? Contact your Client Services Representative
Gwen A Birchall at (717) 656-2300

Respectfully Submitted,

Max E. Snavely
Senior Specialist

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957576

MW-2R_Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 07:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

2RFMS SDG#: HMS62-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	0.100 J	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:24	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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meq	milliequivalents	**lb.**	pound(s)
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957577

MW-15_Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 08:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

15FMS SDG#: HMS62-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	36.8	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:28	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	01/16/2007 20:18	James L Mertz	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4957578

MW-14_Filtered Grab Water Sample
Gulf States Creosoting/Hattiesburg, MS

Collected:01/11/2007 09:00 by BB

Account Number: 11947

Submitted: 01/12/2007 09:35
Reported: 01/19/2007 at 11:58
Discard: 03/21/2007

Tronox LLC
P.O. Box 268859
Oklahoma City OK 73126-8859

14FMS SDG#: HMS62-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	1.45	0.200	0.0522	mg/l	1

This sample was field filtered for dissolved metals.

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	01/17/2007 11:32	Joanne M Gates	1
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*****	Duplicate analysis not within control limits
+	*Correlation coefficient for MSA <0.995*

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Lancaster Laboratories

Quality Control Summary

Client Name: Tronox LLC
Reported: 01/19/07 at 11:58 AM

Group Number: 1021326

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 070161848002	Sample number(s): 4957576-4957578								
Iron	N.D.	0.200	0.0522	mg/l	102		90-112		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 070161848002	Sample number(s): 4957576-4957578 UNSPK: P957400 BKG: P957400								
Iron	63*	67*	75-125	1	20	2.19	2.19	0	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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Lancaster, PA 17605-2425
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm		
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11947 Group# 102126 Sample # 495576-98 **COC #** 0141761

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: Michael Pisani & Assoc. Acct. #:

Project Name/#: Hattiesburg, MS. PWSID #:

Project Manager: Dave Uptegrove P.O.#: 21-04

Sampler: Brad Blalock (DMB) Quote #:

Name of state where samples were collected: MS.

(4) Matrix

(5) Analyses Requested — Preservation Codes

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(6) Temperature of samples upon receipt (if requested)

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Soil	Water	Other	Total # of Containers	PAH's by 8310	Chloride, Sulfate	Tot. & Diss. Iron	Nitrate	Methane	Alkalinity				Remarks
MW-2R	01/11/07	0700	X			X		10	2	1	2	2	2	1				
MW-15		0800	X			X		10	2	1	2	2	2	1				
MW-14		0900	X			X		10	2	1	2	2	2	1				

(7) **Turnaround Time Requested** (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg)
Type II (Tier II)
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)
TX TRRP-13
MA MCP CT RCP
SDG Complete? Yes (No)
Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

(9) Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	01/11/07	1200			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: Kathy Binkley	Date 1-12-07	Time 0935

Directions For Completing This Form

(1) **Client:** Your company's name

Acct. #: Your account number with Lancaster Laboratories

Project Name/#: The way your company refers to the work involved with these samples. You may want to include project location as part of the description.

PWSID: Potable Water Source ID#

Project Manager: The person at your company responsible for overseeing the project

P.O.#: Your company's purchase order number

Sampler: The name of the person who collected the samples

Quote #: The reference number that appears on your quote (if *Lancaster Laboratories gave you a number*)

State where sample was collected: Please indicate where the sample was taken, e.g., PA, NJ, etc.

(2) **Sample Identification:** The unique sample description you want to appear on the analytical report

Date Collected/Time Collected: When the sample was collected

(3) **Grab:** Check here if sample was taken at one time from a single spot.

Composite: Check here if samples were taken from more than one spot, or periodically, and combined to make one sample.

(4) **Matrix:** Check the type of sample you are submitting. If it is a water sample, please indicate if it is a potable water or if it is an NPDES sample.

Number of Containers: Indicate the total number of containers for each sampling point.

(5) **Analyses Requested:** Write the name of each analysis (or an abbreviation of it) here, and use the **catalog number** that appears at the beginning of each line in the *Schedule of Services*. Be sure to indicate which analyses are to be performed on which samples.

(6) **Remarks:** List special instructions about the sample here (e.g., hazardous elements, high levels of analyte, etc.). The space can also be used (if needed) for listing additional analyses.

(7) **Turnaround Time Requested:** Circle **Normal** if you want routine TAT, which is usually within 10-15 days. If you need your results faster, call ahead to schedule **Rush** work.

Rush Results Requested by: Circle **Fax** or **Phone** and include the number.

(8) **Data Package Options:** Call our Client Services Group (717-656-2300) if you have questions about these choices.

SDG Complete? *Indicate* **Yes** *if this is a complete sample delivery* group or **No** if you will be submitting additional samples to be included in the same data package.

Note: *We need to have one quality control (QC) sample for every 20 samples you send, if you are requesting site-specific QC. Please give us this sample in triplicate volume and identify it by writing "QC" in the* **Remarks** column.

The internal chain of custody is a hand-to-hand documentation recording a sample's movement throughout the company. We routinely start a chain of custody for data package samples unless we are told otherwise. There is a $25 **per sample** charge for the chain-of-custody documentation.

(9) **Relinquished by/Received by:** The form must be signed each time the sample changes hands. We can supply chain-of-custody seals for the outside of your packages if you require them.

Note: *Federal and State regulations require documentation of sample name and sampling location, date, and time in order for sample data to be legally defensible.*

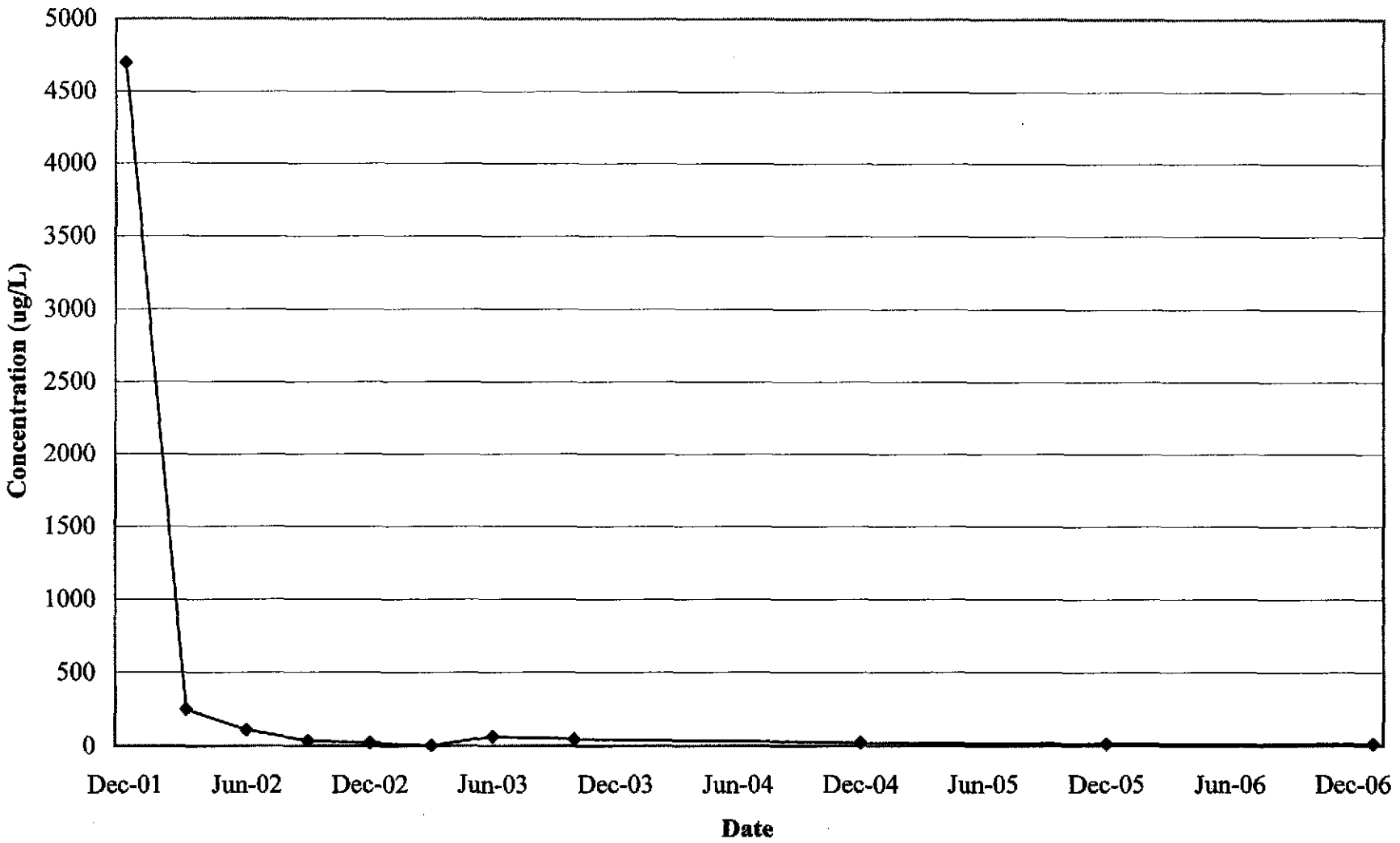
Thank you for using Lancaster Laboratories.
Please call our Client Services Group (717-656-2300) if you have any questions about completing this form.

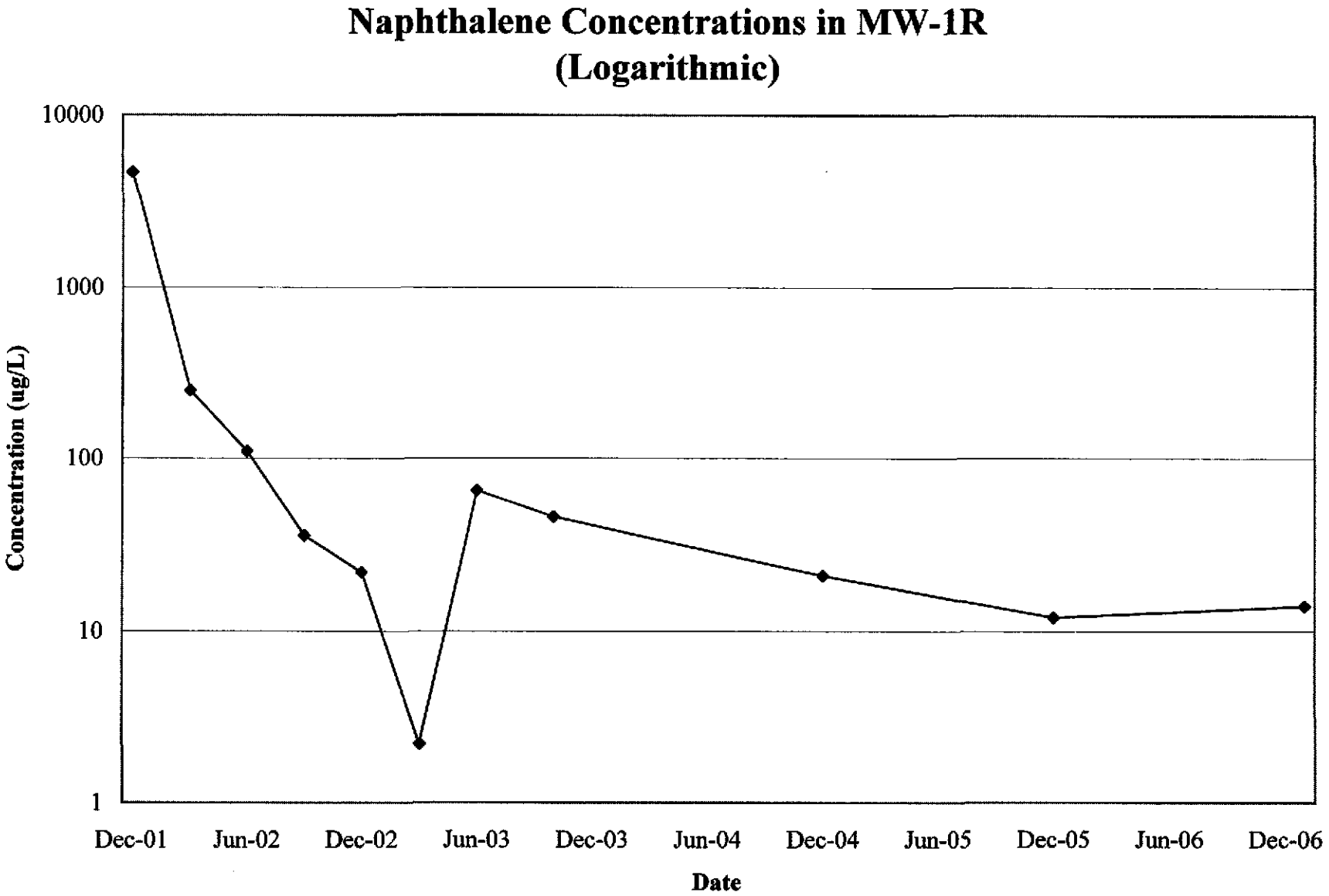
Appendix C

Charts Depicting Naphthalene Concentrations vs. Time

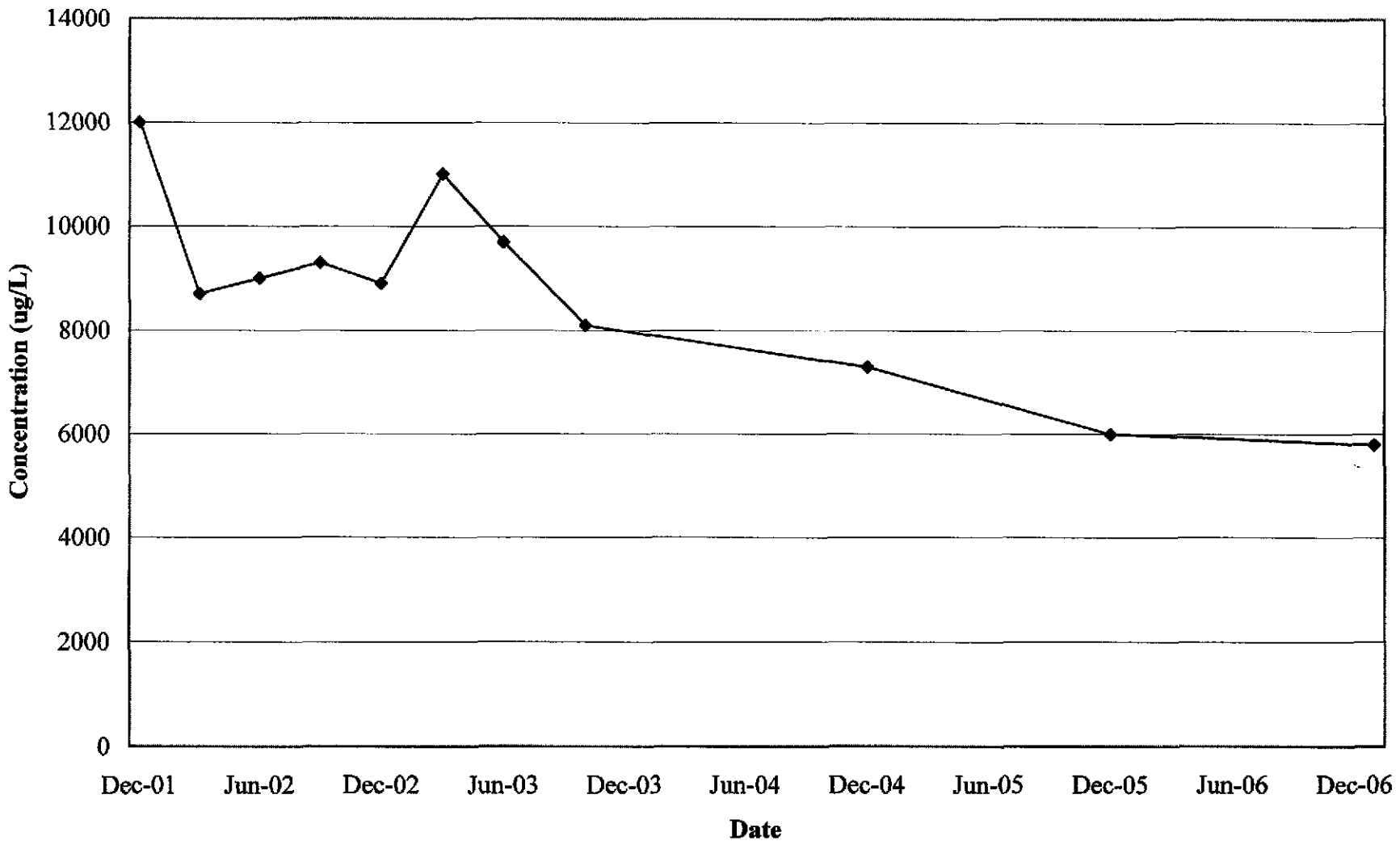
Former Gulf States Creosoting Site
Hattiesburg, Mississippi

Naphthalene Concentrations in MW-1R

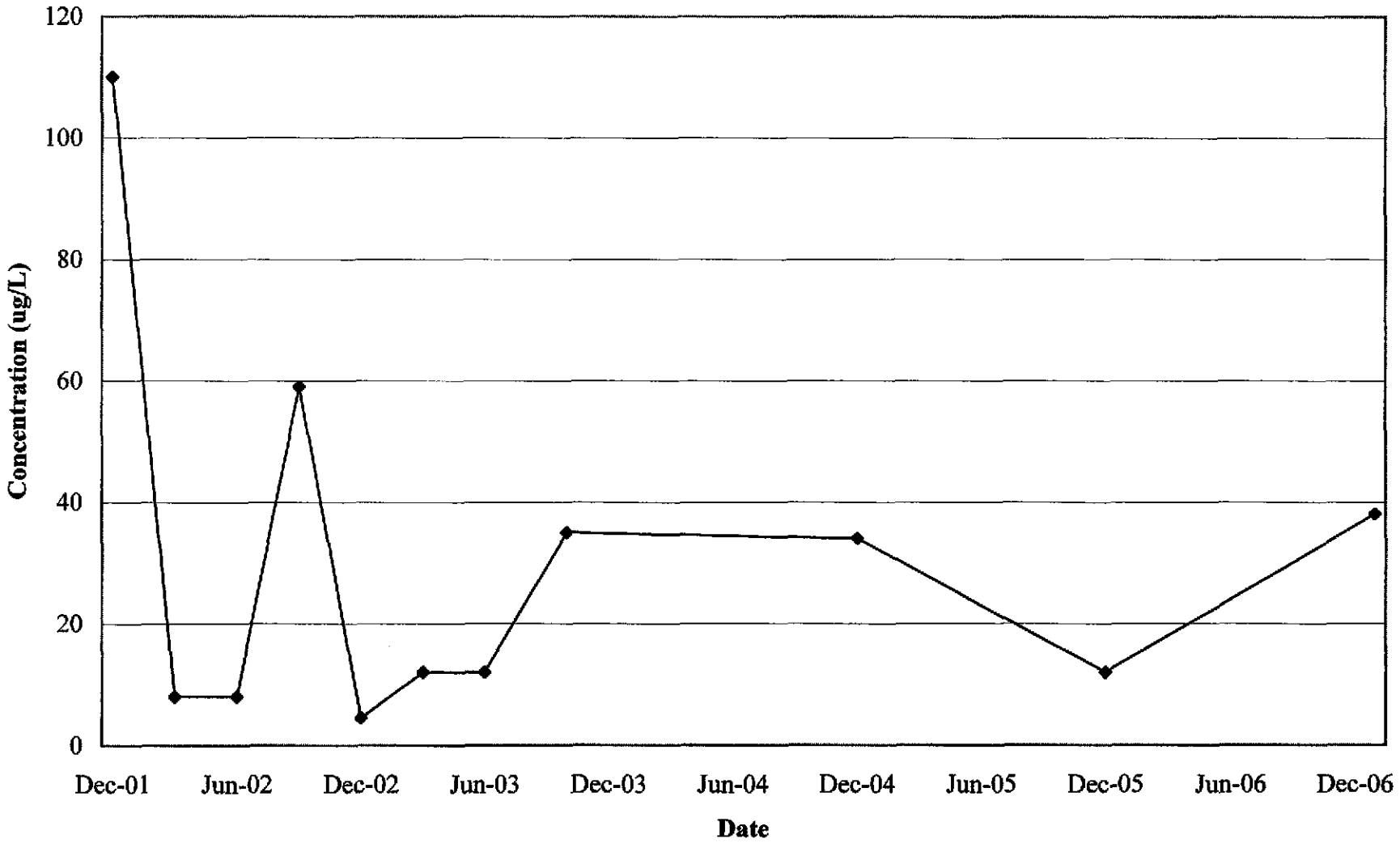



Naphthalene Concentrations in MW-1R
(Logarithmic)
10000
1000
100
10
1
Concentration (ug/L)
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05
Dec-05
Jun-06
Dec-06
Date

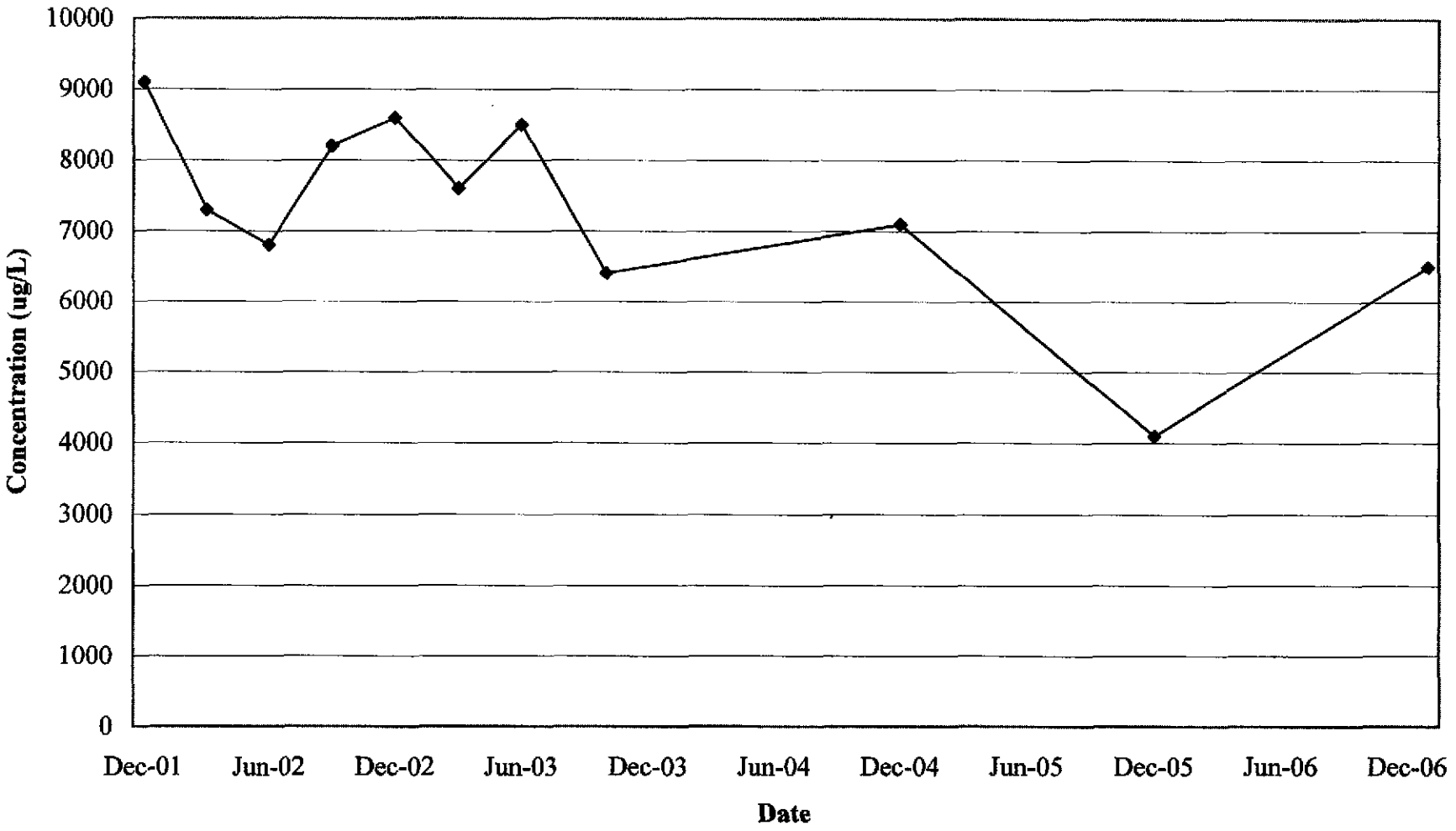
Naphthalene Concentrations in MW-2R



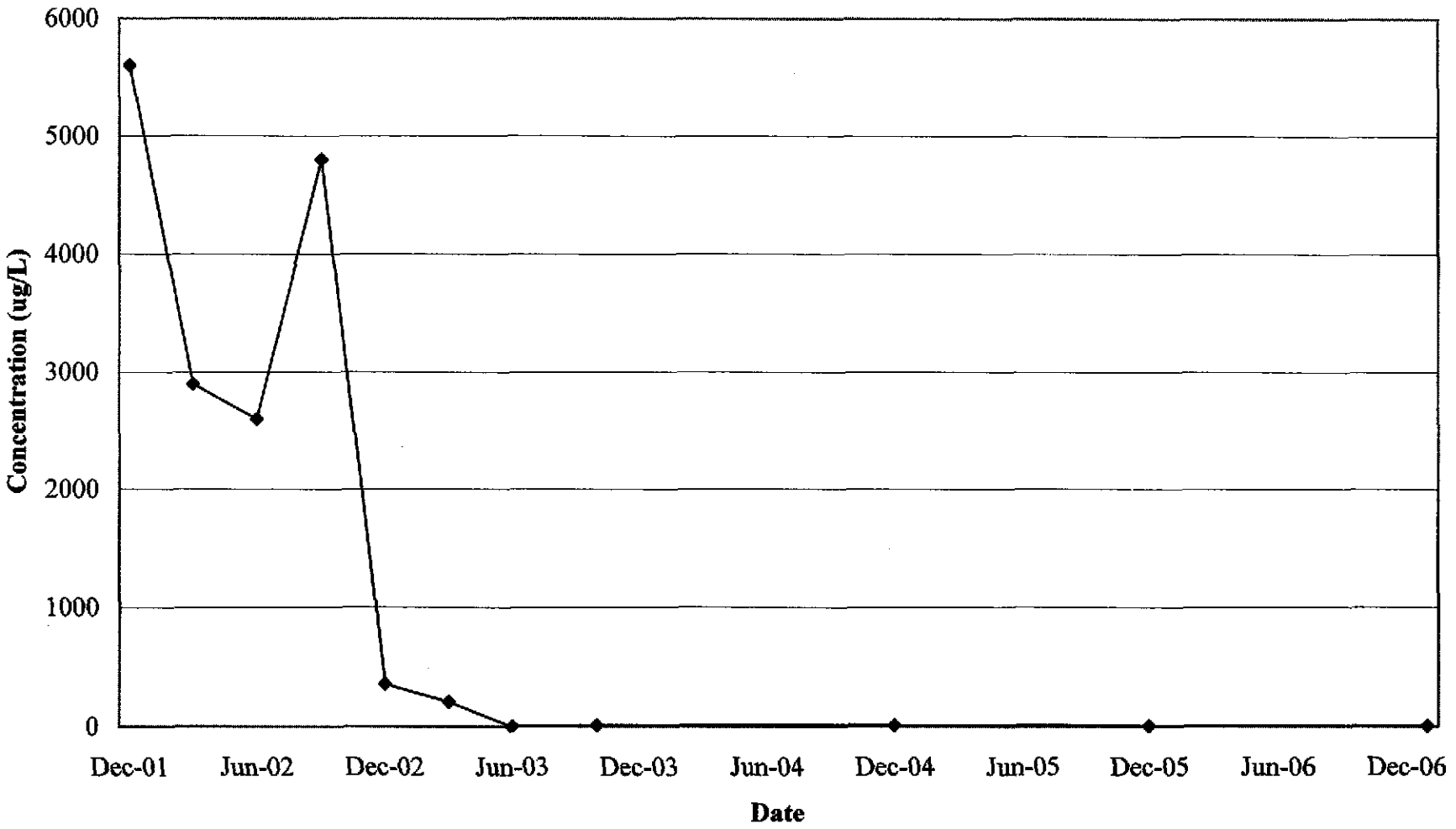
Naphthalene Concentrations in MW-4



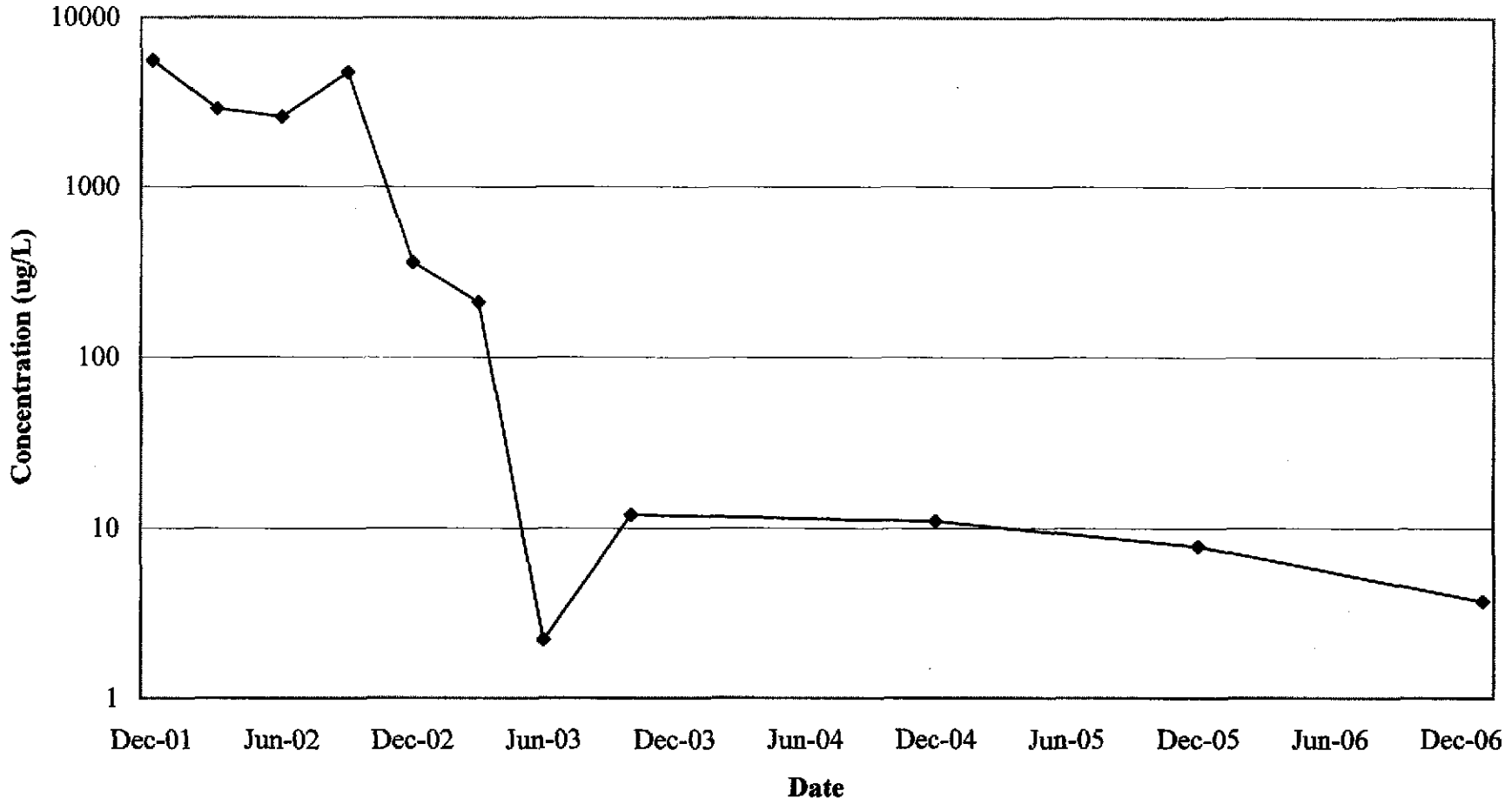
Naphthalene Concentrations in MW-06



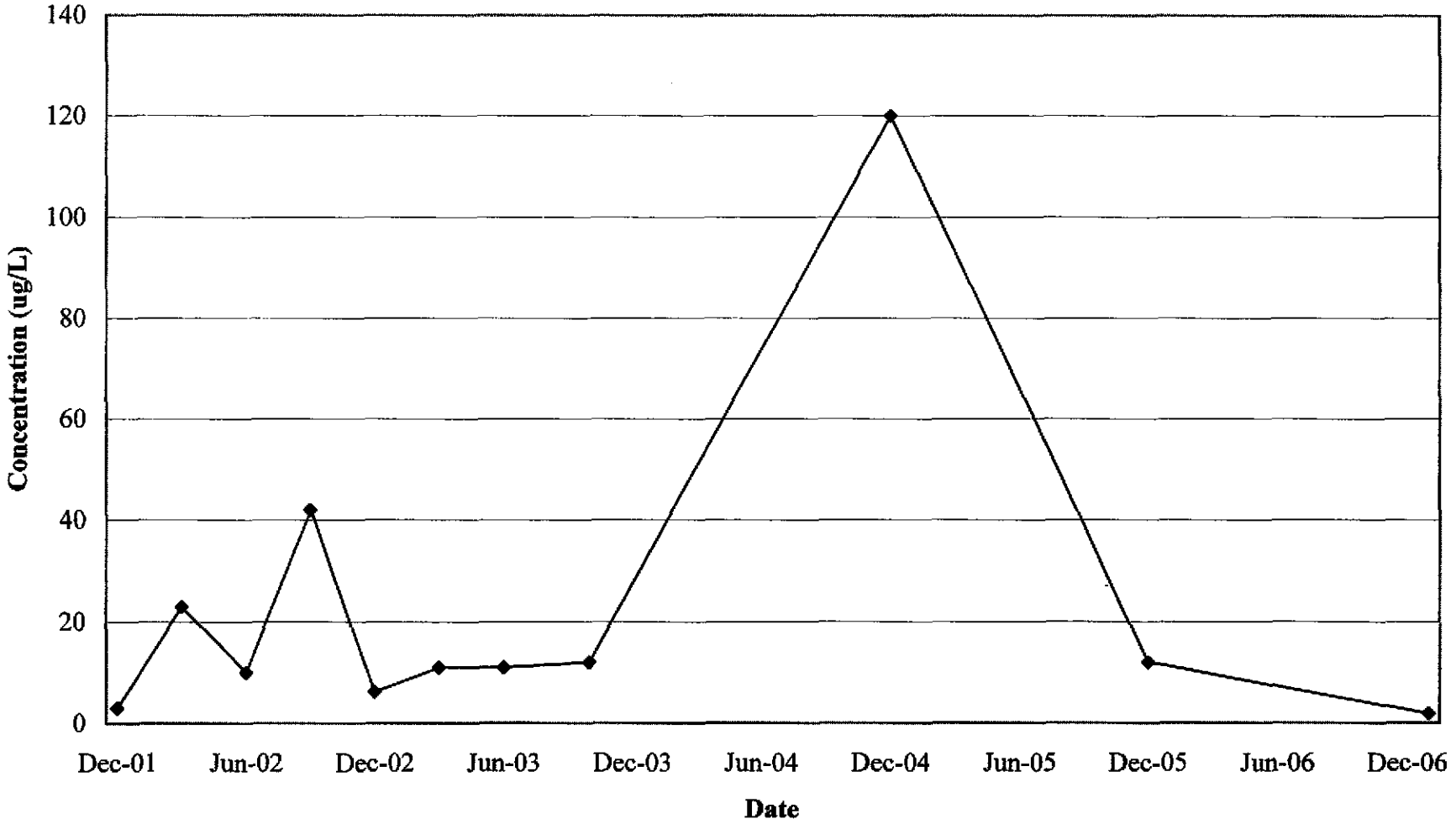
Naphthalene Concentrations in MW-12



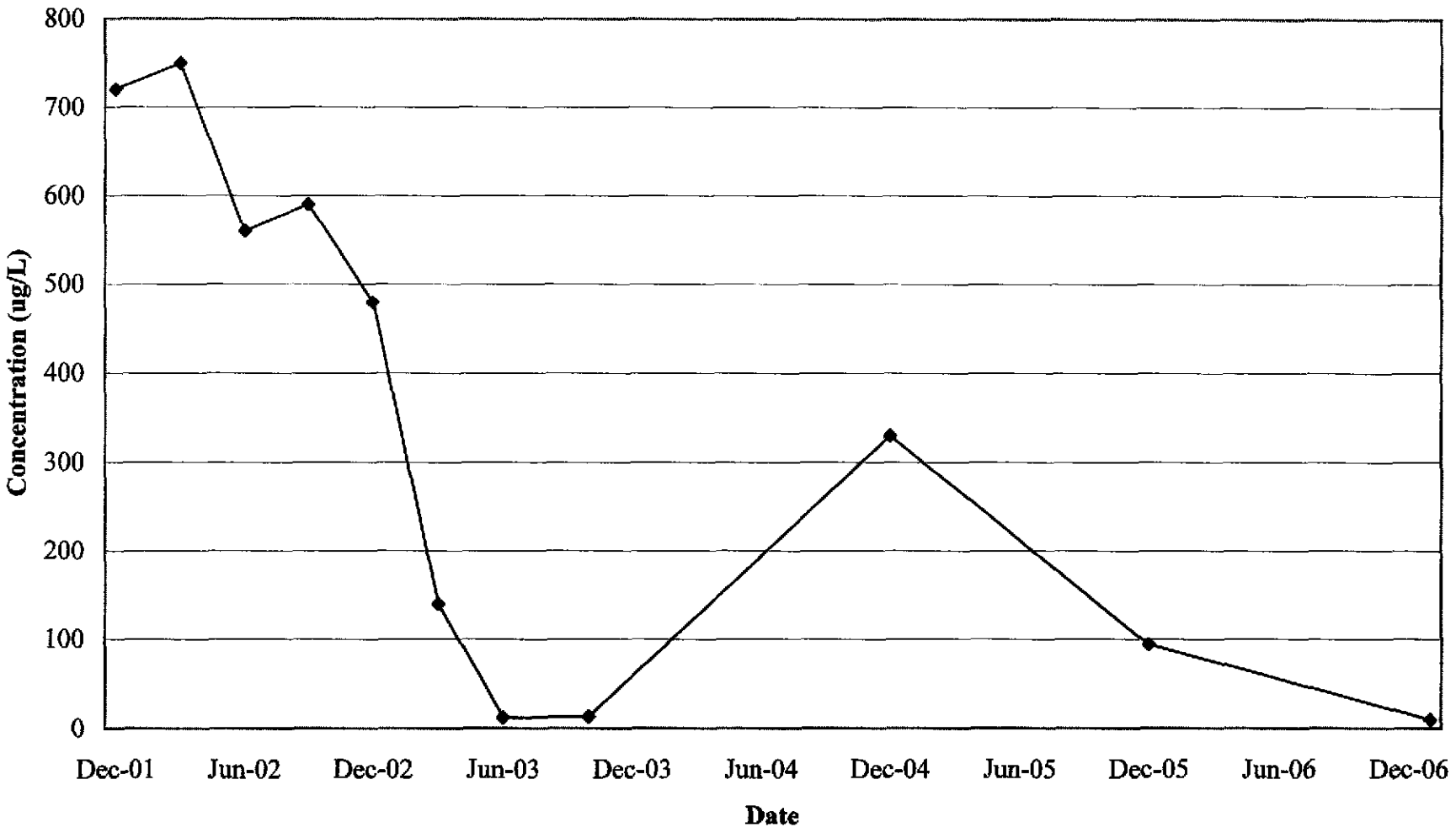
Naphthalene Concentrations in MW-12
(Logarithmic)



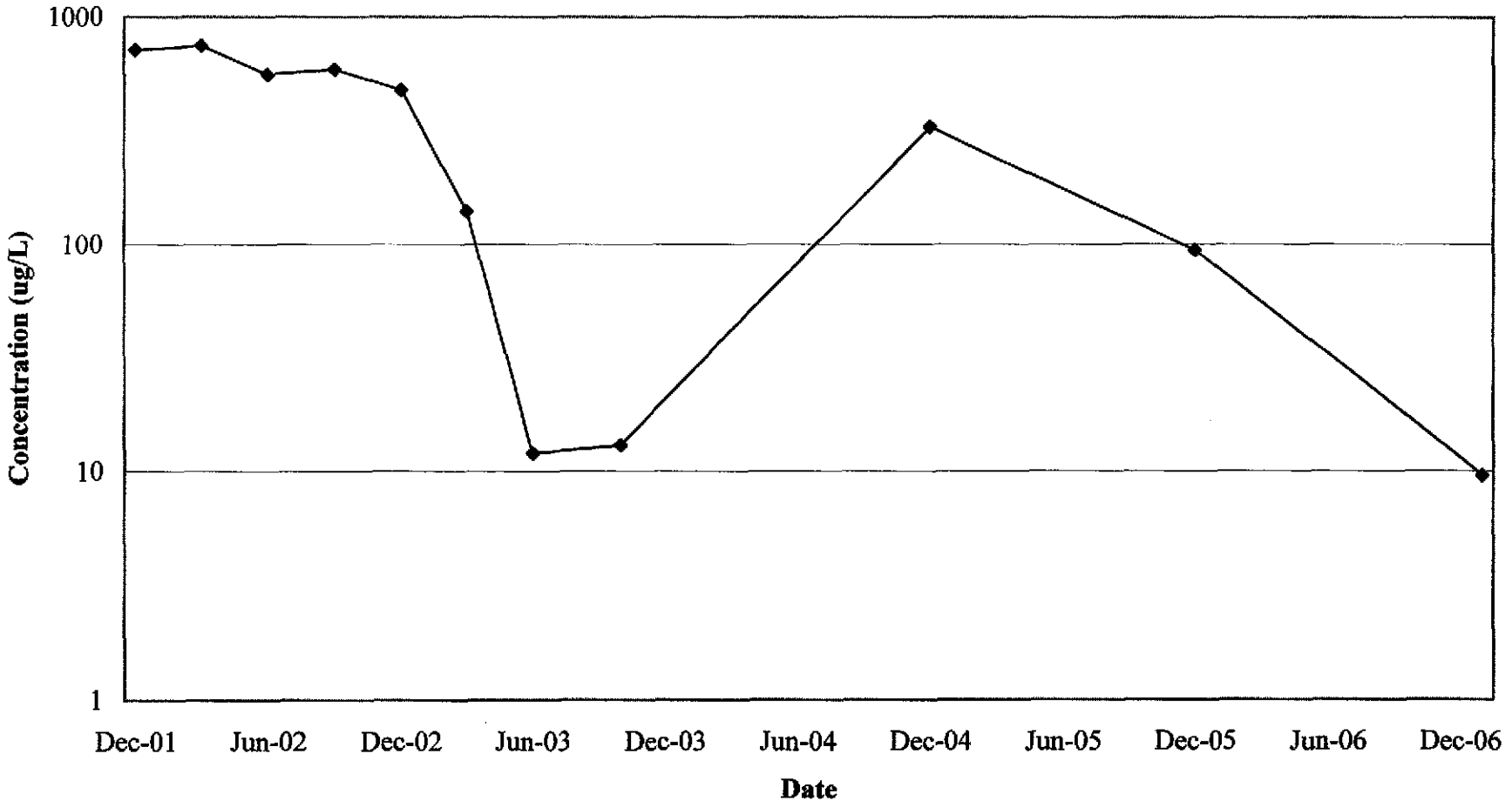
Naphthalene Concentrations in MW-14



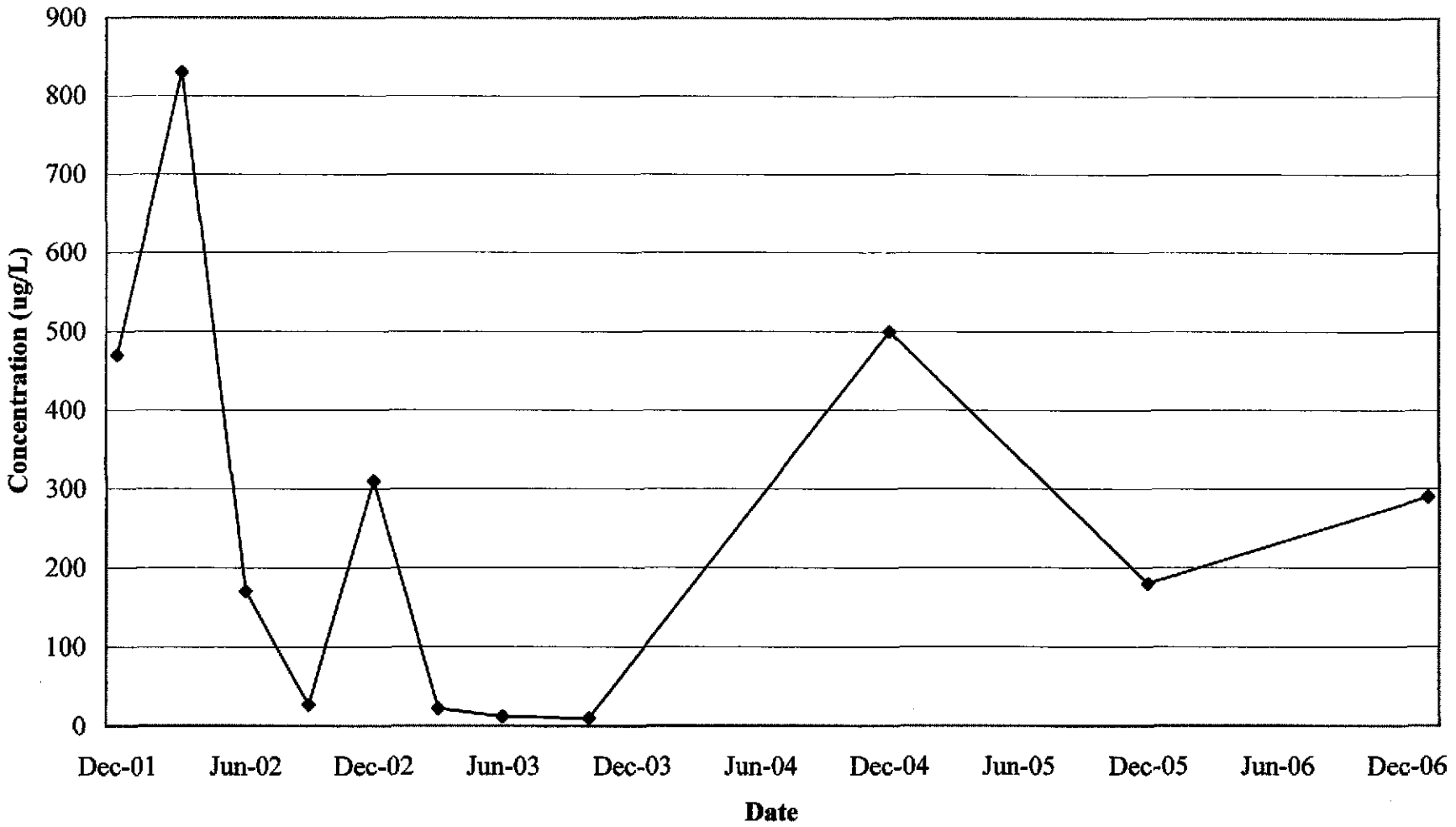
Naphthalene Concentrations in MW-17



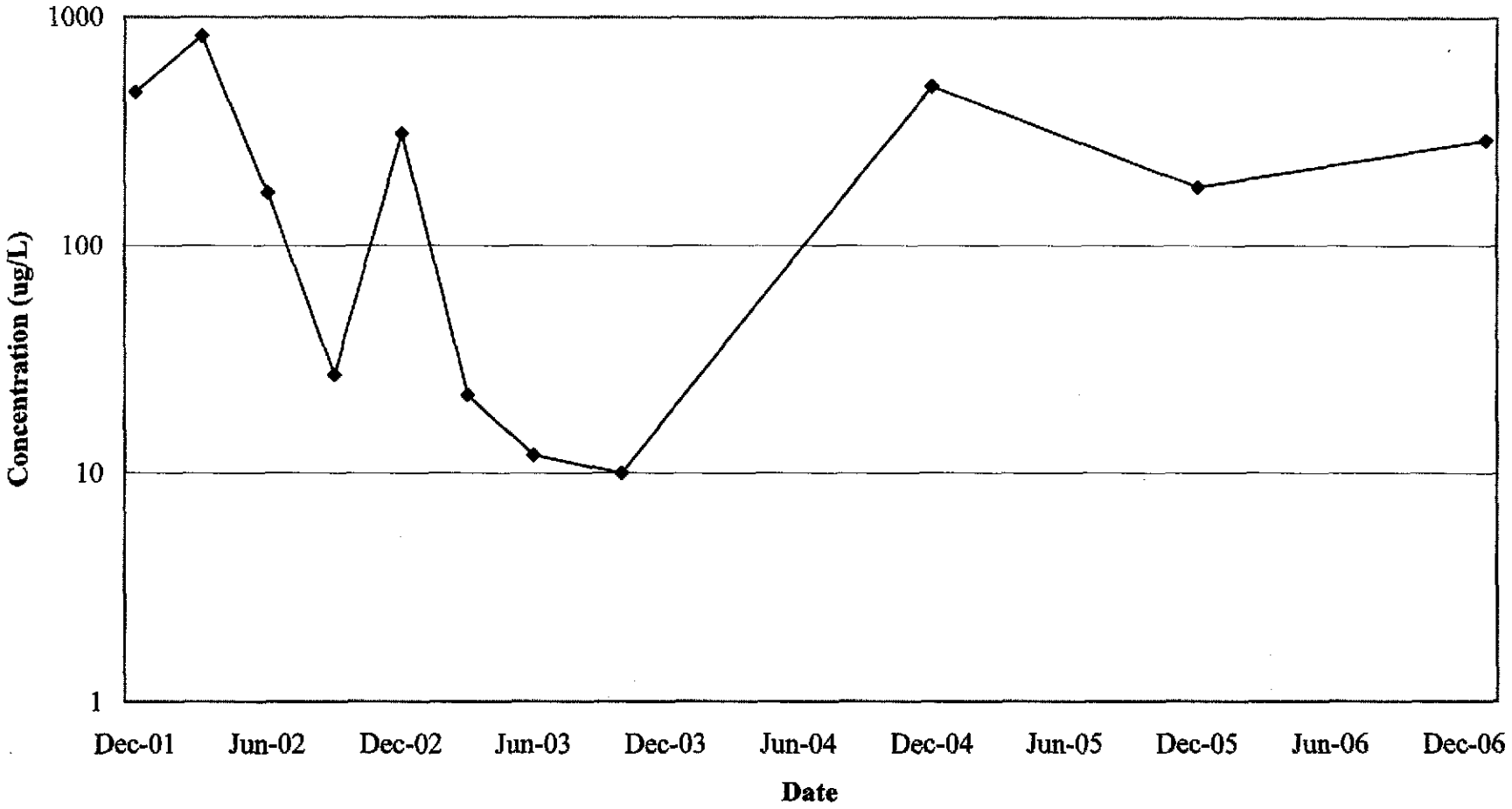
Naphthalene Concentrations in MW-17
(Logarithmic)



Naphthalene Concentrations in MW-18



Naphthalene Concentrations in MW-18 (Logarithmic)



Naphthalene Concentrations in MW-19