

Semi-Annual Monitoring Report

**Hercules Incorporated
Hattiesburg, Mississippi**

**Prepared for:
Hercules Incorporated**

May 2008

Eco-Systems, Inc.
Consultants, Engineers, and Scientists



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1.0 INTRODUCTION

Hercules Incorporated (Hercules) commissioned Eco-Systems, Inc. (Eco-Systems) to conduct groundwater and surface water monitoring at the Hattiesburg, Mississippi facility. The site location is shown in Figure 1. The work is being conducted in accordance with the Corrective Action Plan Revision 01 (CAP) prepared by Groundwater & Environmental Services, Inc. (GES) dated January 20, 2005, which was approved by the Mississippi Department of Environmental Quality (MDEQ) in a letter dated January 25, 2005 and modified in a letter from MDEQ to Hercules dated August 18, 2006. The eight quarterly monitoring events specified in the CAP were completed in May 2007 and discussed in the second Annual Monitoring Report (Eco-Systems, August 2007). In accordance with the recommendation of the 2007 Annual Monitoring report, surface water and groundwater monitoring is being continued on a semi-annual basis.

This report describes sampling activities and analytical results for the 2nd semi-annual monitoring event. During this event, water levels were measured at 18 wells and 15 piezometers, surface water samples were collected from six locations in Green's Creek, and groundwater samples were collected from 18 monitoring wells. As required by the CAP, as approved and modified, surface water and groundwater samples collected during monitoring events are being analyzed for Appendix IX volatile organic compounds (VOCs). During this event, samples from seven monitoring wells specified by the MDEQ were also analyzed for dioxathion and dioxenethion.

2.0 FIELD ACTIVITIES

Field activities conducted during this semi-annual sampling event include sample collection from 18 monitoring wells and 6 surface water monitoring locations. Groundwater samples collected from monitoring wells MW-04, MW-08, MW-13, MW-14, MW-15, MW-16 and MW-17 were analyzed for dioxathion constituents (cis-dioxathion, trans-dioxathion, and dioxenethion). Groundwater and surface water samples were analyzed for Appendix IX VOC's.

2.1 GROUNDWATER SAMPLE COLLECTION

On May 13, 2008 Eco-Systems personnel collected groundwater levels from the 18 monitoring wells to be sampled during the monitoring event and from the 15 piezometers at the site. A summary of the water level measurements obtained on May 13, 2008 is included as Table 1. A potentiometric surface map has been prepared from the May 13, 2008 groundwater elevations and is included as Figure 3.

Groundwater sample collection was conducted on May 14th, 15th, and 16th 2008. Prior to collecting groundwater samples, the monitoring wells were purged using traditional volume based methods. Purging was conducted until temperature, pH, specific conductance, and turbidity had stabilized. The water quality field parameters were measured with calibrated instruments and recorded in the field book along with the cumulative amount of water evacuated and time of batch parameter testing. Groundwater collection logs are attached as Appendix A.

Once field parameters stabilized, groundwater collected for analysis was sampled by collecting water directly into new sample containers supplied by the analytical laboratories. During the collection of field replicates that were collected for quality assurance and quality control (QA/QC), alternating aliquots were placed in each replicate bottle until each bottle was filled.

In general, the order of sampling was from least impacted to most impacted, based on historical data. Tubing used during purging and sampling was either dedicated to each well or disposed of after use. Subsequent to sampling, sample containers were labeled, placed and sealed on ice and shipped to the designated offsite laboratory for analysis. Chain-of-custody documentation accompanied the sample cooler. Personnel involved in sampling used clean, disposable gloves, which were changed between each sample collection. All non-disposable sampling equipment was decontaminated as outlined in Section 2.4

During this event, groundwater samples were collected from permanent monitoring wells MW-2 through MW-19. Groundwater samples were collected in new sample containers supplied by the analytical laboratories. Filled sample containers were placed on ice in

coolers. Groundwater samples for VOC analyses were shipped via overnight courier to Test America Laboratories in Savannah, Georgia for analysis.

2.2 SURFACE WATER SAMPLE COLLECTION

On May 13, 2008, six surface water samples were collected from the previously established sampling points along Green's Creek, CM-0 to CM-5. Samples were collected beginning with the most downstream location and proceeding upstream to each successive sampling location. Surface water samples were collected directly into new sample containers that were supplied by the analytical laboratories. The filled sample containers were labeled, packed and shipped/delivered in the same manner as groundwater samples discussed in Section 2.1.

2.3 QUALITY ASSURANCE/QUALITY CONTROL

For quality assurance/quality control (QA/QC) purposes, two duplicate groundwater samples, three rinsate samples, two trip blank samples, and three matrix spike and matrix spike duplicate (MS/MSD) were collected during field sampling activities. The duplicate groundwater samples were collected in alternating aliquots that were placed in each replicate bottle until each bottle was filled. The rinsate samples were prepared by pouring deionized water over groundwater sampling tubing and collecting the rinsate into new disposable sample containers supplied by the analytical laboratory. QA/QC samples were labeled, stored and shipped in the same manner as groundwater and surface water samples. QA/QC samples were analyzed for the same constituents as groundwater and surface water samples.

2.4 DECONTAMINATION

In general, groundwater sampling equipment that would contact the groundwater sample was single-use, disposable equipment. For any re-usable groundwater sampling equipment decontamination was accomplished by the following procedure:

- 1) Phosphate-free detergent wash.
- 2) Potable water rinse.
- 3) Deionized water rinse.
- 4) Isopropanol rinse.
- 5) Organic-free water rinse or air dry.

If it was necessary to store or transport decontaminated equipment, the decontaminated equipment was placed in either a new, disposable plastic bag or wrapped in aluminum foil.

2.5 OTHER PROCEDURES

Procedures for sample collection, sample containerization and packing, sample shipment, cross-contamination control, drummed material disposal, field documentation, chain-of-custody, data review, and other work items not specifically covered in this document were conducted in accordance with the Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EPA Region IV, May, 2001), (EISOPQAM)

3.0 RESULTS

Groundwater and surface water samples collected from the Hercules site were analyzed for Appendix IX VOC's according to U.S. EPA Method 8260B and for Dioxathion according to the Sampling and Analysis Protocol for the Determination of Dioxathion in Water (Hercules, 2002). Laboratory analytical reports for the samples collected during this monitoring event are included in Appendix B and summarized in Table 2, Table 3, Table 4 and Table 5.

3.1 GROUNDWATER ANALYTICAL RESULTS

Discussion presented in this section summarizes the analytical results for groundwater samples collected from monitoring wells MW-2 through MW-19 on May 14, 15, and 16 2008.

3.1.1 Volatile Organic Compounds

VOC's were not detected in groundwater samples collected from wells MW-02, MW-03, MW-04, MW-05, MW-06, MW-07, MW-10, MW-11, MW-12, MW-15, and MW-16.

Analysis of the groundwater sample collected from monitoring well MW-08 detected benzene, chlorobenzene, carbon tetrachloride, and toluene at concentrations above their TRG's.

Analysis of the groundwater sample collected from monitoring well MW-13 detected benzene, carbon tetrachloride, and chloroform at concentrations above their respective TRG's.

Analysis of the groundwater sample collected from monitoring well MW-17 detected benzene, chlorobenzene, carbon tetrachloride, chloroform, and toluene at concentrations above their respective TRG's.

Analysis of the groundwater sample collected from monitoring well MW-19 detected benzene and carbon tetrachloride at concentrations above their respective TRG's.

3.1.2 Dioxathion

Analysis for dioxathion includes analysis for both the cis- and trans- isomers and for dioxenethion. Dioxathion samples were collected from monitoring wells MW-4, MW-8, MW-13, MW-14, MW-15, MW-16, and MW-17.

Trans-dioxathion was detected the groundwater sample collected from MW-04 at a concentration of 18.20 µg/L.

Cis-dioxathion and trans-dioxathion were detected in the groundwater samples collected from MW-13 at concentrations of 1.2 µg/L and 2.3 µg/L, respectively.

Cis-dioxathion was detected in the groundwater sample collected from MW-15 at a concentration of 8.0 µg/L.

Dioxenethion was detected in the groundwater samples collected from monitoring wells, MW-4, MW-13, MW-14, MW-15, MW-16 and MW-17 at concentrations of 10.3 µg/L, 35.4 µg/L, 2.5 µg/L, 11.9 µg/L, 6.4 µg/L and 6,853 µg/L, respectively. A TRG has not been established for dioxenethion.

3.2 SURFACE WATER ANALYTICAL RESULTS

Discussion presented in this section summarizes the analytical results for surface water samples collected from sampling locations CM-0 through CM-5 on May 13, 2008.

3.2.1 Volatile Organic Compounds

Benzene was detected in the surface water sample collected from CM-03 at a concentration less than the TRG.

VOC's were not detected in surface water samples collected from locations CM-00, CM-01, CM-02, CM-04, and CM-05.

3.2.2 Dioxathion

Dioxenethion, cis-dioxathion and trans-dioxathion were not analyzed in the surface water samples collected during the May 2008 monitoring event.

3.3 QA/QC SAMPLE ANALYTICAL RESULTS

Analytical reports for the QA/QC samples are included in Appendix B and summarized in Table 3.

Duplicate groundwater samples were collected from MW-04, and MW-13. Analysis of the duplicate groundwater sample collected from MW-04 and the original MW-04 indicated all constituents were below MDL.

Analysis of the duplicate groundwater sample collected from monitoring well MW-13 detected the similar concentrations of benzene, chloroform, and carbon tetrachloride.

Dioxiathion analysis of the duplicate groundwater sample collected from monitoring MW-13 detected similar concentrations of cis-dioxiathion and trans-dioxiathion. Dioxenethion was detected in the sample collected from MW-13 at a concentration of 35.4 µg/L, but dioxenethion was not detected in the duplicate sample above the reporting limit of 0.400 µg/L.

Toluene was detected in similar concentrations in the three rinsate samples (RS-01, RS-02, RS-03) collected during the sampling event. However, the concentration of Toluene detected in the rinsates was both low and consistent (2.6µg/L to 4.9µg/L). Similar detections of toluene were not found in groundwater samples associated with the rinsates blanks and toluene was only detected in groundwater samples where historical data indicates that toluene is present. Therefore, the detection of toluene in the rinsate samples does not appear to have materially affected surface water and groundwater samples. The detection of toluene in the rinsate samples appears, instead to be an artifact related to either rinsate sample collection, rinse water supplied by the analytical laboratory, or laboratory procedure.

VOC's were not detected in either of the trip blanks.

Review of the analytical reports for VOC's that were submitted by Test America indicates that spike sample recoveries for the spiked volatile organic constituents in the MS and MSD samples were within the acceptable recovery ranges reported by the laboratory for each of the spiked constituents.

As reported by Test America, all method blanks were non-detect for VOC's. The laboratory QC spike sample recoveries for VOC's detected in site samples were within the limits reported by the laboratory. Analyses were conducted within the 14 day holding time. Based on the information received and reviewed, the VOC analyses were conducted under controlled conditions and the data package is acceptable for use as reported, without qualification.

4.0 FINDINGS AND CONCLUSIONS

The findings and conclusions in this section are based on data obtained during the November 2007 and May 2008 monitoring events.

4.1 SLUDGE PITS

Groundwater monitoring wells in the sludge pit area is conducted using five monitoring wells. Monitoring wells MW-2 and MW-3 are located north of the sludge pits in historically up gradient positions. Monitoring wells MW-4, MW-10, and MW-11 are located south of the sludge pits in historically down gradient positions.

VOCs have not been detected in samples collected from monitoring wells MW-2, MW-3, MW-4, MW-10, and MW-11 for the two semi-annual monitoring events.

Dioxenethion was detected in groundwater sample collected from monitoring well MW-4 during the May 2008 monitoring event. The concentration of dioxenethion detected in the May 2008 sample was less than concentrations detected in samples from this location in the two previous years. Trans-dioxathion was detected in the May 2008 sample collected from monitoring well MW-4 at a concentration less than the TRG. Trans-dioxathion has not been detected in previous samples collected from MW-4.

Dioxathion constituents were not analyzed for monitoring wells MW-2, MW-3, MW-10, and MW-11.

Based on the analytical results of the two semi-annual groundwater monitoring events, VOCs and dioxathion are not migrating from the sludge pits at concentrations above TRGs.

4.2 GREEN'S CREEK

VOCs were not detected in samples collected from surface water monitoring locations CM-00, CM-01, CM-02, CM-04, and CM-05 during either of the semi-annual monitoring events.

Benzene was detected in the surface water sample collected from CM-03 during the May 2008 sampling event at a concentration less than the TRG, but was not detected in the sample collected during the November 2007 sampling event.

Based on the analytical results of the semi-annual monitoring events, VOCs are not present in Green's Creek at concentrations above TRGs.

4.3 FORMER LANDFILL

Groundwater monitoring wells in the former landfill area is conducted using five monitoring wells. Monitoring wells MW-8 and MW-13 are located south and east of the former landfill in historically up gradient positions. Monitoring wells MW-5, MW-6, and MW-12 are located north of the former landfill in historically down gradient positions.

Benzene was detected in the sample collected from MW-5 during the November 2007 sampling event at a concentration less than the TRG, but benzene was not detected in the sample collected from MW-5 during the May 2008 sampling event.

VOCs were not detected in samples collected from monitoring wells MW-6 and MW-12.

In samples collected from the up gradient wells MW-8 and MW-13, concentrations of benzene, chlorobenzene (MW-8 only), carbon tetrachloride, and chloroform persist at concentrations above TRGs. Toluene was detected in the November 2007 sample collected from monitoring well MW-8 at concentrations above TRGs but was not detected in the May 2008 sample.

Cis-dioxathion and trans-dioxathion were detected in groundwater samples collected from monitoring well MW-13 during the May 2008 monitoring event at concentrations less than the TRG. Neither dioxathion isomer has been previously detected in samples collected from monitoring well MW-13. Dioxenethion was also detected in sample collected from monitoring wells MW-13 during the May 2008 monitoring event at concentrations consistent with past detections.

Neither cis-dioxathion nor trans-dioxathion were detected in the May 2008 sample collected from monitoring well MW-8. Dioxenethion has been detected in all samples collected from MW-8 previous to the May 2008 sampling event, but dioxenethion was not detected in the May 2008 sample collected from monitoring well MW-8.

Based on the analytical results of the two semi-annual groundwater monitoring events, VOCs are not migrating from the landfill at concentrations above TRGs.

4.4 GROUNDWATER

Concentrations of benzene, chlorobenzene, carbon tetrachloride, chloroform and toluene above the TRG persist in samples collected from monitoring well MW-17, which is located in the suspected source area. Concentrations of these constituents have fluctuated, but have not shown overall increase or decrease.

Discussion of monitoring wells MW-8 and MW-13, which are near the suspected source area, is included in Section 4.3.

Concentrations of benzene above the TRG have been detected in samples collected from monitoring well MW-9 for all sampling events prior to May 2008. Benzene was detected at a concentration less than the TRG in the sample collected from monitoring well MW-9 during the May 2008 sampling event.

VOCs have not occurred in samples collected from MW-16 during the two semi-annual monitoring events. Concentrations of acetone were detected in the groundwater samples collected from monitoring well MW-14 at concentrations above the TRG during the May 2008 monitoring event. Concentrations of acetone were also detected in the groundwater samples collected from monitoring well MW-14 and MW-15 at concentrations less than the TRG during the November 2007 event.

Trans-dioxathion has not been detected in groundwater samples collected from monitoring wells MW-14, MW-15, MW-16 and MW-17. Cis-dioxathion was detected in samples collected from MW-15 at concentrations less than the TRG during the May 2008 monitoring event. Dioxenethion has been detected in samples collected from MW-14, MW-15, MW-16, and MW-17.

Based on the analytical results of the two semi-annual groundwater monitoring events, VOCs are not migrating from the previously defined groundwater area at concentrations above TRGs. Dioxathion constituents have been detected in monitoring wells in this area during most recent monitoring event.

4.5 EASTERN PLANT AREA

Monitoring wells MW-18 and MW-19, which are located east of plant buildings, were installed as part of the CAP, but potentiometric information has not indicated that these wells are part of the previously defined area of groundwater containing volatile organic constituents. Therefore, monitoring wells MW-18 and MW-19 are discussed separately.

Concentrations of benzene above the TRG have been detected in the samples collected from monitoring well MW-19 during the two previous monitoring events. The concentrations of benzene detected in the samples collected from monitoring well MW-19 have shown an increase over the last two monitoring events. Carbon tetrachloride was detected at a concentration above the TRG in the sample collected from MW-19 during the May 2008 sampling event. Carbon tetrachloride has not been previously detected in samples collected from monitoring well MW-19. Chlorobenzene, 1,1-dichloroethene, ethylbenzene, and toluene were detected in samples collected from monitoring well MW-19 at concentrations below the TRG during the November 2007 and May 2008 monitoring events.

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Benzene, chlorobenzene, 1,2-dichloropropane, acetone, ethylbenzene, and 1,1-dichloroethene were detected at concentrations below the TRGs in samples collected from monitoring well MW-18 during one or both of the semi-annual monitoring events.

5.0 RECOMMENDATIONS

The following recommendations are based on information obtained and data collected during the November 2007 and May 2007 monitoring events.

Since VOCs at concentrations above TRGs persist in samples collected from wells installed to monitor the Former Landfill, the Groundwater area, and the Eastern Plant Area, semi-annual groundwater monitoring for VOCs should be continued. However, VOC concentrations in samples collected from well installed to monitor the Sludge Pits and from surface water sampling locations in Green's Creek have only been detected sporadically and have not been confirmed above TRGs in any of the sampling locations. It is, therefore, recommended that sampling frequency of five monitoring wells in the Sludge Pit area (MW-2, MW-3, MW-4, MW-10, and MW-11) and the six surface water sampling locations be reduced to annual monitoring. If annual monitoring indicates a sudden change in VOC concentrations, a return to a more frequent monitoring schedule for the affected Sludge Pit monitoring wells or Green's Creek sampling locations may be warranted.

TABLES

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA
May, 2008
Hercules, Incorporated
Hattiesburg, Mississippi

WELL NO.	TOC ELEVATION (ft.) ¹	WATER DEPTH (ft) ²	GROUNDWATER ELEVATION (ft.)
PERMANENT MONITOR WELLS			
MW-1	174.12	NA ³	NA
MW-2	160.07	6.88	153.19
MW-3	160.03	7.00	153.03
MW-4	159.75	10.75	149.00
MW-5	160.99	8.80	152.19
MW-6	174.05	8.83	165.22
MW-7	183.96	14.82	169.14
MW-8	179.99	15.00	164.99
MW-9	181.97	12.79	169.18
MW-10	159.88	10.65	149.23
MW-11	157.18	7.98	149.20
MW-12	162.17	8.13	154.04
MW-13	175.23	8.76	166.47
MW-14	169.23	14.25	154.98
MW-15	172.21	18.59	153.62
MW-16	175.62	17.10	158.52
MW-17	186.13	18.41	167.72
MW-18	165.31	5.87	159.44
MW-19	172.25	11.19	161.06
STAFF GAUGES			
SG-1	NA	NA	NA
SG-2	NA	NA	NA
SG-3	NA	NA	NA
SG-4	NA	NA	NA
PIEZOMETERS			
TP-1	172.18	NA	NA
TP-2	171.72	11.36	160.36
TP-3	169.74	9.20	160.54
TP-4	163.64	7.08	156.56
TP-5	160.54	8.73	151.81
TP-6	158.63	8.15	150.48
TP-7	167.17	9.12	158.05
TP-8	183.79	14.95	168.84
TP-9	163.44	5.99	157.45
TP-10	179.69	14.84	164.85
TP-11	162.26	8.81	153.45
TP-12	159.95	10.59	149.36
TP-13	156.99	7.75	149.24
TP-14	162.59	5.40	157.19
TP-16	179.72	13.47	166.25
TP-17	182.71	17.18	165.53

NOTES:

- 1- Elevations are in feet relative to mean sea level.
- 2 - Depth to water is in feet below top of casing. Staff gauge readings are in feet above the base of the staff.
- 3 - Data not available.

TABLE 2
SUMMARY OF VOC ANALYTICAL RESULTS
May 2008
Hercules Incorporated, Hattiesburg, Mississippi

Function	Date	Concentrations in µg/L															
		Acetone	Benzene	Chlorobenzene	Carbon Tetrachloride	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	1,1,2-Dichloroethane	1,1,2,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	1,1,1,2,2-Pentachloroethane	1,1,1,2,2,2-Hexachloroethane	1,1,1,2,2,2-Hexachloroethane	1,1,1,2,2,2-Hexachloroethane	1,1,1,2,2,2-Hexachloroethane
MVA-03	Jan-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Feb-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Mar-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Apr-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	May-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Jun-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Jul-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Aug-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Sep-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Oct-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Nov-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Dec-05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MVA-04	Jan-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Feb-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Mar-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Apr-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	May-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Jun-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Jul-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Aug-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Sep-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Oct-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Nov-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Dec-06	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MVA-05	Jan-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Feb-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Mar-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Apr-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	May-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Jun-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Jul-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Aug-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Sep-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Oct-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Nov-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Dec-07	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

TABLE 3
SUMMARY OF DIOXATHION ANALYTICAL RESULTS

Hercules Incorporated

Hattiesburg, MS

May 2008

Location	Date	Concentrations in µg/L			
		Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Total Dioxathion ¹
CM-00	Sep-03	< 0.400	< 0.400	< 0.400	< 0.800
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
CM-01	Feb-03	< 2.19	< 4.75	< 3.04	< 7.79
	Sep-03	< 0.400	< 0.400	< 0.400	< 0.800
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
May-08	NA	NA	NA	NA	
CM-02	Feb-03	< 2.19	8.72	< 3.04	8.72
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
CM-03	Feb-03	3.16	< 4.75	< 3.04	< 7.79
	Aug-05	1.05	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	21.6	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
CM-04	Feb-03	< 2.19	< 4.75	< 3.04	< 7.79
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	22.7	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
CM-05	Feb-03	3.07	< 4.75	< 3.04	< 7.79
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	11.3	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-02	Dec-02	< 0.220	< 0.480	< 0.300	< 0.780
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-03	Dec-02	< 0.220	< 0.480	< 0.300	< 0.780
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA

TABLE 3
SUMMARY OF DIOXATHION ANALYTICAL RESULTS

Hercules Incorporated

Hattiesburg, MS

May 2008

Location	Date	Concentrations in µg/L			
		Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Total Dioxathion ¹
MW-04	Dec-02	12.9	3.34	< 0.300	3.34
	Aug-03	6.34	1.82	< 0.400	1.82
	Aug-05	5.57	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	19.7	< 0.400	< 0.400	< 0.800
	May-06	28.8	< 0.400	< 0.400	< 0.800
	May-07	47.43	< 0.400	< 0.400	< 0.800
	May-08	10.3	< 0.400	3.5	3.500
MW-05	Dec-02	< 0.220	< 0.480	< 0.300	< 0.780
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-06	Dec-02	1.12	< 0.480	< 0.300	< 0.780
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	2.48	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-07	Dec-02	9.57	< 0.480	< 0.300	< 0.780
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-08	Dec-02	94.3	< 0.480	53.9	53.9
	Aug-05	539	< 0.400	< 0.400	< 0.800
	Nov-05	2,492	< 0.400	< 0.400	< 0.800
	Feb-06	1,669	< 0.400	< 0.400	< 0.800
	May-06	1,720	< 0.400	< 0.400	< 0.800
	May-07	560.81	18.20	8.83	27.03
	May-08	< 0.400	< 0.400	< 0.400	< 0.400
MW-09	Dec-02	5.9	12.8	< 0.300	12.8
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-10	Dec-02	< 0.220	< 0.480	< 0.300	< 0.780
	Aug-03	< 0.400	< 0.400	< 0.400	< 0.800
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-11	Dec-02	50.3	5	< 0.300	5
	Aug-03	6.24	< 0.400	< 0.400	< 0.800
	Aug-05	1.26	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA

TABLE 3
SUMMARY OF DIOXATHION ANALYTICAL RESULTS

Hercules Incorporated
Hattiesburg, MS
May 2008

Location	Date	Concentrations in µg/L			
		Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Total Dioxathion ¹
MW-12	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-13	Aug-05	8.11	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	60.5	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	29.73	< 0.400	< 0.400	< 0.800
	May-08	35.4	1.2	2.3	3.50
MW-14	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	32.05	< 0.400	< 0.400	< 0.800
	May-08	2.5	< 0.400	< 0.400	< 0.800
MW-15	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	< 0.400	< 0.400	< 0.400	< 0.800
	May-08	11.9	8.0	< 0.400	8.00
MW-16	Aug-05	1.01	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	22.16	< 0.400	< 0.400	< 0.800
	May-08	6.4	< 0.400	< 0.400	< 0.800
MW-17	Aug-05	2,210	< 0.400	< 0.400	< 0.800
	Nov-05	2,802	< 0.400	< 0.400	< 0.800
	Feb-06	1,436	< 0.400	< 0.400	< 0.800
	May-06	3,580	< 0.400	< 0.400	< 0.800
	May-07	4,873.32	62.71	< 0.400	62.710
	May-08	6,853	< 0.400	< 0.400	< 0.800
MW-18	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	7.25	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
MW-19	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Feb-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-06	< 0.400	< 0.400	< 0.400	< 0.800
	May-07	NA	NA	NA	NA
	May-08	NA	NA	NA	NA
TRG ³		N/E ⁴			54.8

1 - Total Dioxathion is the sum of the cis- and trans- isomers.

2 - "<" indicates that the concentration of the analyte is less than the concentrations shown.

3 - Target Remediation Goals are taken from the Tier 1 Target Remedial Goal Table of the Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi, MDEQ, March 2002.

Concentrations shown in bold are above TRGs

4 - No established Target Remediation Goal.

TABLE 4
SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS

Hercules Incorporated
Hattiesburg, Mississippi
May 2008

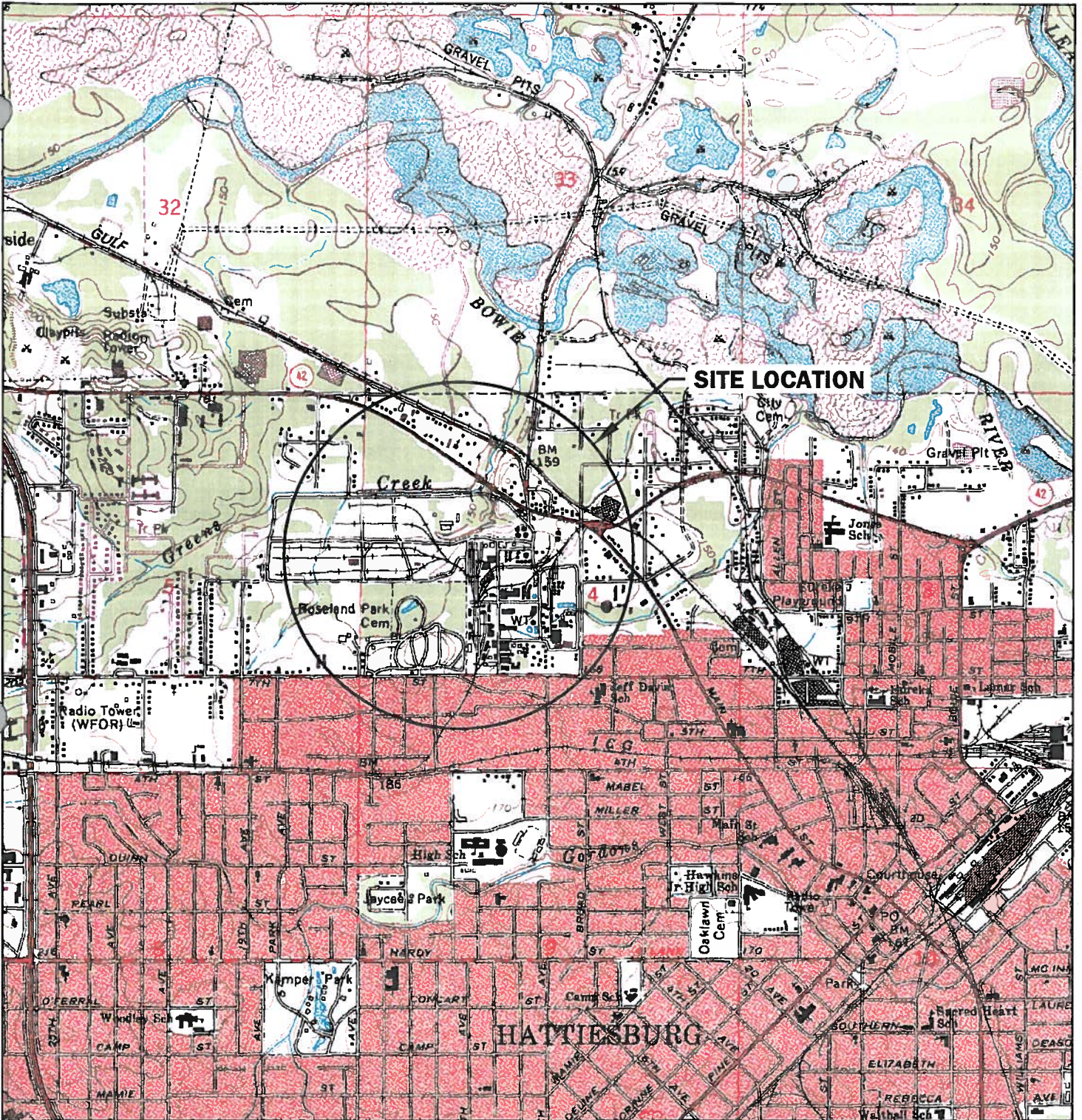
Location	Concentrations in µg/L															
	Acetone	Benzene	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroform	1,1-Dichloroethene	Ethylbenzene	Methylene Chloride	Toluene	Tetrachloroethene	Chloromethane	cis-1,2-Dichloroethene	Dioxenehion	Dioxathion (cis)	Dioxathion (trans)
MW-04	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	10.3	< 0.400	3.5
MW-04 DUP	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	N/A	N/A	N/A
% variation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A	N/A	N/A
MW-13	< 250	760	< 10	3,200	22	250	< 10	< 10	< 50	< 10	< 10	< 10	< 10	35.4	1.2	2.3
MW-13 DUP	< 250	750	< 10	2,800	23	350	1.7	1.1	< 50	1.1	< 10	< 10	2.1	ND	0.59	5.3
% variation	0%	1%	0%	14%	5%	40%	170%	110%	0%	110%	0%	0%	210%	NA	103%	130%
RS-01	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	4.9	< 1.0	< 1.0	< 1.0	N/A	N/A	N/A
RS-02	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	4.6	< 1.0	< 1.0	< 1.0	N/A	N/A	N/A
RS-03	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	2.6	< 1.0	< 1.0	< 1.0	N/A	N/A	N/A
TB-01	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	N/A	N/A	N/A
TB-02	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	N/A	N/A	N/A

1 - "<" indicates that the concentration of the analyte is less than the concentrations shown.

2 - Trip blanks were not analyzed for dioxathion constituents.

3 - ND indicates that the data was not detected.

FIGURES



QUADRANGLE LOCATION



**HERCULES INCORPORATED
HATTIESBURG, MISSISSIPPI**

Eco-Systems, Inc.

Consultants, Engineers and Scientists



SCALE: 1"=2000'	DRAWN BY: MTW	DATE: 11/26/07
	CHKD. BY:	DATE:

PROJECT NO. HER25080	CAD FILE HER25080-TOPO.dwg
-------------------------	-------------------------------

SITE LOCATION MAP

**FIGURE
1**

SOURCE: DeLORME 3D TopoQuads - HATTIESBURG, MISSISSIPPI

Groundwater Sample Collection Log

Project Name: _____
Project Number: Hercules 25080-CC-MS

Boring ID: MW-3
Site Location: _____

Start Date: 5/14/08 Finish Date: _____
Sample Technician: _____
Purge/Sample Method: low flow / low stress
Well Diameter (d): _____
Total Depth (TD): _____
Approximate Depth of Water Column (h)
(h = TD - DTW [ft-btoc]): _____
Calculated Well Volume (V = 6hd²)
(V = vol in gal; d = well diam. in ft): _____

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
5/13/08	10:10	7.00
5/14/08	8:30	7.26

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
5/14/08 8:29	0.0	5.17	127.5	22.3	2.1			
8:35	0.5	5.13	122	22.0	0.75			
8:40	1.0	5.15	131.9	21.9	1.4			
8:50	1.5	4.96	126.2	21.6	3.2			
9:00	2.0	4.99	127.1	22	1.9			
9:05	sample MW-3							

Sample Identification: HER-MW3-051408
HER-MW3-051408 (MS) HER-MW3-051408 (MSB)
Weather Conditions During Sampling: Sunny; 90°C 80°C
Comments: over cast

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
5/14/08	9:05	3-40mL VOA	HCl
	9:05	11	
	9:05	11	

Sample Technician: JB CT Date: 5/14/08

- Notes:
- ft-btoc = feet below top of casing.
 - gal = gallons.
 - µs = microSiemens.
 - °C = degrees Celsius.
 - NTU = Nephelometric Turbidity Units.
 - mg/L = milligrams per liter.
 - mV = millivolts.

Project Name: _____
Project Number: Herndon 25080 CC-MS

Boring ID: _____
Site Location: MW-4

Start Date: 5/14/08 Finish Date: _____
Sample Technician: _____
Purge/Sample Method: low flow / low stress
Well Diameter (d): _____
Total Depth (TD): 18.5
Approximate Depth of Water Column (h)
(h = TD - DTW [ft-btoc]): _____
Calculated Well Volume (V = 6hd²)
(V = vol in gal; d = well diam. in ft): 163

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
<u>5/13/08</u>	<u>10:35</u>	<u>10:75</u>
<u>5/14/08</u>	<u>10:45</u>	<u>10:25</u>

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
<u>5/14/08 10:43</u>	<u>0.0</u>	<u>6.5</u>	<u>336</u>	<u>25.4</u>	<u>2.7</u>			
<u>10:49</u>	<u>0.5</u>	<u>6.13</u>	<u>329</u>	<u>25.5</u>	<u>0.65</u>			
<u>10:55</u>	<u>1.0</u>	<u>6.13</u>	<u>331</u>	<u>25.3</u>	<u>0.00</u>			
<u>11:00</u>	<u>4.5</u>	<u>sample</u>		<u>MW-4</u>				

Sample Identification: HER-MW4-651408
HER-FDI-051408
Weather Conditions During Sampling: Sunny; 90°/C 85°
Comments: strong odor

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
<u>5/14/08</u>	<u>11:00</u>	<u>3-40mL VOA</u>	<u>HCl</u>
	<u>"</u>	<u>"</u>	<u>"</u>
<u>5/14/08</u>	<u>"</u>	<u>2-1L amber</u>	

(FD)

Sample Technician: XG CT Date: 5/14/08

- Notes:
- ft-btoc = feet below top of casing.
 - gal = gallons.
 - µS = microSiemens.
 - °C = degrees Celsius.
 - NTU = Nephelometric Turbidity Units.
 - mg/L = milligrams per liter.
 - mV = millivolts.



Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER25080

Boring ID: MW-08
Site Location: Hattiesburg, MS

Start Date: 05-16-2008 Finish Date: 05-16-2008
Sample Technician: CT/JB
Purge/Sample Method: Peristaltic Pump / Low Flow
Well Diameter (d): 2"
Total Depth (TD): _____
Approximate Depth of Water Column (h)
(h = TD - DTW [ft-btoc]): _____
Calculated Well Volume (V = 6hd²)
(V = vol in gal; d = well diam. in ft): _____

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
05-13-2008	1425	15.00
05-16-2008	0942	15.42

WELL DEVELOPMENT/PURGING DATA								
Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
05-16-2008 / 0935	0.0	6.26	740.0	24.5	12.1			chemical odor
↓ / 0943	0.5	6.19	694.0	24.6	11.3			
↓ / 0950	1.0	6.16	689.0	24.5	8.86			
↓ / 0958	1.5	6.12	680.0	24.6	6.14			
↓ / 1006	2.0	6.10	678.0	24.5	5.12			

Sample Identification: HER-MW08-051608
Weather Conditions During Sampling: Overcast; scattered showers
Comments: _____
Sample Technician: CT Date: 05-16-2008

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
05-16-2008	1015	3-40ml VOA	HCl
	1015	2-1L amber	

- Notes:
- ft-btoc = feet below top of casing.
 - gal = gallons.
 - mS/cm = milliSiemens per centimeter.
 - °C = degrees Celsius.
 - NTU = Nephelometric Turbidity Units.
 - mg/L = milligrams per liter.
 - mV = millivolts.



Collection Log

Project Name: _____
 Project Number: Hercules 75080-CC-MS

Boring ID: MW-10
 Site Location: _____

Start Date: 5/14/08 Finish Date: _____
 Sample Technician: _____
 Purge/Sample Method: low flow / low stress
 Well Diameter (d): _____
 Total Depth (TD): _____
 Approximate Depth of Water Column (h)
 (h= TD - DTW [ft-btoc]): _____
 Calculated Well Volume (V=6hd²)
 (V = vol in gal; d = well diam. in ft): _____

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
5/13/08	10:25	10.65
5/14/08	10:07	10.95

WELL DEVELOPMENT/PURGING DATA								
Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
5/14/08 9:52	0.0	5.84	46.2	22.6	28			
9:57	0.5	5.57	38.2	22.1	16			
10:10	1.0	5.65	36.7	22.1	14			
10:16	1.5	5.60	36.9	22.2	12			
10:22	2.0	5.62	36.5	22.1	10			
10:22								
10:30	sampled		MW-10					

Sample Identification: HER-MW10-051408
 Weather Conditions During Sampling: Sunny, 90°C 85°
 Comments: _____

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
5/14/08	10:30	3-40mL VOA	HCl

Sample Technician: JB CT Date: 5/14/08

- Notes:
- ft-btoc = feet below top of casing.
 - gal = gallons.
 - µs = microSiemens.
 - °C = degrees Celsius.
 - NTU = Nephelometric Turbidity Units.
 - mg/L = milligrams per liter.
 - mV = millivolts.



Groundwater Sample Collection Log

Project Name: _____
Project Number: Heracles 25000 CC MS

Boring ID: MW-18
Site Location: _____

Start Date: 5/14/08 Finish Date: _____
Sample Technician: _____
Purge/Sample Method: lowflow / lowstress
Well Diameter (d): _____
Total Depth (TD): _____
Approximate Depth of Water Column (h)
(h = TD - DTW [ft-btoc]): _____
Calculated Well Volume (V = 6hd²)
(V = vol in gal; d = well diam. in ft): _____

Date	Time	DTW (ft-btoc)
5/13/08	12:00	5.87
5/14/08	14:20	5.98

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
5/14/08 1410	0.0	6.27	839	27.9	6.8			
1415	0.5	6.24	876	25.8	0.0			
1420	1.0	6.25	870	26.0	0.0			
1425	1.5	6.25	867	26.1	0.0			
1430	sampled							MW-18

Sample Identification: HER-MW18-051408 *DEQ
Weather Conditions During Sampling: Sunny; 90°C 85°
Comments: odor

Date	Time	Sample Container	Preservative
5/14/08	1430	3-40mL VOA	HCl

Sample Technician: Jb CT Date: 5/14/08

- Notes:
- ft-btoc = feet below top of casing.
 - gal = gallons.
 - µs = microSiemens.
 - °C = degrees Celsius.
 - NTU = Nephelometric Turbidity Units.
 - mg/L = milligrams per liter.
 - mV = millivolts.

