



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

February 2007

Hercules Incorporated

Prepared for:

**Hercules Incorporated
Hattiesburg, Mississippi**

**Quarterly
Monitoring Report**

FILE COPY



TABLE OF CONTENTS

1.0 INTRODUCTION.....1

2.0 FIELD ACTIVITIES.....2

 2.1 GROUNDWATER SAMPLE COLLECTION.....2

 2.2 SURFACE WATER SAMPLE COLLECTION.....3

 2.3 QUALITY ASSURANCE/QUALITY CONTROL.....3

 2.4 DECONTAMINATION.....3

 2.5 OTHER PROCEDURES.....4

3.0 LABORATORY ANALYTICAL RESULTS.....5

 3.1 GROUNDWATER.....5

 3.2 SURFACE WATER.....5

 3.3 QA/QC.....6

TABLES

TABLE 1 SUMMARY OF GROUNDWATER ELEVATION DATA

TABLE 2 SUMMARY OF VOC ANALYTICAL RESULTS

TABLE 3 SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS

FIGURES

FIGURE 1 SITE LOCATION MAP

FIGURE 2 POTENTIOMETRIC SURFACE MAP, FEBRUARY 26, 2007

APPENDICES

APPENDIX A GROUNDWATER COLLECTION LOGS

APPENDIX B LABORATORY ANALYTICAL RESULTS



1.0 INTRODUCTION

Hercules Incorporated (Hercules) commissioned Eco-Systems, Inc. (Eco-Systems) to conduct quarterly 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.

As discussed in the CAP, groundwater monitoring wells MW-2 through MW-19 and the sampling locations established in Green's Creek are being monitored quarterly to provide groundwater and surface water quality information

This report describes sampling activities and analytical results for the third quarterly monitoring event of the second year of monitoring being conducted under the CAP. During this event, water levels were measured at 18 wells and 15 piezometers, surface water samples were collected from six locations, and groundwater samples were collected from 18 monitoring wells.

Samples collected during this monitoring event were analyzed for Volatile Organic Constituents (VOCs). Samples collected during previous quarterly monitoring events have also been analyzed for dioxathion and dioxenethion. However, the MDEQ approved Hercules request to discontinue dioxathion and dioxenethion analyses in a letter to Hercules dated August 18, 2006. Per the conditions in the August 18, 2006 letter, future analyses for dioxathion and dioxenethion will be conducted during the annual monitoring event scheduled for May 2007 and confined to samples collected from seven monitoring wells designated by the MDEQ. Discussion of detections of dioxathion and dioxenethion will be presented in the annual monitoring report.



2.0 FIELD ACTIVITIES

Field activities conducted during this quarterly sampling event include sample collection from 18 monitoring wells and 6 surface water monitoring locations. Groundwater and surface water samples were analyzed for Appendix IX VOC's.

2.1 GROUNDWATER SAMPLE COLLECTION

On February 26, 2007 Eco-Systems personnel collected groundwater levels from the 18 monitoring wells to be sampled during the quarterly monitoring event and from the 15 piezometers at the site. Piezometer TP-1 was damaged by site activities and the groundwater level could not be measured at this location. A summary of the water level measurements obtained on February 26, 2007 is included as Table 1.

Groundwater sample collection was conducted on February 27-28, 2007. Prior to collecting a groundwater sample, the monitoring wells were purged using either low-flow/low-stress techniques or 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 simply by collecting water directly into new sample containers supplied by the analytical laboratories. During the collection of field replicates that were collected for QA/QC concerns, alternating aliquots were placed in each replicate bottle until each bottle is 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 investigation, groundwater samples were collected from permanent monitoring wells MW-2 through MW-19. Filled sample vials were immediately placed in a cooler containing sufficient ice to lower the temperature of the filled sample vials

below 4°C. Groundwater samples were shipped via overnight courier to Severn Trent Laboratories in Savannah, Georgia for VOC analysis.

2.2 SURFACE WATER SAMPLE COLLECTION

On February 26, 2007, 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 glass sample containers that were supplied by the analytical laboratory. The filled sample containers were labeled, packed and shipped/delivered in the same manner as groundwater samples discussed in Section 2.2.

2.3 QUALITY ASSURANCE/QUALITY CONTROL

For quality assurance/quality control (QA/QC) purposes, two duplicate groundwater samples, three rinseate samples, one trip blank sample, and three matrix spike and matrix 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 rinseate samples were prepared by pouring deionized water over groundwater sampling tubing and collecting the rinseate 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 LABORATORY ANALYTICAL 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. Laboratory analytical reports for the samples collected during this investigation are included in Appendix B and summarized in Table 2 and Table 3.

3.1 GROUNDWATER

VOC's were not detected at concentration above TRGs 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-14, MW-15, MW-16, and MW-18.

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

Analysis of the groundwater sample collected from monitoring well MW-09 detected benzene at concentrations greater than its associated TRG.

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

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

Analysis of the groundwater sample collected from monitoring well MW-19 detected benzene at a concentration above its associated TRG.

3.2 SURFACE WATER

VOC's were detected in surface water samples collected from locations CM-00, CM-01, CM-02, CM-03, CM-04 and CM-05.

Analysis of the surface water sample collected from location CM-00 detected acetone at a concentration below its associated TRGs.

Analysis of the surface water sample collected from location CM-01 detected acetone at a concentration below its associated TRG.

*Quarterly Monitoring Report
February 2007 Sampling Event
Hercules Incorporated
Hattiesburg, Mississippi*





Analysis of the surface water sample collected from location CM-02 detected acetone at a concentration below its associated TRG.

Analysis of the surface water sample collected from location CM-03 detected acetone at a concentration below its associated TRG.

Analysis of the surface water sample collected from location CM-04 detected acetone and benzene at concentrations below their associated TRG.

Analysis of the surface water sample collected from location CM-03 detected benzene at a concentration below its associated TRG.

3.3 QA/QC

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

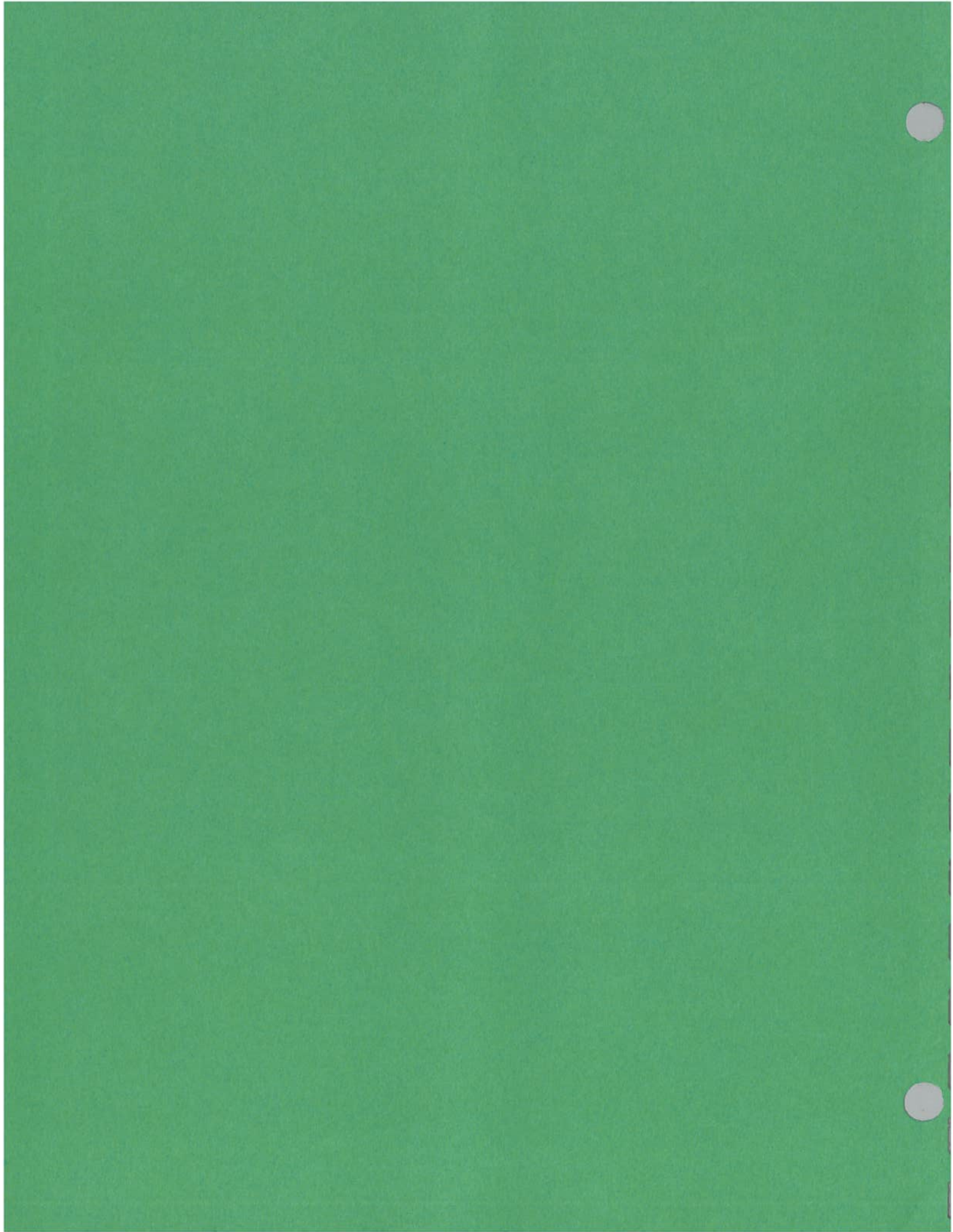
Duplicate groundwater samples were collected from MW-04 and MW-13. Review of the laboratory data indicated that the regular sample collected from monitoring well MW-04 and the duplicate sample (FD-01) were included in the same analytical batches. Constituents were not detected in the regular or duplicate samples collected from MW-04.

Variation in the analytical results for detected constituents in the duplicate sample (FD-02) collected from MW-13 generally ranged from 7% to 13%. Analysis of the duplicate groundwater sample collected

VOC's were not detected in the rinseate samples collected during this sampling event. VOC's were not detected in the trip blank that accompanied the samples collected during this sampling event.

Review of the analytical reports for VOC's that were submitted by STL 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 STL, 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.





TABLES



**TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA**

*February 26, 2007
Hercules, Incorporated
Hattiesburg, Mississippi*

WELL NO.	TOC ELEVATION (ft.) ¹	WATER DEPTH (ft.) ²	GROUNDWATER ELEVATION (ft.)
MW-1	174.12	NA ³	NA
MW-2	160.07	5.35	154.72
MW-3	160.03	5.84	154.19
MW-4	159.75	10.18	149.57
MW-5	160.99	8.50	152.49
MW-6	174.05	8.15	165.90
MW-7	183.96	14.00	169.96
MW-8	179.99	NA	NA
MW-9	181.97	12.00	169.97
MW-10	159.88	9.99	149.89
MW-11	157.18	7.35	149.83
MW-12	162.17	7.92	154.25
MW-13	175.23	8.20	167.03
MW-14	169.23	14.37	154.86
MW-15	172.21	17.40	154.81
MW-16	175.62	16.79	158.83
MW-17	186.13	17.60	167.91
MW-18	165.31	5.30	160.01
MW-19	172.25	10.91	161.34
PERMANENT MONITOR WELLS			
TP-1	172.18	NA	NA
TP-2	171.72	10.87	160.85
TP-3	169.74	8.98	160.76
TP-4	163.64	3.80	159.84
TP-5	160.54	7.96	152.58
TP-6	158.63	7.10	151.53
TP-7	167.17	8.66	158.51
TP-8	183.79	14.30	169.49
TP-9	163.44	5.45	157.99
TP-10	179.69	14.44	165.25
TP-11	162.26	7.41	154.85
TP-12	159.95	10.32	149.63
TP-13	156.99	7.29	149.70
TP-14	162.59	4.93	157.66
TP-16	179.72	12.85	166.87
TP-17	182.71	16.69	166.02
PIEZOMETERS			
SG-1	NA	NA	NA
SG-2	NA	NA	NA
SG-3	NA	NA	NA
SG-4	NA	NA	NA

NOTES:

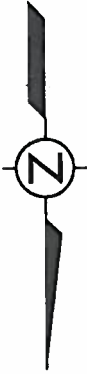
1- Elevations are in feet relative to mean sea level.

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.

SOURCE: DELORME 3D Topoguds - HATTIESBURG, MISSISSIPPI

QUADRANGLE LOCATION



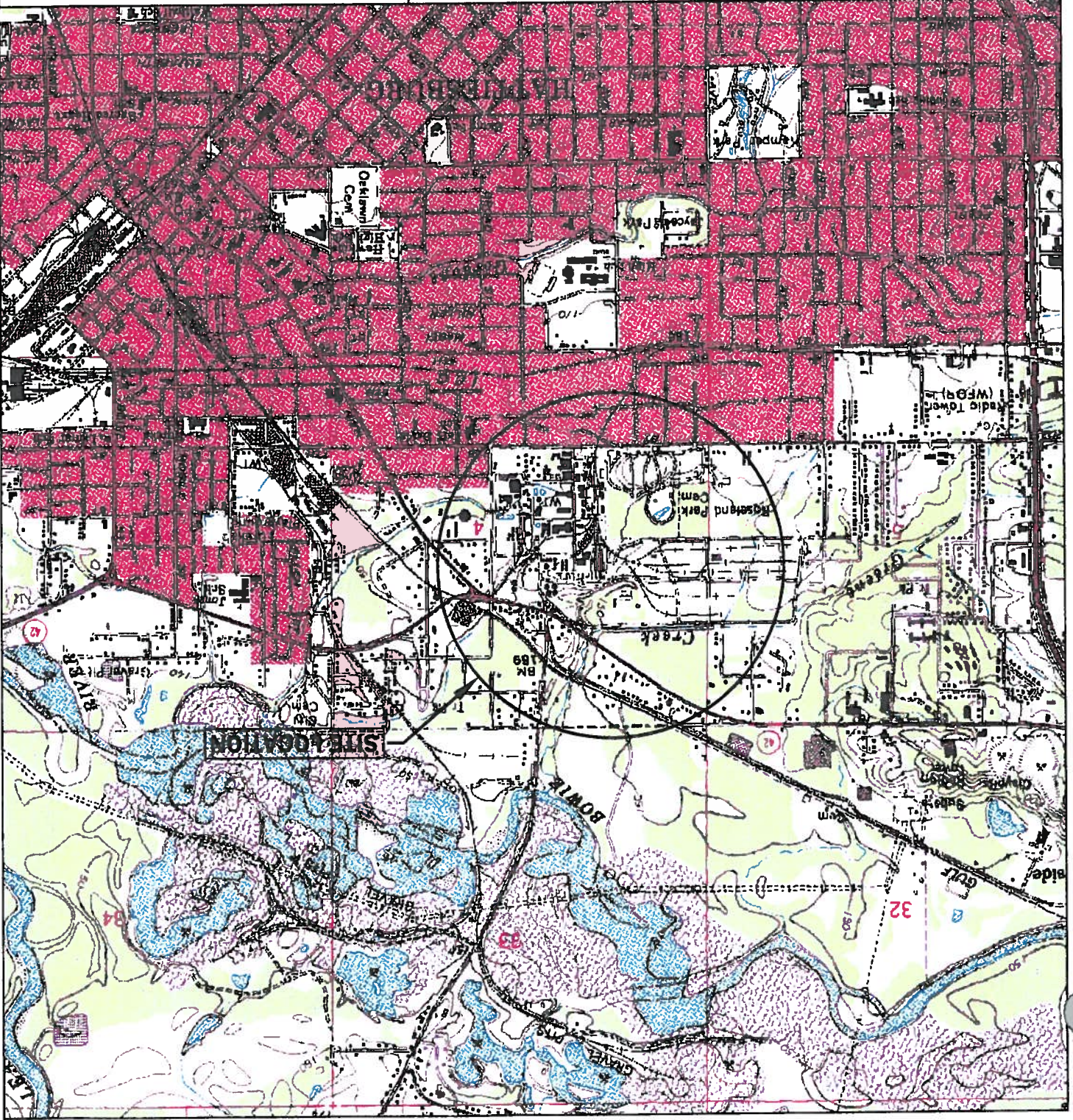
HERCULES INCORPORATED
HATTIESBURG, MISSISSIPPI

Eco-Systems, Inc.
Consultants, Engineers and Scientists

SCALE: 1"=2000'	DRAWN BY: N. SISSON	DATE: 2/27/2007
CHKD. BY:		
PROJECT NO. HER25080	CAD FILE HER25080-TOPO.dwg	

FIGURE 1

SITE LOCATION MAP





APPENDIX A
GROUNDWATER COLLECTION LOGS

Project Name: Heracles, Inc
 Project Number: HR25090-c-M5

Boring ID: WM-02
 Site Location: Haltersburg, MS

Start Date: 02-27-07 Finish Date: 02-27-07

Sample Technician: Chris Pershke
 Purge/Sample Method: Peristaltic Pump

Well Diameter (d): 2"
 Total Depth (TD): 20.5'

Approximate Depth of Water Column (h): 20.5'
 (h = TD - DTW [ft-bloc])

Calculated Well Volume (V=6hd²)
 (V = vol in gal; d = well diam. in ft):

Depth-to-Water (DTW) Measurements	Date	DTW (ft-bloc)
	02-26-07	0850
	02-27-07	0950
		5.71
		5.35
		1008
		5.73

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-27-07/0950	0.0	5.55	92.9	18.3	4.5			
0954	0.25	5.84	91.9	18.2	3.5			
0956	0.50	5.90	91.1	18.0	1.7			
1000	0.75	5.84	90.6	18.0	1.9			
1005	1.00	5.76	91.0	17.9	1.6			
1010	1.25	5.72	92.2	17.9	1.2			
1013	1.50	5.73	91.5	17.9	9			

WELL DEVELOPMENT/PURGING DATA

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-07	1015	3-100ml VOA	Her
	1020	3-100ml VOA	Her

Sample Identification: HR-M402-022707
HR-R52-022707
 Weather Conditions During Sampling: Sunny; ~85°F
 Comments:

Sample Technician: CT Date: 02-27-07

Notes: ft-bloc = 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.

Project Name: Hercules, Inc
 Project Number: HER25080-CE-MS

Boring ID: MM-10
 Site Location: Haltersburg, MS

Start Date: 02-27-07 Finish Date: 02-27-07
 Sample Technician: Chris Turrell / Trans Beards
 Purge/Sample Method: Peristaltic Pump
 Well Diameter (d): 2"
 Total Depth (TD): 18.5'
 Approximate Depth of Water Column (h): 18.5' - 9.99 = 8.51
 Calculated Well Volume (V=6hd²): 1.39
 (V = vol in gal; d = well diam. in ft)

Depth-to-Water (DTW) Measurements	
Date	DTW (ft-bloc)
02-26-07	9.99
02-27-07	10.20
"	10.20

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-27-07 / 10:35	0.0	5.95	34.9	18.7	3.2			
10:38	0.25	5.41	33.6	18.3	2.9			
10:40	0.50	5.33	34.4	18.2	2.7			
10:43	0.75	5.23	34.1	18.1	2.6			
10:46	1.00	5.32	34.4	18.1	2.6			
10:50	1.25	5.29	34.4	18.1	2.8			
10:55	1.50	5.30	33.0	18.3	2.8			Well Volume
11:00	2.50	5.22	36.3	17.7	2.1			
11:15	3.50	5.20	36.6	17.7	2.2			
11:27	4.50	5.20	36.8	17.7	2.2			

WELL DEVELOPMENT/PURGING DATA

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-07	11:30	3-4oz VOA	HPL

Sample Identification: H68-MW10-022707

Weather Conditions During Sampling: Sunny ~ 70°F

Comments:

Sample Technician: N Date: 02-27-07

Notes: ft-bloc = 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: Hercules
 Project Number: HER-25080-CC-M5

Boring ID: MW-11
 Site Location: Hattiesburg, MS

Start Date: 02-27-2007 Finish Date: 02-27-2007
 Sample Technician: Chris Terrell / New's Band
 Purge/Sample Method: Peristaltic Pump
 Well Diameter (d): 2"
 Total Depth (TD): 17'
 Approximate Depth of Water Column (h):
 (h = TD - DTW [R-bloc]):
 Calculated Well Volume (V = 6hd²):
 (V = vol in gal; d = well diam. in ft):

Depth-to-Water (DTW) Measurements	Date	DTW (R-bloc)
7.35	02-26-07	0925
7.45	02-27-07	1233
7.46	"	1242

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-27-2007/1230	0.0	5.76	229	19.3	5.2			
1232	0.25	5.84	199.8	19.3	5.4			
1235	0.50	5.83	199.9	18.9	6.7			
1239	0.75	5.85	200.0	19.2	7.9			
1242	1.00	5.84	227	19.0	7.2			
1247	1.25	5.83	228	18.7	6.1			

Date	Time	Sample Container	Preservative
02-27-2007	1250	3-40 mL VOA	HCl

GROUNDWATER SAMPLE CONTAINERS

Sample Identification: HER-MW11-022707

Weather Conditions During Sampling: Clear 75°F

Comments:

Sample Technician: CT/TS

Date: 02-27-2007

Notes: R-bloc = 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.

Project Name: Hercules
 Project Number: HER 25080-CC-M5

Boring ID: MW-5
 Site Location: Hatfieldburg, MS

Start Date: 02-27-2007
 Finish Date: 02-27-2007
 Sample Technician: CHS Terrell / Travis Reed
 Purge/Sample Method: Peristaltic Pump
 Well Diameter (d): 2"
 Total Depth (TD): 18.5
 Approximate Depth of Water Column (h): 18.5 - 8.5 = 10 (0.163)
 Calculated Well Volume (V=6hd²): 1.63
 (V = vol in gal; d = well diam. in ft)

Depth-to-Water (DTW) Measurements	
Date	DTW (ft-bioc)
02-26-07	8.50
02-27-07	8.85

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity μS (mg/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-27-2007/1330	0.0	6.64	537	19.7	600			
1335	0.25	6.70	528	19.0	450			
1340	1.00	6.64	534	18.5	21			switch to well up
1345	2.00	6.49	626	18.5	13			
1350	3.00	6.42	671	18.4	4.7			
1355	4.00	6.38	701	18.5	7.4			
1400	5.00	6.34	720	18.8	2.4			

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-2007	1405	3-40ml VOA	HC1

Sample Technician: CT/TS
 Date: 02-27-2007

Notes:
 ft-bioc = 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.

Sample Identification: HER-MW05-022707
 Weather Conditions During Sampling: Clear 75°F
 Comments:

Collection Log

Groundwater Sample

Project Name: Hercules
 Well Number: HER 25070-CC-M5

Boring ID: M517
 Site Location: Hattiesburg, MS

Start Date: 02-28-2007 Finish Date: 02-28-2007

Sample Technician: Chris Terrell / Travis Beard
 Purge/Sample Method: Peristaltic Pump

Well Diameter (d): 2" Total Depth (TD): 22.7

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)
02-26-07	11:36	17.60
02-28-07	12:47	17.75
02-28-07	12:55	17.75

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-28-2007/1240	0.0	6.14	651	22.2	44.8			
1244	0.25	6.16	641	22.0	48.2			
1247	0.50	6.13	646	21.9	18.5			
1251	0.75	6.14	641	21.8	18.2			
1255	1.00	6.14	634	21.8	13.6			
1300	1.25	6.15	633	21.8	9.8			

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-28-07	1305	3-40mL VOA	HCl

Sample Identification: HER-M517-022807

Weather Conditions During Sampling: Cloudy 70°F

Comments:

Sample Technician: CA/TB Date: 02-28-2007

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.

Groundwater Sample Collection Log

Environmental Engineers and Scientists

Eco-Systems, Inc.



Project Name: Hercules
Project Number: HER 25080-CC-M5

Boring ID: MW 09
Site Location: Hattiesburg, MS

Start Date: 02-28-2007
Finish Date: 02-28-2007

Sample Technician: Chris Terrell / Travis Beard

Purge/Sample Method: Resistive Pump

Well Diameter (d): 2"

Total Depth (TD): 20'

Approximate Depth of Water Column (h):

(h = TD - DTW [ft-btc]):

Calculated Well Volume (V = 6hd²):

(V = vol in gal; d = well diam. in ft):

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btc)
02-26-07	11:40	12.00
02-28-07	12:13	12.40
02-28-07	12:18	12.19

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-28-2007/12:07	0.0	5.92	433	21.3	5.31			
12:10	0.25	5.88	447	20.7	3.33			
12:13	0.50	5.88	483	20.7	2.86			
12:16	0.75	5.90	538	20.7	2.71			
12:19	1.00	5.92	558	20.6	2.98			
12:3	1.25	5.91	587	20.7	2.65			

WELL DEVELOPMENT/PURGING DATA

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-28-07	12:30	5-40 mL VOA	HCL

Sample Identification: HER-MW09-022807

Weather Conditions During Sampling: Cloudy @ 65°F

Comments:

Sample Technician: CT/TB

Date: 02-28-2007

Notes: ft-btc = 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: Hercules Boring ID: MW13 Site Location: HCR 25080-CL-M5

Start Date: 02-28-2007 Finish Date: 02-28-2007

Sample Technician: CARL TERRELL / TRAVIS BEARD

Purge/ Sample Method: Peristaltic Pump

Well Diameter (d): 2" Total Depth (TD): 18.5

Approximate Depth of Water Column (h): (h = TD - DTW [ft-bloc])

Calculated Well Volume (V=6hd²): (V = vol in gal; d = well diam. in ft)

Depth-to-Water (DTW) Measurements	Date	DTW (ft-bloc)
8.20	02-26-07	112.6
8.40	02-28-07	112.0
8.36		

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-28-2007/1115	0.0	5.51	186.6	22.1	28.4			
1117	0.25	5.43	185.2	21.7	4.7			
1120	0.50	5.41	189.0	21.7	6.62			
1124	0.75	5.50	197.4	21.6	7.47			
1127	1.00	5.61	257	21.5	7.28			
1130	1.25	5.70	276	21.5	7.97			
1133	1.50	5.48	292	21.5	8.67			
1136	1.75	5.83	309	21.4	11.1			
1139	2.00	5.87	329	21.4	8.52			
1142	2.25	5.90	338	21.5	6.39			

WELL DEVELOPMENT/PURGING DATA

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-07	1145	3-40 mL VOA	HCl
02-28-07	1145	3-40 mL VOA	HCl

Sample Identification: HCR-MW13-022807

Weather Conditions During Sampling: Cloudy = 65°F

Comments:

Sample Technician: C/TS

Date: 02-28-2007

Notes: ft-bloc = 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: Hercules
 Project Number: HCR 25080

Boring ID: MW14
 Site Location: Matthews, MS

Start Date: 02-28-2007
 Finish Date: 02-28-2007

Sample Technician: Chris Terrell / Travis Beard
 Purge/Sample Method: Peristaltic Pump
 Well Diameter (d): 2"

Total Depth (TD): 24.3
 Approximate Depth of Water Column (h):
 (h = TD - DTW [ft-bloc])

Calculated Well Volume (V = 6hd²)
 (V = vol in gal; d = well diam. in ft.)

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-bloc)
02-26-07	1022	14.57
02-27-07	1044	15.35
"	1050	15.35

WELL DEVELOPMENT/PURGING DATA							
Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity μS (mg/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)
02-28-2007/1035	0.0	6.44	620	20.5	24.4		
1040	0.25	6.40	619	20.9	10.08		
1044	0.50	6.40	613	20.9	5.78		
1047	0.75	6.41	616	20.9	7.54		
1050	1.00	6.45	607	20.9	8.1		

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-28-07	1035	3-40ml VOA	HCl

Sample Identification: HCR-MW14-022807

Weather Conditions During Sampling: Clear = 65°F

Comments:

Sample Technician: CTB Date: 02-28-2007

Notes: ft-bloc = 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.

Project Name: Hercules
 Project Number: HER 25080-CC-M5

Boring ID: MW15
 Site Location: Hillsburg, MS

Start Date: 02-28-2007
 Finish Date: 02-28-2007
 Sample Technician: Chris Terrell / Travis Beard
 Purge/ Sample Method: Peristaltic Pump
 Well Diameter (d): 2"
 Total Depth (TD): 26.5
 Approximate Depth of Water Column (h): _____
 $(h = TD - DTW [ft-bloc])$
 Calculated Well Volume ($V = \pi r^2 h$)
 $(V = vol \text{ in gal; } d = \text{well diam. in ft})$

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-bloc)
02-26-07	1019	17.40
02-28-07	1004	18.85

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-28-2007/0951	0.0	6.43	732	21.9	40.0			
1000	0.25	6.41	713	21.6	6.62			
1004	0.50	6.40	705	21.7	10.27			
1007	0.75	6.41	708	21.9	9.53			
1010	1.00	6.40	703	22.1	8.46			

Notes:
 ft-bloc = 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.

Sample Technician: CT/YS Date: 02-28-07

Comments:

Weather Conditions During Sampling: Clear = 60°F

Sample Identification: HER-MW15-022507

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-28-07	1015	3-40-LVW	HCl

Project Name: Hercules
 Project Number: HER 25080-CC-M5

Boring ID: MW16
 Site Location: Waltham, MS

Start Date: 02-28-2007
 Finish Date: 02-28-2007
 Sample Technician: Chris Terrell / Travis Beard
 Purge/ Sample Method: Peristaltic Pump
 Well Diameter (d): 2"
 Total Depth (TD): 28.5
 Approximate Depth of Water Column (h):
 (h = TD - DTW [ft-bloc])
 Calculated Well Volume (V = $\pi r^2 h$)
 (V = vol in gal; d = well diam. in ft.)

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-bloc)
02-28-07	10:16	16.79
02-28-07	09:35	16.84

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
02-28-2007/09:25	0.0	6.34	703	21.1	27.8			
09:29	0.25	6.38	682	21.2	6.67			
09:32	0.50	6.38	673	21.2	4.53			
09:35	0.75	6.35	661	21.3	7.32			
09:38	1.00	6.34	658	21.3	5.27			

Sample Identification: HER-MW16-022807

HER-ES3-022807

Weather Conditions During Sampling: clear = 60°F

Comments: Effluence observed

Sample Technician: C/TB

Date: 02-28-2007

Notes: ft-bloc = 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

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-28-07	09:40	3-40ml VOA	HCl
02-28-07	09:30	3-40ml VOA	Ascl

MW16
 ES3

Project Name: Hercules Boring ID: MW-07
 Project Number: HER 25080-CC-MS Site Location:

Start Date: 02-28-2007 Finish Date: 02-28-2007
 Sample Technician: Chris Terrell / Travis Beard
 Purge/Sample Method: Per's Fall the Pump
 Well Diameter (d): 2"
 Total Depth (TD):
 Approximate Depth of Water Column (h):
 (h = TD - DTW [ft-bloc])
 Calculated Well Volume (V = $\pi r^2 h$)
 (V = vol in gal; d = well diam. in ft.)

Depth-to-Water (DTW) Measurements	
Date	DTW (ft-bloc)
02-26-07	11.20
02-28-07	08.34
02-28-07	14.20
02-28-07	14.20

WELL DEVELOPMENT/PURGING DATA							
Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity $\mu S/cm$	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)
02-28-2007/0825	0.0	5.38	139.5	19.5	2.86		
0830	0.25	5.22	140.2	19.8	64.9		
0834	0.50	5.22	143.8	19.8	75.2		
0837	0.75	5.19	142.1	19.8	48.2		
0840	1.00	5.19	143.2	19.6	38.8		
0844	1.25	5.15	141.0	19.8	21.5		
0848	1.50	5.15	140.7	19.8	18.5		
0851	1.75	5.11	139.5	19.6	12.7		
0855	2.00	5.12	137.5	19.6	8.08		

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-28-07	0900	9-40 mL VOA	HCl

Sample Identification: HER-MW07-022807 (MS/MSD)
 Weather Conditions During Sampling: clear = 60°F
 Comments:
 Sample Technician: CT/TB Date: 02-28-07
 Notes: ft-bloc = 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

Groundwater Sample



Project Name: Hercules

Project Number: HGR 25080 - CC - M3

Boring ID: MW 06

Site Location: Hattiesburg, MS

Start Date: 02-27-2007

Finish Date: 02-27-2007

Sample Technician: Chris Terrell / Travis Brand

Purge/ Sample Method: Percussive / Hand Pump

Well Diameter (d): 2"

Approximate Depth of Water Column (h): 23.25

Total Depth (TD): 23.25

(h = TD - DTW [ft-bloc]):

Calculated Well Volume (V=6hd²):

(V = vol in gal; d = well diam. in ft):

Depth-to-Water (DTW) Measurements	Date	Time	DTW (ft-bloc)
	02-26-07	1045	8.15
	02-27-07	1507	8.69
		1513	8.75

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-27-2007/1503	0.0	5.84	176.6	21.5	80			
1507	0.25	5.77	175.9	21.1	17			
1510	0.50	5.77	176.5	20.6	9.1			
1513	0.75	5.79	175.7	20.6	9.9			
1516	1.00	5.76	176.1	20.4	12			
1520	1.25	5.81	176.0	20.3	10			

WELL DEVELOPMENT/PURGING DATA

Sample Identification: HGR-MW06-022707

Weather Conditions During Sampling: Clear, 75.F

Comments:

Sample Technician: CTB Date: 02-27-2007

Notes: ft-bloc = 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.

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-2007	1525	3-40mL VOA	HCL

Collection Log

Project Name: Korales, Inc. HERSO 80-CC MS
 Boring ID: MM18
 Site Location: Waterbury, MS

Start Date: 02-27-2007 Finish Date: 02-27-2007

Sample Technician: Chris Towell / Travis Beards
 Purge/Sample Method: Peristaltic Pump

Well Diameter (d): 2"
 Total Depth (TD): _____
 Approximate Depth of Water Column (h): _____
 (h = TD - DTW [ft-btoc])

Calculated Well Volume (V = $\pi d^2 h$)
 (V = vol in gal; d = well diam. in ft)

Depth-to-Water (DTW) Measurements	Date	Time	DTW (ft-btoc)
	02-26-07	10:57	5.30
	02-27-07	15:43	5.47

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity μS (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02/27/07 / 15:37	0.0	6.28	802	21.4	6.36			
15:41	0.25	6.29	807	20.7	6.58			
15:43	0.50	6.27	813	20.5	9.31			
15:46	0.75	6.30	802	20.7	13.0			
15:50	1.00	6.28	805	20.5	9.87			

WELL DEVELOPMENT/PURGING DATA

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-07	15:55	3-4oz L VOA	HE1

Sample Identification: HGR-MM18-022707

Weather Conditions During Sampling: Sunny & 75°

Comments: _____

Sample Technician: CS Date: 02-27-07

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.

Project Name: Hercules
 Object Number: HER 25080-CC-M5

Boring ID: MW 12
 Site Location: Hattiesburg, MS

Start Date: 02-27-2007
 Finish Date: 02-27-2007
 Sample Technician: Chris Tennell/Traut Beard
 Purge/Sample Method: Insta/Hc Pump
 Well Diameter (d): 2"
 Total Depth (TD): 12'
 Approximate Depth of Water Column (h):
 $(h = TD - DTW \text{ [R-bloc]})$
 Calculated Well Volume ($V = 6hd^2$)
 $(V = \text{vol in gal; } d = \text{well diam. in ft})$

Depth-to-Water (DTW) Measurements	
Date	DTW (R-bloc)
02-26-07	1039
02-27-07	1430
02-27-07	822
02-27-07	833

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity μS (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
02-27-2007/1445	0.0	5.53	79.9	20.5	150			
1430	0.25	5.41	73.5	20.0	18			
1435	0.50	5.39	73.1	19.6	14			
1440	0.75	5.39	73.7	19.5	12			
1445	1.00	5.39	73.2	19.5	9.2			

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
02-27-07	1430	3-40-L-VOA	HCl

Sample Identification: HER-MW12-022707

Weather Conditions During Sampling: Clear 75°F

Comments:

Sample Technician: CT/RB Date: 02-27-2007

Notes: R-bloc = 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.

