

Quarterly Monitoring Report

Hercules Incorporated Hattiesburg, Mississippi

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Prepared for:
Hercules Incorporated

December 2005





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1.0 INTRODUCTION

Hercules Incorporated (Hercules) commissioned Eco-Systems, Inc. (Eco-Systems) to conduct monitoring well installation and 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 <u>Corrective Action Plan Revision 01</u> (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.

In April 2005, groundwater monitoring wells MW-12 through MW-19, which were specified in the CAP, were installed at the site. As discussed in the CAP, these new groundwater monitoring wells, the previously installed monitoring wells, and the sampling locations established in Green's Creek are being monitored quarterly to provide groundwater and surface water information

This report describes sampling activities and analytical results for the 2nd quarterly monitoring event. During this event, water levels were measured 18 wells and 16 piezometers, surface water samples were collected from six locations, and groundwater samples were collected from 18 monitoring wells.



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. Per the CAP, groundwater and surface water samples were analyzed for Appendix IX VOC's and for Dioxathion.

2.1 GROUNDWATER SAMPLE COLLECTION

On November 2, Eco-Systems personnel collected groundwater levels from the 18 monitoring wells to be sampled during the quarterly monitoring event and from the 16 piezometers at the site. A summary of the water level measurements obtained on November 2, 2005 is included as Table 1.

Groundwater sample collection was conducted on November 2 & 3, 2005. Prior to collecting a groundwater sample, the monitoring wells were purged using either *low-flow/low-stress* technique. The *low flow/low stress* technique consisted of slowly lowering dedicated tubing connected to a peristaltic pump into a region of adequate permeability within the water-bearing zone. If possible, the suction end of the tubing was placed at the midpoint of the well screen for sampling. Purging was established with withdrawal of water at a rate that created an equilibrium with recharge (e.g., stabilized water table). Equilibrium is dependent upon the stabilization of at least temperature, pH, specific conductance, and turbidity. 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 for VOC analysis were shipped via overnight courier to Severn Trent Laboratories in Savannah, Georgia for analysis. Groundwater samples for Dioxathion were delivered to Bonner Analytical and Testing Company (BATCO) for analysis.

2.2 SURFACE WATER SAMPLE COLLECTION

On November 2, 2005, 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 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 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 and for Dioxathion according to the <u>Sampling and Analysis Protocol for the Determination of Dioxathion in Water</u> (Hercules, 2002). Laboratory analytical reports for the samples collected during this investigation are included in Appendix B and summarized in Table 2, Table 3 and Table 4.

3.1 GROUNDWATER

Discussion presented in this section summarizes the analytical results for groundwater samples collected from monitoring wells MW-2 through MW-19 on November 2 & 3, 2005.

3.1.1 Volatile Organic Compounds

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

Acetone was detected in the groundwater sample collected from monitoring wells MW-2 at a concentration of 32 μ g/L, which is less than the Target Remedial Goal (TRG) for acetone of 608 μ g/L. The TRG's are found in the Tier 1 Target Remedial Goal Table of the Final Regulations Governing Brownfields Voluntary Cleanup And Redevelopment In Mississippi, published by the Mississippi Commission on Environmental Quality and adopted May 1999 and revised March 2002. Acetone has not been previously detected in groundwater samples collected from MW-2, and the detection of acetone in the sample may be an artifact of sampling or analysis.

Analysis of the groundwater sample collected from monitoring well MW-08 detected benzene, chlorobenzene, carbon tetrachloride, chloroform, and toluene at concentrations above their respective TRG's. Concentrations of ethylbenzene and xylene, were detected in the sample collected from MW-8 at concentrations less than their respective TRG's.

Analysis of the groundwater sample collected from monitoring well MW-09 detected benzene at a concentration above its TRG of 5 μ g/L. Concentrations of 1,1-dichloroethene and ethylbenzene were detected in the sample collected from MW-09 at concentrations less than their respective TRG's.



Analysis of the groundwater sample collected from monitoring well MW-13 detected benzene, carbon tetrachloride and chloroform at concentrations greater than their respective TRG's. Concentrations of acetone, chlorobenzene and vinyl chloride were detected in the sample collected from MW-13 at concentrations less than their respective TRG's.

Acetone was detected in the groundwater sample collected from MW-14. The concentration of acetone detected in the sample collected from MW-14 was less than the TRG for acetone.

Analysis of the groundwater sample collected from monitoring well MW-16 detected benzene and toluene at concentrations less than their respective TRG's.

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

Analysis of the groundwater sample collected from monitoring well MW-18 detected benzene, chlorobenzene, and 1,1-dichloroethene at concentrations less than their respective TRG's.

Analysis of the groundwater sample collected from monitoring well MW-19 detected benzene at a concentration above the TRG. Chlorobenzene and ethylbenzene were detected in the sample collected from MW-19 at concentrations less than their respective TRG's.

3.1.2 Dioxathion

Analysis for dioxathion includes analysis for both the cis- and trans- isomers and for dioxenethion. Cis-dioxathion and trans-dioxathion were not detected in the groundwater samples collected during the November 2005 monitoring event.

Dioxenethion was not detected in the groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-18, and MW-19.

Dioxenethion was detected in the groundwater samples collected from monitoring wells, MW-8 and MW-17 at concentrations of 2,492 μ g/L and 2,802 μ g/L, respectively. A TRG has not been established for dioxenethion.



3.2 SURFACE WATER

Discussion presented in this section summarizes the analytical results for surface water samples collected from sampling locations CM-0 through CM-5 on November 2, 2005.

3.2.1 Volatile Organic Compounds

VOC's were not detected in surface water samples collected from locations CM-00, CM-01, CM-02, CM-04, and CM-05. The surface water sample collected from location CM-03 contained benzene at a concentration above the MDL but less than the TRG.

3.1.2 Dioxathion

Dioxenethion, cis-dioxathion and trans-dioxathion were not detected in the surface water samples collected during the November 2005 monitoring event.

3.3 QA/QC

Analytical reports for the QA/QC samples are included in Appendix B and summarized in Table 4.

Duplicate groundwater samples were collected from MW-9, MW-16, and MW-17. Analysis of the duplicate groundwater sample collected from MW-9 detected the same concentrations of 1,1-dichloroethene as was detected in the regular sample and similar concentrations of benzene, ethylbenzene, and toluene. Dioxathion constituents were not detected in the regular or duplicate samples collected from MW-9.

Analysis of the duplicate groundwater sample collected from monitoring well MW-16 detected similar concentrations of benzene and toluene. Dioxathion constituents were not detected in the regular or duplicate samples collected from MW-16.

Analysis of the duplicate groundwater sample collected from monitoring well MW-17 detected the same concentration of chloroform as the regular sample and similar concentrations of benzene and carbon tetrachloride. Concentrations of chlorobenzene and toluene were detected in the duplicate sample from MW-17 at concentrations less than the laboratory reporting limit for those constituents in the regular sample. Due to the difference in the reporting limits used by the laboratory for the regular and duplicate samples, comparison of detected concentrations of chlorobenzene and toluene is not practical. Dioxenethion was detected in the duplicate sample collected from MW-17 at a similar concentration as was detected in the regular sample. Cis-dioxathion and trans-



dioxathion were not detected in either the regular or duplicate samples collected from MW-17.

Analysis of the rinsate sample collected on November 2, 2005 (RS-01) detected concentrations of chloroform, methylene chloride, and toluene. Analysis of the rinsate sample collected on November 3, 2005 (RS-02) did not detect VOC's. Dioxathion constituents were not detected in either of the three rinsate samples.

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

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. 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.

As reported by BATCO, all method blanks, were non-detect for dioxathion constituents. The laboratory QC spike sample recoveries were within acceptable limits for all samples except for the sample collected from MW-8. The narrative reported submitted by BATCO with the analytical reports indicated that the sample collected from MW-8 contained a matrix interference with the same retention time as naphthalene, which was used as a spike surrogate for dioxathion analyses. Due to the matrix interference, surrogate recoveries for the MW-8 and MW-17 samples were 1,806% and 1,388% of the spiked amount, respectively. Since the sample collected from MW-8 in February 2003 detected naphthalene, it is reasonable to assume that the matrix interference reported by the laboratory is caused by the presence of naphthalene in the groundwater samples, and the dioxathion analysis for these samples is, therefore, acceptable. Surrogate spike recoveries for other samples ranged from 51.2% to 96.4%. Based on the information received, the samples were extracted and analyzed within 7 days. The proscribed extraction time and holding time for organophosphorous compounds is 7 days and 40 days, respectively.





TABLES

TABLE 1 SUMMARY OF GROUNDWATER ELEVATION DATA

November 2, 2005

Hercules, Incorporated Hattiesburg, Mississippi

0	Hamesdu	rg, Mississippi	
WELL NO.	TOC ELEVATION	WATER DEPTH	GROUNDWATER
WELL NO.	(ft.)¹	(ft) ²	ELEVATION (ft.)
 	PERMANENT	MONITOR WELLS	
MW-1	174.12	na ³	na
MW-2	160.07	8.10	151.97
MW-3	160.03	9.04	150.99
MW-4	159.75	11.55	148.20
MW-5	160.99	11.03	149.96
MW-6	174.05	10.41	163.64
MW-7	na	14.77	na
MW-8	179.99	na	na
MW-9	na	13.08	na
MW-10	159.88	11.89	147.99
MW-11	157.18	8.71	148.47
MW-12	162.17	9.48	152.69
MW-13	175.23	10.30	164.93
MW-14	169.23	17.03	152.20
MW-15	172.21	20.89	151.32
MW-16	175.62	17.31	158.31
MW-17	186.13	18.25	167.88
MW-18	165.31	7.28	158.03
MW-19	172.25	11.81	160.44
	STAF	F GAUGES	11
SG-1	NA	NA	NA
SG-2	NA	NA	NA
SG-3	NA	NA	NA
SG-4	NA	NA	NA
	PIEZ	OMETERS	
TP-1	172.18	6.62	165.56
TP-2	171.72	12.74	158.98
TP-3	169.74	10.58	159.16
TP-4	163.64	8.44	155,20
TP-5	160.54	10.50	150.04
TP-6	158.63	9.55	149,08
TP-7	167.17	9.93	157.24
TP-8	183.79	14.86	168.93
TP-9	163.44	7.87	155,57
TP-10	179.69	15.34	164.35
TP-11	162.26	11.21	151.05
TP-12	159.95	12.14	147.81
TP-13	156.99	8.54	148.45
TP-14	162.59	6.80	155.79
TP-16	179.72	14.01	165.71
TP-17	182.71	17.20	165.51

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.

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Location	Date	Acetone	Beazene.	Chlorobenzene	Carbon Tetrachioride	Chloroform	Promodichioromethane	Bromomethane	Chloroethane	Chloromethane	Dibromochioromethane	cis-1,2-dichloroethene	isapropylbenzene	methylene chloride
CM-00	Sep-03	NA ¹	7 1.0	< 1.0	< 1.0									
0111 00	Aug-05	<1 25	< 1.0	< 1.0	< 1.0	< 1.0 0 < 1.0 0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA NA	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	NA	NA	NA	< 5.0
CM-01	Feb-03	NA	2.8	< 10.0	3.03	2.34 0.0	< 10.0	< 10.0	20.5	< 10.0	NA < 10.0	NA < 10.0	NA < 10.0	< 5.0 < 13.0
	Sep-03	NA	< 1.0	6.6	< 1.0	< 1.0 .0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 _0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
CM-02	Feb-03	NA	1.17	< 10.0	1.5	< 10.0 0.0	< 10.0	< 10.0	15.6	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
CM-03	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
CIAI-02	Feb-03 Aug-05	NA < 25	3.7	< 10.0	< 10.0	<10.0 0.0	< 10.0	< 10.0	8.42	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Nov-05	< 25	1.1	< 1.0 < 1.0	<1.0 <1.0	< 1.0 0	NA.	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
CM-04	Feb-03	NA.	2.25	< 10.0	< 10.0	<1.0 0 <10.0 0	NA.	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 10.0 0.0 < 1.0 0	< 10.0	< 10.0	3.43	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA.	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	NA NA	NA	NA	< 5.0
CM-05	Feb-03	NA	4.04	< 10.0	< 10.0	< 10.0 0.0	< 10,0	< 10.0	< 12.0	< 10.0	< 10.0	NA < 10.0	NA < 10.0	< 5.0 < 13.0
	Aug-05	< 25	< 1.0	< 1.0	< 1.0	<1.0 0	NA.	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA.	< 1.0	< 1.0	< 1.0	NA	NA NA	NA	< 5.0
MW-02	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	32	< 1.0	< 1.0	< 1.0	< 1.0 0	NA.	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-03	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA.	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-04	Nov-05	< 25 ND ³	< 1.0	< 1.0	< 1.0	< 1.0_0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MI MA-04	Dec-02 Feb-03	NA NA	14.0 < 10.0	1.81	10.0	ND D	ND	ND	63.0	1.72	ND	ND	1.26	ND
	Ang-03	NA NA	< 1.0	< 1.0	< 10.0 < 1.0	< 10.0).0 < 1.0 0	< 10.0	< 10.0	< 12.0	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Aug-05	< 25	< 1.0	< 1.0	< 1.0		< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0 < 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-05	Aug-05	< 25	< 1.0	1.3	< 1.0	< 1.0 0	NA NA	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	NA NA	NA NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA NA	< 1.0	< 1.0	< 1.0	NA NA	NA NA	NA NA	< 5.0 < 5.0
MW-06	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-07	- 1	< 25	< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
100	Nov-05		< 1.0	< 1.0	< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-08	Dec-02	ND	6,900	290	16,000	1,8008	6.84	4.07	66.0	39.2	4.45	19	4.6	26.1
i	Feb-03	NA < 6300	< 500.0	230	12,000	1,3002	4.72	< 10.0	85.5	3.34	< 10.0	17.5	4.35	< 13.0
	- 1	< 2,500	18,000 17,000	< 250 160	3,500	510 ₅₀	NA	< 250	< 250	< 250	NA	NA	NA	< 1,300
MW-09	Dec-02	ND	9.15	ND	1,000 ND	260 00 ND D	NA	< 100	< 100	< 100	NA	NA	NA	< 500
	Feb-03	NA	64.3	J 5.85	20.7	J 9.83 3.0	ND	ND	ND	ND	ND	ND	ND	2.48
		< 25	12	1.0	< 1.0	< 1.0 0	< 10.0 NA	< 10.0 < 1.0	19.7	< 10.0 < 1.0	< 10.0	< 10.0	J 1.92	< 13.0
	Jersenic .	< 25	16.0	< 1.0	< 1.0	< 1.0 0	NA NA	< 1.0	< 1.0	< 1.0	NA NA	NA NA	NA NA	< 5.0 < 5.0
/W-10	Aug-03	NA	< 1.0	< 1.0	< 1.0	< 1.0 0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Í	- 1	< 25	< 1.0		< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
		< 25	< 1.0		< 1.0	< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
(W-11	Dec-02	ND	114	ND	ND	ND D	ND	ND	ND	ND	ND	ND	ND	ND
Ì	Feb-03	NA	J 6.39	8		< 10.0).0	< 10.0	< 10.0	< 12.0	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
i	Aug-03	NA or	< 1.0			< 1.0 0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
}	2000	< 25	< 1.0			< 1.0 0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
l	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.00	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0

				1500000								12.05/2016		J. 1945	
Location	Pale	Acetone	Benzene	Chlarobenzene	Carbon Tetracitionide	Chleroform	Litchloroethene	Bromodichloromethane	Bromomethane	Chloroethane	Chloramethane	Dibromochloromethane	ch-1,2-dichioroethene	isapropylbenzene	methylene chloride
MW-12	Aug-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-13	Aug-05	< 25	120	10	260	96	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	29	78	9.3	53	56	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-14	Aug-05	34	< 1.0	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	35	< 1.0	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-15	Aug-05	84	1.7	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-16	Aug-05	< 25	2.3	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	1.2	< 1.0	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-17	Aug-05	< 6300	6,200	340	1,500	1,20)5 0	NA	< 250	< 250	< 250	NA	NA	NA	< 1,300
	Nov-05	< 13,000	1,500	< 500	17,000	1,60	000	NA	< 500	< 500	< 500	NA	NA	NA	< 2,500
MW-18	Aug-05	< 25	10	45	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	3.9	26	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
MW-19	Aug-05	< 25	20	7.5	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
ļ	Nov-05	< 25	19	6.4	< 1.0	< 1.0	.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
TRG⁴		608	5.0	100	5.0	0.15	5.00	0.168	8.52	3.64	1.43	0.126	70	679	5

- 1 NA indicates that the analyte was not analyzed.
- 2 $^{*}<^{*}$ indicates that the concentration of the analyte is less than the concentration
- 3 ND = Non Detect / No detection limit available.
- 4 Target Remediation Goals are taken from the Tier 1 Target Remedial Goal Tal
- 5 TRG not yet established for this analyte.

TABLE 3 SUMMARY OF DIOXATHION ANALYTICAL RESULTS

Hercules Incorporated Hattiesburg, MS November 2005

			Concentra	tions in µg/L	. ,,,,,
Location	Date	Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Total Dioxathion1
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
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
CM-02	Feb-03	< 2.19	8.72	< 3.04	8.72
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
CM-03	Nov-05 Feb-03	< 0.400	<0.400 <4.75	<0.400 <3.04	<0.800 <17.79
CM-03	Aug-05	3.16 1.05	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
CM-04	Feb-03	< 2.19	< 4.75	< 3.04	< 7.79
CIVI-04	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
CM-05	Feb-03	3.07	< 4.75	< 3.04	< 7.79
CIVI-03	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
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
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
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
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
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
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
MW-08	Dec-02	94.3	< 0.480	53.9	53.900
	Aug-05	539.00	< 0.400	< 0.400	< 0.800
	Nov-05	2,492.00	< 0.400	< 0.400	< 0.800
MW-09	Dec-02	5.9	12.8	< 0.300	12.800
	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
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
MW 11	Nov-05	< 0.400	<0.400 5.00	< 0.400 < 0.300	< 0.800 5.00
MW-11	Dec-02	50.3 6.24	< 0.400	< 0.300	< 0.800
	Aug-03	1.26	< 0.400	< 0.400	< 0.800
	Aug-05 Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
MW-12	Nov-05 Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
N1 AA - 1 7	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
MW-13	Aug-05	8.11	< 0.400	< 0.400	< 0.800
A1 AA - 12	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
MW-14	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
747 AA - 1-4	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
MW-15	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
141 A4 _17	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
MW-16	Aug-05	1,01	< 0.400	< 0.400	< 0.800
147 44 - 10	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
	Aug-05	2,210.00		< 0.400	< 0.800
MW-17	ו רנו-1919	12 210 00	< 0.400	1 \$10.400	<10.800

TABLE 3 SUMMARY OF DIOXATHION ANALYTICAL RESULTS

Hercules Incorporated Hattiesburg, MS November 2005

			Concentrat	tions in µg/L	
Location	Date	Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Total Dioxathion
MW-18	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
MW-19	Aug-05	< 0.400	< 0.400	< 0.400	< 0.800
	Nov-05	< 0.400	< 0.400	< 0.400	< 0.800
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 <u>Final Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi</u>, MDEQ, March 2002.
 Concentrations shown in bold are above TRGs
- 4 No established Target Remediation Goal.



FIGURES

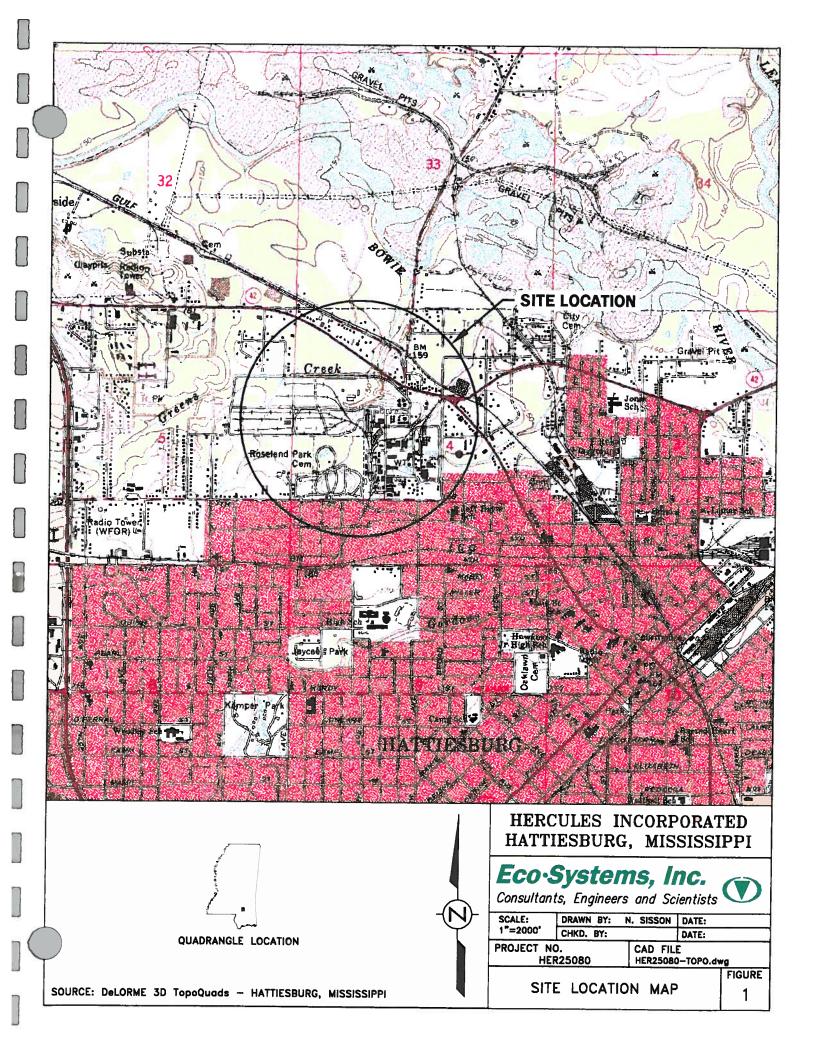
TABLE 4 SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS Hercules Incorporated Hatiiesburg, Mississippi August 2005

						Concentr	Concentrations in µg/L	7/			
Location	Benzene	Carbon Tetrachloride	Chlorobenzene	шлогогори	1,1- Dichloroethene	Ethylbenzene	Methylene Chloride	Toluene	Dioxenethion	Dioxathion (eis)	Dioxathion (trans)
60-MM	16	< 1.0	< 1.0	< 1.0	3.4	3.0	< 5.0	< 1.0	< ¹ 0.400	< 0.400	< 0.400
MW-09 DUP	18	< 1.0	< 1.0	< 1.0	3.4	3.4	< 5.0	< 1.0	< 0.400	< 0.400	< 0.400
% variation	13%	%0	%0	%0	%0	13%	%0	%0	%0	%0	%0
MW-16	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	2.1	< 0.400	< 0.400	< 0.400
MW-16 DUP	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	2.0	< 0.400	< 0.400	< 0.400
% variation	%8	%0	%0	%0	%0	%0	%0	2%	%0	%0	%0
MW-17	1500	17000	< 500	1600	< 500	< 500	< 2500	< 500	2802	< 0.400	< 0.400
MW-17 DUP	086	14000	300	1600	< 100	< 100	< 500	100	2377	< 0.400	< 0.400
% variation	35%	18%	%0	%0	%0	%0	%0	%0	15%	%0	%0
RS-01	< 1.0	< 1.0	< 1.0	11	< 1.0	< 1.0	5.1	1.5	< 0.400	< 0.400	< 0.400
RS-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	1.6	< 0.400	< 0.400	< 0.400
TB-01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	N/A²	N/A	N/A
TB-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	N/A	N/A	N/A

^{1 - &}quot;<" indicates that the concentration of the analyte is less than the concentrations shown.

^{2 -} Trip blanks were not analyzed for dioxathion constituents.









APPENDIX A
GROUNDWATER COLLECTION LOGS

Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

			001	COHOM	LUS			
Project Name:		H	lercules		Boring ID:		MM113	
et Number:		ELP25	080-CC-MS		Site Location:	1	Hattiesburg, Miss	issippi
	1.7			1 1	***************************************		***	
Start Date:	11/3/05		Finish Date	n/2/0	5		h-to-Water (DTW)	Measurements
Sample Technician:			avid Hea	d' '	3.1	Date	Time	DTW (ft-btoc)
Purge/Sample Metho	od:	Per	1stal die	Dung		11/2/05	1313	10.30
Well Diameter (d):	•	2	n			1,1	1430	10.45
Total Depth (TD [ft-			19.35				1443	10.45
Approximate Depth		(h)	9.05				1450	10.45
(h= TD - DTW [ft-bi			9.03		-	191		
Calculated Well Vol	, ,		سي					
($V = vol in gal; d = v$	vell diam. in ft):		1.5			<u> </u>		=
			WELL DEVEL	OPMENT/PU	RGING DATA			
		1	Specific	T T		Dissolved	Oxidation/Reduction	
Date/Time	Cumulative	рН	Conductivity	Temperature	Turbidity	Oxygen	Potential	Comments
11/2/05	Volume (gal)	•	(mS/cm)	(°C)	(NTU)	(mg/l)	(mV)	
1424	D	3.29	0.207	25.5	1.26			
14.39	0.5	5, 31	0.193	24.1	2.89			
1435	1,0	5.37	0,191	1	3.47			2
	1.5			34.0		<u></u>		
1442		5.73	0.251	53.3	3,31			
4448	2.0	5,95	0.318	23.1	3,49			
1454	2.5	5.93	<u>0.321</u>	23.1	2.81			
1501	3.0	5.93	0.320	J≥.0	1.90			
		- 50		L				
					-			
			*					
				 				
				 				
	- 	-						
	-		, .	<u> </u>				
E				<u> </u>				
×	41-0		,	/)	32			
Sample Identification	: HER	-MW13	-1105 (N	15/MSD)			R SAMPLE CONT.	AINERS
				<u> </u>	Date	Time	Sample Container	Preservative
Weather Conditions I	Ouring Sampling:	750	Clear Skie	2.5	11/2/05	1501	9-40ml VOA	HU
	D			 	, , , , , , , , , , , , , , , , , , ,		3-1LA6	
Comments:	-							
	<u> </u>				- V			
	1/6/	_	. 1 1					
Sample Technician:		Date:	11/2/05					
	** .=		•					
	Notes:	•						
	ft-btoc = feet be	elow top of	casing.					
	gal = gallons.							
	mS/cm = milliS	_	centimeter.					
	°C = degrees Co		3.1314 VY 1					
	NTU = Nephelo		•					
)	mg/L = milligra	ıms per lite	r.					

Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

	Project Name:		ī			_	Dania - ID.		MW-08	
	t Number:			Hercules 5080-CC-MS			Boring ID: Site Location:			
	privation.		ELFZ.	000-CC-MS			Site Location:		Hattiesburg, Missi	ssippi
ı	Start Date:	11-62-20	-05	Einich Date	14 .2	2005		D .	LA MA COUNTY	
	Sample Technician:		, t	. Fillish Date:	11-02-	2003		Date	h-to-Water (DTW) M	
	Purge/Sample Method		71					11-02-2005	1445	DTW (ft-btoc)
	Well Diameter (d):	 Z"						11-42-2005	1793	14.92'
J	Total Depth (TD [ft-b		16	3.67						
	Approximate Depth o									
I	(h= TD - DTW [ft-btc		(-)	3.75						
J	Calculated Well Volu			9710						
1	($V = vol in gal; d = w$			0.6375		2				
				WELL DEVEL	OPMENT/PUF	RGING D	ATA			
-	Date/Time	Cumulative Volume (gal)	pН	Specific Conductivity (mS/em)q5	Temperature (°C)		rbidity NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
2	11-02-2005/15 55	1921	5.9Z	697	27.9	5	.44			
n										
J								-		
1										-
ŀ										
j		†			 	-				
3										
		1								
J										
l						·				
		-								·
			11	8 %==8		_				χ
	Sample Identification:	<u>UER-N</u>	1NOB - 11	05		L			R SAMPLE CONTA	
							Date	Time	Sample Container	Preservative
	Weather Conditions D	uring Sampling	Sun	ny ; Appr	ex 80°F		11-02-2005	15/2	1-12 61	
	Comments:					μ	1-02-2005	15/2	3-40m1 VG4	HCI
	Comments;					-				
	Sample Technician:	CT	Date	11-07-2005		⊢				· · · · · · · · · · · · · · · · · · ·
	bumpie recimieium.		Daw.	11-62-2063		F				
		Notes:				F				
	= 2	ft-btoc = feet b	elow top o	f casing.						
		gal = gallons.		J						
		mS/cm = millis	Siemens pe	r centimeter.						
		°C = degrees C	_							
		NTU = Nephel	lometric Tu	ırbidity Units.						
		mg/L = milligr	ams per lite	er.						

Groundwater Sample

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	raue	OI	

Environmental Engineers and Scientists

Project Name:		I	Hercules			Boring ID:		MW-16	
ct Number:		ELP2	5080-CC-MS		-	Site Location:		Hattiesburg, Miss	sissippi
							-		
Start Date: Sample Technician: Purge/Sample Method	11-02-20	05	Finish Date:	11-0	2-200≤		Dept	h-to-Water (DTW)	Measurements
Sample Technician:			ct				Date	Time	DTW (ft-btoc)
Purge/Sample Method	l: P	uristelh	2 Lone	Flow			11-02-2005		
Well Diameter (d):		2"					11-07-2005	1550	17.32
Total Depth (TD [ft-b	toc]):					_		1606	17.33
Approximate Depth o	f Water Column	(h)		•	-	_		,,,,,	177.03
(h= TD - DTW [ft-bto	oc]):	` /							
Calculated Well Volu						-			<u> </u>
(V = vol in gal; d = work)	•								
			WELL DEVEL	OD) (EXEC)	ID CDIC				
	<u> </u>	· · · · · · · ·		OPMEN 1/F	JRGING I	DAIA	D:11		
Date/Time	Cumulative Volume (gal)	pН	Specific Conductivity (mS/cm)	Temperature (°C)		Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
11-02-2005 / 1545		/ 27		72 17	1		(IIIg/I)	()	
		6.22	782	23.2		B	1		
1551	0.25	6,34	760	22.4		.89			**************************************
1556	0.50	6,41	737	22.3	4,	/3			
1602	0.75	6.46	720	22.3	4.3	26			
1606	1.00	6.49	706	22,4	5,	17			
1611	1.25	6.50	693	22.2	4,	28			
1615	1.50	6.52	487	22.1	3.	ماا			
			<u> </u>		-				
	 						ļ	<u>.</u>	
						 			
	ļ		·						
				-					
									-
		-							
	8.5	- Kells ::		****	1,000				10.000
Sample Identification:	HER-	MH16-	1105 : HER	-FDI-1105	·	GRC	UNDWATE	R SAMPLE CONT.	AINERS
-			1 1125	1.44 1193		Date		Sample Container	Preservative
Weather Conditions D	uring Sampling:	Sur	mn 'Ann	15° F	MHILE	11-02-2005	16.10	1-161	
			110		MHIL	11-07-2005	1616	3-40~1 YOA	HU
Comments:					FDI	11-02-2005	1616	1-11-61	(, 5,
					FDI	11-02-2005	فالعا	3-40-1 VOA	
<u> </u>					,				
Sample Technician:	_CT	Date:	11-02-2005			· · · · · · · · · · · · · · · · · · ·			
	-	-					7.50		
	Notes:								
	ft-btoc = feet b	elow top of	f casing.						
	gal = gallons.	-	-					<u>-</u>	
	mS/cm = milli	Siemens pe	r centimeter.					5	
	°C = degrees C	_							
	NTU = Nephel	ometric Tu	rbidity Units.						
	mg/L = milligra mV = millivolt	ams per lite	•						

Groundwater Sample

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Environmental Engineers and Scientists

			_			_		.44	
J	Project Name:			Hercules		Boring ID:		MW15	
	ct Number:	_ 	ELP2:	5080-CC-MS		Site Location:		Hattiesburg, Miss	issippi
	Start Date:	11/1/2		Finish Date	. 1.1	<u></u>			
J	Sample Technician:	11/8/05	David	Hencl	:	<u> </u>	Dept	h-to-Water (DTW) N	
	Purge/Sample Method	di T	1>and	Hence				Time	DTW (ft-btoc)
	Well Diameter (d):	u	7 / 15 tal	Mrs. pon	7		11/2/05	1393	20.89
I	Total Depth (TD [ft-b	atocl):		24.99				1547	<u> 21.37</u>
	Approximate Depth of		(h)	20.15	·			1508	21.37
	(h= TD - DTW [ft-bt/		(11)	6.10			<u> </u>	1000	01,31
)	Calculated Well Volu			<u> </u>				-	
1	(V = vol in gal; d = w	, ,		1.0					
				WELL DEVEL	OPMENT/PUR	GING DATA			
		Cumulative		Specific	[· _	m 1:14	Dissolved	Oxidation/Reduction	
	Date/Time	Volume (gal)	pН	Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Oxygen (mg/l)	Potential (mV)	Comments
,	1537	D	6.46	1.179	23.4	108.4			
n	1545	0.5	1.57	1.129	22.3	9.56			
	1556	1.10	6.58	1,105	21.7	8.68			
}	1607	1.5	4.57	1,093	31.63 2 2016	3,32			
1	1618	3.0	6.57	1,084	31.5	3,12		·	
l	70 10	3.0	<i>y.</i> 31	1,000		31.0			
J					 			, ,	
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j					 				
		+							,
	<u> </u>	+							·
		 							
		-		····					·
				_			XX - X-101		
	Sample Identification:	HER-	MW15-	-1105		GRO	UNDWATE	R SAMPLE CONTA	AINERS
}						Date	Time	Sample Container	Preservative
	Weather Conditions D	uring Sampling:	754	- clear s	Eiles	11/2/05	1618	3-40 mL VOA	HU
		·····	• 01	.1		' '		1-1LAG	
	Comments:	Somy	De estate	rvescent	G.				
		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		11		ļ			
	Sample Technician:	J.M	Date:	uhlar					
	Desirpto 1 continuent.		<i>Daw.</i> _	11/3/02	•				_
		Notes:							
		ft-btoc = feet b	elow top of	f casing.					
		gal = gallons.							
		mS/cm = milli	Siemens pe	r centimeter.					
		°C = degrees C	_						
		NTU = Nephel	ometric Tu	rbidity Units.					
		mg/L = milligra		ar.					
		mV = millivolt	S.						

Groundwater Sample

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Environmental Engineers and Scientists

Collection Log

			Con	echon	Log			
ect Name:		F	Hercules		Boring ID:		MN4	
et Number:	*******	ELP2	5080-CC-MS	, ,	Site Location:		Hattiesburg, Miss	issippi
	. 1 /			1/				
Start Date: Sample Technician:	11/3/0		Finish Date:	11/3/0	<u>s</u>		h-to-Water (DTW) N	
Purge/Sample Method	. '	Peris	od Head		 	Date	Time	DTW (ft-btoc)
Well Diameter (d):	··	reris	Z"	~P		11/3/65	(2022	12.67
Total Depth (TD [ft-b	toc]):		19.00			11 121 05	0932	13.67
Approximate Depth o	f Water Column	(h)					0-730	1910:
(h= TD - DTW [ft-bto								
Calculated Well Volu	, ,							
(V = vol in gal; d = woods)	ell diam. in ft):			×	<u>.</u> _			
			WELL DEVEL	OPMENT/PUR	GING DATA			
	Cumulative		Specific		7.71	Dissolved	Oxidation/Reduction	
Date/Time	Volume (gal)	pН	Conductivity	Temperature (°C)	Turbidity (NTU)	Oxygen	Potential	Comments
			(mS/cm)			(mg/l)	(mV)	
0926	, D	6.16	0.386	20.3	10.4	ž.		
0130	0.25	6.36	0.377	30.5	2.51			
0934	0,50	6.28	0.367	30.0	1.78			
0939	0.75	6.26	0,359	20.6	1,14		<u> </u>	
6943	0.00		0.358	20.6	1.15	<u> </u>		
0947	1.3<	6.35	0.358	30.6	1.10			
					2	1		
	<u> </u>							
	ļ					 		
	 						27	
	100	444104				<u>-</u>		
Sample Identification:	HER-	110004	-1105				R SAMPLE CONTA	
Weather Conditions D	uring Sampling		of clear	Skies	Date	Time	Sample Container	Preservative
			<u>war</u>	28162	11./3/05	0947	3-40 mL VOA 1-1LAG	HU
Comments:							1- ICKE	
	1)(1		1.1					
Sample Technician:		Date: _	11/3/02				18	
	Natur		,					
	Notes: ft-btoc = feet be	elow top of	f casing					
	gal = gallons.	olow top of	casing.		<u> </u>			
	mS/cm = milliS	Siemens per	r centimeter.					
	°C = degrees C	_						
	NTU = Nephel							
	mg/L = milligra	ms per lite	r.					

mV = millivolts.

Environmental Engineers and Scientists

mV = millivolts.

	1	Conection Log										
	Project Name:		= F	Hercules			Boring ID:	MW-11				
	ct Number:			5080-CC-MS			Site Location:		Hattiesburg, Miss	issinni		
1					-							
	Start Date:	11-03-2	<i>0</i> 05	Finish Date	: 11-03	2005	_	Dept	h-to-Water (DTW) l	Measurements		
	Sample Technician:		mis	Trevell Prump /			_	Date	Time	DTW (ft-btoc)		
1	Purge/Sample Method	1: <u>Per</u>	ristalfiz	· Prup /	Low Flor	V	-		i i			
J	Well Diameter (d):		1 21 21 100				_	11-03-200		B+88		
	Total Depth (TD [ft-b								0946	පී .පට		
	Approximate Depth of		ı (h)						0952	8.88		
	(h= TD - DTW [ft-btc Calculated Well Volume											
	($V = vol in gal; d = words)$					٦.						
1	(Vorm gar, u – w	ch diam. m 1t).				-	•	<u></u>	Tie .			
J				WELL DEVEL	OPMENT/PU	RGING I	DATA					
		Cumulative		Specific	Temperature	т	urbidity	Dissolved	Oxidation/Reduction			
1	Date/Time	Volume (gal)	pН	Conductivity	(°C)		(NTU)	Oxygen	Potential	Comments		
5	2 2 2 6 7		-	(mS/cm)	100			(mg/l)	(mV)			
	11-03-2005 1930		6.47	207	18.8		7.4					
P	10930	0,25	6.46	183.1	20.4		2.8					
J	0941	0.50	6.29	177,6	20.9		3,2					
	0946	0.75	6.26	174,7	20.9		1.10					
	0950		10.24	181,0	21.0	٤	3.64					
J	6955	1.25	4,21	179.9	21,1	ź	3.34					
1												
j												
1							=			74		
						-						
l		22		-2								
			<u>-</u>	Ø.	L	_	17	·		<u> </u>		
1	Sample Identification:	HER	-MW11-	1105		- 1	GRO	INDWATE	R SAMPLE CONTA	A TATED C		
	•		1,11001		····	- 1	Date	Time	Sample Container	Preservative		
	Weather Conditions D	uring Sampling:	Sur	n : Aponos	40°7	- 1	(1-03,2055	10:00	1-1661			
				0 , 1,		ļ	11-03-2005	10:00	3-40m1 val	401		
Comments:												
					ļ.							
	Sample Technician:	CT	Date: _	11-03-200	ļ							
		3				ļ.				- · · · · · · · · · · · · · · · · · · ·		
		Notes:	1 4 4	r :_	ŀ				···			
		ft-btoc = feet b	elow top of	casing.		L						
		gal = gallons. mS/cm = millis	Siemens *~	r centimeter								
		°C = degrees C	_	Calumeter.								
		NTU = Nephel		rbidity Units								
(mg/L = milligr										

Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

				Con	ICCHOIL	Lug			
	Project Name:		F	Hercules		Boring ID:		MALIO	
	ct Number:		ELP2	5080-CC-MS		Site Location:		Hattiesburg, Miss	issippi
	6	5 1. /			1 /				
}	Start Date: Sample Technician:	<u>ه/د/ ۱۱ _</u>	b	Finish Date	5—11/3/4	<u> 15 </u>		h-to-Water (DTW)	
	Purge/Sample Method	·	No.	rid Head	Pions		Date	Time	DTW (ft-btoc)
ı	Well Diameter (d):		2	11STALLATIC	T USWES		11/3/05	1010	12-14-014
	Total Depth (TD [ft-b	toc]):		17.17).		11/2/05	1010	12.14
7	Approximate Depth of		(h)					1034	12.25
1	(h= TD - DTW [ft-btd	oc]):							
_	Calculated Well Volu					•			
	(V = vol in gal; d = woods d = woo	ell diam. in ft):							
			:	WELL DEVEL	OPMENT/PUF	RGING DATA			
		Cumulative		Specific			Dissolved	Oxidation/Reduction	
3	Date/Time	Volume (gal)	pН	Conductivity	Temperature (°C)	Turbidity (NTU)	Oxygen	Potential	Comments
3	11/3/15	· oranie (gar)		(mS/cm)		(1410)	(mg/l)	(mV)	
	1006	0	5,71	0.036	30.5	49.3			
	1013	0.5	5.61	0.032	21.3	90.4			
	1023	1.0	5,49	6.031	21.7	77.1			
	1027	1.25	5.59	0.033	21.6	67.3		~~	
1	1031	1.50	5.63	0.033	21.7	40.6	===		···-
}	1034	1,75	5.61	0.031	21.7	49.4			-
	1041	2.00	5.61	0 .032	21.0	49.7	14.		·.
1				<u> </u>		- 111	17		
						2			
	T.				 				<u></u>
1									
					 				
					 				
1		 							
		-							
ì	G1. 11 46 4	.1.0							
}	Sample Identification:	HEK	- MW	10-1105				R SAMPLE CONTA	
	Weather Conditions D	uzina Camplina	106	F clear s	. 7	Date	Time	Sample Container	Preservative
1	Weather Continuous D	mmg sampimg <u>:</u>	60-1	clear 9	KILB	11/3/05	1041	3-40 L VOA	HCL
	Comments:							1-1LA6	· -
		ΛH		1 :					
	Sample Technician:	UA	Date:	11/3/05					
	-			1-1-					
i i		Notes:							
		ft-btoc = feet b	elow top of	casing.					-
		gal = gallons.							×
		mS/cm = milliS	Siemens per	centimeter.					
		°C = degrees C							
0. i		NTU = Nephel							
(mg/L = milligra	ıms per lite	τ.					

Groundwater Sample

Environmental Engineers and Scientists

mV = millivolts.

				COL	CCHOIL	Lug		ii ii		
ال	ect Name:		1	Hercules		Boring ID:	MW-02			
_(ct Number:		ELP2	5080-CC-MS		Site Location:		Hattiesburg, Miss	issippi	
		0	- /		·-·					
J	Start Date:	11-03.		Finish Date	11-03	2005	Dept	h-to-Water (DTW) N	Measurements	
	Sample Technician:		Chris	Terren	Low Flow		Date	Time	DTW (ft-btoc)	
	Purge/Sample Method	l: <u>Yer</u>	Staltic	Pump/	on Flow		11-02-5002			
3	Well Diameter (d):	2	•				11-03-2005	 	8.26	
	Total Depth (TD [ft-b		4.				ļ	1048	8.26	
	Approximate Depth of (h= TD - DTW [ft-bto		(n)					ļ	<u></u>	
J	Calculated Well Volum						-			
	(V = vol in gal; d = we	, ,								
	, , , , , , , , , , , , , , , , , , , ,						<u> </u>	<u> </u>		
j			,		OPMENT/PU	RGING DATA				
В	Date/Time	Cumulative		Specific	Temperature	Turbidity	Dissolved	Oxidation/Reduction	_	
	Date/Time	Volume (gal)	pH	Conductivity (mS/em)	(°C)	(NTU)	Oxygen	Potential (mV)	Comments	
5	11 62 205 2002	7. 5	f di		*26.46		(mg/l)	(m v)		
	1035	0.0	6.46	172.4	21.4	<u>534</u>				
ı	1040	0,25	6.52	143.2	21.7	37.9				
J		0.50	6.32	124.8	21.7	21.2		<u> </u>		
	1045	0.75	6.11	114.1	21.9	25.8				
	1049	1.00	6.00	105.5	22.2	23.3				
)	1054	1.25	5.92	103,3	22.2	15.7				
	1059	450	5,86	104.3	22.3	10.06				
Ŀ	1104	1.75	5.83	104.7	4.97					
J			:							
l		<u> </u>		ā						
1	21					z "				
						· · · · · · · · · · · · · · · · · · ·				
)										
,				_	<u>'</u> '.					
	Sample Identification:	HER	-MW02	2-1105		GRO	UNDWATE	R SAMPLE CONTA	AINERS	
J						Date		Sample Container	Preservative	
	Weather Conditions Dr	uring Sampling	Su	my - Ap	Prote 70°5	11-03-2005	1108	1-161		
	90:) / '		11-03-2005	1108	3-40ml VOA	HCI	
}	Comments:									
1						- 14				
		r 		. 5 . 5						
}	Sample Technician:	<u> </u>	Date:	11-03-2005	•					
ı		Mater								
		Notes: ft-btoc = feet b	elow top o	<u> </u>						
		gal = gallons.	erow mb o	ı casıng.			1			
		mS/cm = millis	Siemens ne	r centimeter						
		°C = degrees C	-	a committee.						
		NTU = Nephel		rbidity Units.						
(mg/L = milligr		•						

☞ Groundwater Sample

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Environmental Engineers and Scientists

Project Name:			lercules 080-CC-MS		-	Boring ID: Site Location:		MW3 Hattiesburg, Miss	issippi
	. 1. 1			11					
Start Date:	<u>n/3/1</u>		Finish Date:	n/3/8	<u> </u>			n-to-Water (DTW)	
Sample Technician:			wid Head	<u> </u>		-	Date	Time	DTW (ft-btoc)
Purge/Sample Method	d:	Per		mp		-	11/2/15	0959	9.04
Well Diameter (d):			21			_	11/3/05	1007	60,04 9.33
Total Depth (TD [ft-b			18.75	<u> </u>		_	-	1/160	9.34
Approximate Depth o		(h)	A 7	1				1119	9,34
(h= TD - DTW [ft-btd			9.7	<u>/</u>		_			
Calculated Well Volu (V = vol in gal; d = w	• •		1.7						
(v – voi in gai, u – w	CH GIAM. III II).		•			-			
	-1		WELL DEVEL	OPMENT/P	URGING I	DATA	T		
Date/Time	Cumulative		Specific	Temperature	l 1	Turbidity	Dissolved	Oxidation/Reduction	0
8 8 1 1	Volume (gal)	pН	Conductivity (mS/cm)	(°C)		(NTU)	Oxygen (mg/l)	Potential (mV)	Comments
11/3/05		- 1				:	(mg/l)	(+)	
1100	0	5.10	0.071	22.4		37.3	ļ		140
1100	0,5	5.08	0.074	23.0	9	.12			
1/1/	8,35	5.07	0.073	22.2	6	3.89			
1115	0.75	5.08	0.075	22.4		6.93			
1/19	1.00	K108	0.075	22.4		3.25	8		
		<u> </u>	0.013	92.4					
							 		· · · · · · · · · · · · · · · · · · ·
							<u> </u>		
						<u>.</u>			
							 	· ·	
X	 						<u> </u>		
	+			<u></u>					
L	.ll			<u> </u>		·	ł		
Sample Identification:	HER- M	WO'S-	1100 HER	- RS2-11	'חכ	GRO	DUNDWATE	R SAMPLE CONT	AINERS
•			, , , , ,			Date	Time	Sample Container	Preservative
Weather Conditions D	Ouring Sampling:	70	F clea	clines	MWS	11/3/05	1119	3-40 mL VOA	HC
						127=		1-1-A6	
Comments:	·				R57	11/3/05	1115	3-40 ml VOA	HCL
					, , , , , , , , , , , , , , , , , , ,	11.727.83	1113	1-1LA6	-
	ΛM		1,		•	ű.		1-10	
Sample Technician:	$-\mathcal{N}\mathcal{M}$	Date:	11/3/05						
			7- 1						
	Notes:								
	ft-btoc = feet b	elow top of	f casing.						
	gal = gallons.								
	mS/cm = millis	-	r centimeter.						
	°C = degrees C	elsius.							
	NTU = Nephel	ometric Tu	rbidity Units.						
	mg/L = milligra		T .						
	mV = millivolt	s.							

Groundwater Sample

Environmental Engineers and Scientists

mV = millivolts.

ı						8			
J	Project Name:	-	H	Iercules		Boring ID:	M1	4-05	
(ct Number:		ELP2	5080-CC-MS		Site Location:		Hattiesburg, Missi	ssippi
1									
	Start Date:	11-03-20	™	Finish Date:	11-03-	2005	Depti	h-to-Water (DTW) N	leasurements
	Sample Technician:	March	Toon	-11			Date	Time	DTW (ft-btoc)
3	Purge/Sample Method	: Peris	teller 1	Rungo / Long	Flori		11-02-2007		
ļ	Well Diameter (d):	2	1.		=		11-03-2005		10.89
	Total Depth (TD [ft-b	toc]):						/135	11.14
	Approximate Depth of		(h)					F140	11.20
	(h= TD - DTW [ft-bto		` '					1150	11.14
J	Calculated Well Volu								
-	(V = vol in gal; d = weather								
Ì									
J				WELL DEVEL	OPMENT/PUR	RGING DATA			
1	Date/Time	Cumulative Volume (gal)	pН	Specific Conductivity (m8/cm) کما	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
)	11-03-2005/1128	0.0	6.20	818	24.8	28. D	(==0 =)		
		0.25	6.34	145	24.0	8.53	28		
ľ	1133								
3	1138	0.50	6.36	721	23.9	7.50	<u> </u>		72
	1143	0.75	6.29	710	23.7	5.25			61
	1149	1.00	6.29	698	23,9	4,32			
Š	1154	1,25	6,27	694	23.8	4.60			
1						•			
						i (-	
1									
١									
		+			-				
1		 							
ı		-		······································					
,		1							
ĺ	Sample Identification:	1/2	ER-MW	05-1105		GRO	UNDWATE	R SAMPLE CONTA	LINERS
J						Date	Time	Sample Container	Preservative
	Weather Conditions D	uring Sampling	Sm	Approx	75°F	11-03-2005	1200	1-16	
				9 , ,,		11-63-2065	1200	3-40-1 VOA	HCI
J	Comments:								
		_						10,	
J	Sample Technician:	_U	Date:	11-03-2065				Ťe	

		Notes:						7	
		ft-btoc = feet t	below top o	f casing.					
		gal = gallons.							स्री हि
		mS/cm = milli	_	er centimeter.					
		°C = degrees (
		NTU = Nephe		=					
- (mg/L = millign	rams per lit	er.					

Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

	Project Name:	***	H	ercules		Boring ID:		MW14	
	ct Number:		ELP25	080-CC-MS		Site Location:		Hattiesburg, Miss	
Ì	3	1							
	Start Date:		Savid	Finish Date	:_11/2/05	,	Dept	h-to-Water (DTW)	Measurements
	Sample Technician:		Savid	Hend			Date	Time	DTW (ft-btoc)
	Purge/Sample Metho	d:	<u>Per</u>	rstallic	gump		11/2/25	1334	17,03
	Well Diameter (d):		<u> 2"</u>		· · ·		11/3/05	1300	18.12
	Total Depth (TD [ft-l			23.20	<u> </u>			1210	18.13
1	Approximate Depth of		(h)						
1	(h= TD - DTW [ft-bt				<u></u>				
_	Calculated Well Volu								
B	(V = vol in gal; d = w	vell diam. in ft):							
			- 10	WELL DEVEL	OPMENT/PUR	CDIC DATA			
		-	Т	***	OPMENT/PUR	JING DATA		· · · · · · · · · · · · · · · · · · ·	
	Date/Time	Cumulative Volume (gal)	pН	Specific Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
	1152	0	6.56	0.877	24.3	7.77			
1	1159	0.5	6.62	0.801	23,0	12.4			
1	1204	0.75	6.57	0.894	32.6	10.7		4/	
,	1209	1.00	6.55	0.896	33.6	7.58			
1	1314	1.25	6,53	0.895		7,53			
ĺ	1914	1314 1.35 6.55 0.895 23.5							
J		+			ļ				
							·		
l									
1									
				10					
									·····
		90	·		 				
	Commis Identification.	JED	.44						
	Sample Identification:	HEK	- /VW	4 - 1105				R SAMPLE CONTA	
	Weather Conditions D	reina Camplina	7 2 0 0			Date	Time	Sample Container	Preservative
	W Caulci Conditions D	տուն թատիսոց:	75°F	mostly Su	nry	11/3/05	1214	3-40ml VOA	420
	Comments:	200		A. A.	L .			1-1LAL	· · · · · · · · · · · · · · · · · · ·
	Comments.	>cm	spe e	yer rescu	<u> </u>				
		1\1	1	1 1					
	Sample Technician:	11/4	Date:	1./2/0-					
	Sample Technician.		Date: _	11/3/05					
		Notes:							
		ft-btoc = feet be	elow top of	casina					
		gal = gallons.	riow mb or	casing.					
		mS/cm = milliS	liamana n	continuet					
		°C = degrees C	_	cenumeter.					
		NTU = Nephel		hiditu I Inita					
1		mg/L = milligra							
1		m&r - milligis	mis her rife						

Groundwater Sample

Environmental Engineers and Scientists

mV = millivolts.

ì				COL		LUG			
	Project Name:	_	F	Hercules		Boring ID:		MN-12	
	ct Number:		ELP2	5080-CC-MS		Site Location:		Hattiesburg, Miss	sissippi
		·	-					W)	
	Start Date:	11-03-	2005	Finish Date	: 11-03-	Zars	Dept	h-to-Water (DTW)	Measurements
	Sample Technician:		Chri	s Terrell			Date	Time	DTW (ft-btoc)
}	Purge/Sample Method	: Peris	beltie P	my / lo	m Flow		11-02-2005		· ` `
J	Well Diameter (d):	2	٠ <u>.</u>				11-03-2005	1219	10,52
	Total Depth (TD [ft-b							1223	10.87
1	Approximate Depth of	f Water Column	n (h)					1229	10.87
İ	(h= TD - DTW [ft-bto	c]):							
_	Calculated Well Volument								
n	(V = vol in gal; d = wo	ell diam. in ft):							
l				WELL DEVEL	ODI CENTRALE	D CD LC D L D L			
9		т		WELL DEVEL	COPMENT/PU.	RGING DATA			r
1	Date/Time	Cumulative	pH	Specific Conductivity	Temperature	Turbidity	Dissolved	Oxidation/Reduction	
ı	Date 1 mic	Volume (gal)	l pri	(mS/cm)	(°C)	(NTU)	Oxygen (mg/l)	Potential (mV)	Comments
J	11 -2-2-6/1212	0.0	1. 10		2/ 2		(IIIg/1)	(+)	
	11-03-250 1213	-	6.59	.195.7	25.3	20.3			
l	1217	0.25	6.36	180.6	24.7	13.1			
J	1222	0.50	6.22	160.6	24.5	9.76			
	1227	0.75	6.14	129.8	24.7	9,59			
1	1233	j.00	6,15	1726	24.5	52.3			
	Ca)2381242	1.25	6.11	142.4	24.5	35.1			
	1244	1.50	6.01	138,1	24.4	22.8			
)	1250	1.75	9.01	7 - 0 1				Well Dry	
		, , ,	 					New bry	
•		†							
		 							
									-
	Sample Identification:	Har-	MHIZ-	1105		GRO	UNDWATE	R SAMPLE CONT.	AINERS
						Date		Sample Container	Preservative
	Weather Conditions Du	ring Sampling:	Shu	m Appr	x 80°F	11-03-2005	1305	1-14 61	
				') '\		11-03-2005	1305	3-40-1 VOA	401
	Comments:			***************************************				J possibly:	101
	Sample Technician:	<u> </u>	Date:	11-03-2005	5				
			_						
		Notes:							<u></u>
		ft-btoc = feet b	elow top of	f casing.					
		gal = gallons.							
		mS/cm = milli	Siemens per	r centimeter.					
		°C = degrees C	elsius.						
		NTU = Nephel	lometric Tu	rbidity Units.					
1		mg/L = milligrange	ams per lite	er.					

☞ Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

	Diect Name:			lercules 6080-CC-MS		Boring ID: Site Location:	Ma) L Hattiesburg, Mississippi			
						Ditte Document.		Tratticsburg, Miss	eissippi	
	Start Date:	n/3/0	se-	Finish Date:	11/3/20		Dent	h-to-Water (DTW)	Measurements	
	Sample Technician:		David	Head	1		Date	Time	DTW (ft-btoc)	
	Purge/Sample Method	d:	Per	istaltic	pump		1 /1/05			
	Well Diameter (d):			2"		(4)	11/3/05	1252	10,81	
	Total Depth (TD [ft-b	otoc]):		23, 18	250		11/2/03	1300	10.23	
	Approximate Depth o	f Water Column	(h)		<u> </u>				70.02	
ļ	(h= TD - DTW [ft-btd	oc]):					11		<u> </u>	
	Calculated Well Volu									
7	(V = vol in gal; d = w	ell diam. in ft):								
			-	WELL DEVEL	OPMENT/PUR	GING DATA				
		Cumulative		Specific	Temperature	Turbidity	Dissolved	Oxidation/Reduction		
	Date/Time	Volume (gal)	pН	Conductivity	(°C)	(NTU)	Oxygen	Potential	Comments	
ك	11/3/05			(mS/cm)		((mg/l)	(mV)		
	1245	0	6.29	6.234	35.0	4.15		4	-	
	1253	0.5	5.95	0.190	24.7	2.18				
	1728	0.75	5.83	0.195	24.5	1.48				
	1303	1.00	5.81	0.195	24.5	1.16		•		
	1308	1.35	5.81	0.195	24.5	1,13			-	
		85.		0.112		11.12				
		 								
7		 		·						
		+	-							
									- .	
1		+					-			
İ		 								
		<u> </u>								
1										
n										
	Sample Identification:	MER-	- MWOC	,- 1105		GRO	UNDWATE	R SAMPLE CONTA	AINERS	
J						Date	Time	Sample Container	Preservative	
1	Weather Conditions D	uring Sampling:	75°F	mostly si	may	11/3/05	1308	3-40nL VOA	HU	
					<u> </u>			1-1LA6		
J	Comments:									
1										
		77/7		1 /						
J	Sample Technician:		Date: _	11/3/05						
1		.		•						
		Notes:	-1 4 · C	·						
ļ		ft-btoc = feet be	now top of	casing.						
ii.		gal = gallons.								
		mS/cm = milliS		centimeter.						
		°C = degrees Co		didin.TT=i+-						
1		NTU = Nephelo mg/L = milligra								
- 1		m&r – mmilikis	mis het iitei	١.						

Groundwater Sample

Environmental Engineers and Scientists

	Project Name:			Hercules 5080-CC-MS	***	-	Boring ID:	MWUN				
١,	CI Numbu.		LLFZ	5080-CC-MS			Site Location:	Hattiesburg, Mississippi				
	Start Date:	12-03-7	005	Finish Date:	11.07-2	- TE		Down	h to Water (DTW)	V		
	Sample Technician:	11-07 6	11 -53	Temple.	11,00-2	<u> </u>	_	Date	h-to-Water (DTW) I	DTW (ft-btoc)		
	Purge/Sample Method	· Per	rshilts	Phas			_	11-02-2005		DIW (II-bloc)		
	Well Diameter (d):		24	1 1 20	W 7 IGD		_	11-03-2005		1071		
	Total Depth (TD [ft-b		-				_	11-63-2005		18,31 (8,3)		
1	Approximate Depth of		(h)				_	11.03 200	1537	10.37		
	(h= TD - DTW [ft-bto		()							=		
}	Calculated Well Volum				····		_					
	(V = vol in gal; d = weather the volume of									· · · · · ·		
]	(· · · · · · · · · · · · · · · · · · ·							<u> </u>				
J				WELL DEVEL	OPMENT/PU	JRGING	DATA					
		Cumulative	1	Specific	Temperature	,	Furbidity	Dissolved	Oxidation/Reduction			
1	Date/Time	Volume (gal)	pН	Conductivity	(°C)	· ·	(NTU)	Oxygen	Potential	Comments		
)				-(mS/cm)us				(mg/l)	(mV)	N		
	11-03-205/ 1329	0.0	6.05	579	26,0	>	•			oder .		
ì.	1334	0.25	6,04	563	25.1		219					
	1339	0,50	6,24	514	25,1	_	14.3			 		
,	1345	0.75	6,23	489	24.9		9,42		<u>.</u>	-		
1	1351	1.00	6.21	472	24.9		7,95			4.		
	1356		6.19	468			11 90					
J	1756	1,25	Ψ.17	766	24,9		4.98	 		 		
		ļ										
Ì	<i>0</i>								34			
1												
							<u> </u>			15		
							Vi .					
	2				".							
	**											
	· · · · · · · · · · · · · · · · · · ·	 						 				
		ll						L				
						•						
	Sample Identification:	HEK.1	14 M - 1	105; HER-	FDS -1103				R SAMPLE CONTA			
	TI 1 C 111 5				4.4		Date	Time	Sample Container	Preservative		
	Weather Conditions Di	uring Sampling:	Sun	- Approx	80°F	M417		1400	1-14 61			
				,		14417	11-03-2005	1400	3-4cml vod	401		
	Comments:			<u>.</u> .		F0.3	11-03-2005	1450	1-11-61			
-						F03	11-03-2015	1400	3-40m) VOA	Hel		
	O1- W1 - 1 - 1	ant		33.20.								
	Sample Technician:		Date:	11-03-200	')							
		NT.4			.2		<u></u>					
		Notes:	بسمام	£i								
		ft-btoc = feet b	elow top o	r casing.								
	\$75	gal = gallons.	·									
		mS/cm = millis		r centimeter.								
		°C = degrees C		1114 77 1								
1		NTU = Nephel										
1		mg/L = milligram V = millivolt	-	ज.								

Groundwater Sample

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Environmental Engineers and Scientists

Project Name:	Hercules ELP25080-CC-MS					Boring ID: Site Location:	Mug Hattiesburg, Mississippi			
Start Date:	11 /3	1	Finish Date:	11/3/				1 . W. Comin		
Sample Technician:	11/5/		1 ./ 1	11/3/6	25	-		th-to-Water (DTW) N		
_		Da	1 / 1	<u></u>		_	Date	Time	DTW (ft-bto	
Purge/Sample Method:		<u>re</u>	ristaltic p	man b		-	n/2/05	1306	13.08	
Well Diameter (d):	3	<u> </u>				_	1/3/05	1342	13.15	
Total Depth (TD [ft-btoc		d >	20.2	<u> </u>		-	<u> </u>	/349	13.15	
Approximate Depth of W		(h)	7.14	1						
h= TD - DTW [ft-btoc])		- 57=9 -	1) 12	+		-				
Calculated Well Volume										
V = vol in gal; d = well d	diam. in ft):		1.2			_				
			WELL DEVEL	OPMENT/PI	JRGING I	DATA				
	Cumulative		Specific	_	Ι,	D. 1.11	Dissolved	Oxidation/Reduction		
Date/Time	/olume (gal)	pН	Conductivity	Temperature (°C)		Curbidity	Oxygen	Potential	Comments	
	rotunie (gai)		(mS/cm)	()		(NTU)	(mg/l)	(mV)		
1330	D	6.10	0.694	25,3	- 6	1.97				
1340	0.5	6.14	0.766	25.0	17	1.29				
1346	0.75	6.07	0.709	24.8		1.50		91:		
1352	1.0a	6,08	0.672	24.8		1.33		,		
1357	1.35	6,05	0.667	34.9		1.30		 		
	1.50		K 15				ļ	 		
1403	1,30	6.05	0.665	24.8		1.23		ļ		
									· · · · · · · · · · · · · · · · · · ·	
					•					
						··				
···							<u> </u>			
ample Identification:	HER.	Muna -	1105; HER	-EN1-	1105	GRO	TINDWATE	R SAMPLE CONTA	INTEDC	
· –		9	1302 / 1101			Date	Time	Sample Container	Preservative	
Veather Conditions Durin	ng Sampling:	75°F	mostly so	M 4.1	mos	11/3/05	1403	3-40 ml VOA	ALC	
	·	101	30			11/3/03	ح ل ۱۹	1-1LA6	ACE BH	
Comments:					FA 2	11/3/05		3-40~L VOA	HUL	
a	•	·			FAD	11/5/05		1-1-AG	IT LE	
	ΛM	·	. 1					1-10110		
ample Technician:	NA	Date:	11/3/05			9H:				
- · <u>-</u>	V									
Ne	otes:					-				
	btoc = feet be	elow top of	casing.							
	d = gallons.		5							
-	S/cm = milliS	iemens per	centimeter.							
	C = degrees Co	_								
	TU = Nephelo		rbidity Units							
	g/L = milligra		-							
	V = millivolts		••							

Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

				Con	ection 1	Tog				
	Project Name:		I	Hercules		Boring ID:	mw7			
	ct Number:			5080-CC-MS		Site Location:	Hattiesburg, Mississippi			
			1		1 2			8,		
	Start Date:		05	Finish Date	11/3/05		Dept	h-to-Water (DTW)	Measurements	
	Sample Technician:	77	Dans	Head			Date	Time	DTW (ft-btoc)	
	Purge/Sample Method	·	Acrisy	altre Pun	P	v	ublas	1303	14.77	
	Well Diameter (d):			3"			11/3/05	1454	14.85	
	Total Depth (TD [ft-bt			22.53	<u>, </u>			1501	14.85	
	Approximate Depth of		(h)					1505	14.84	
	(h= TD - DTW [ft-bto			8.19	<u>} </u>					
	Calculated Well Volum			1 1						
	(V = vol in gal; d = we	ali diam. in ft):		1,4	<u> </u>			l		
J				WELL DEVEL	OPMENT/PURC	GING DATA				
		Cumulative		Specific		Toukidie.	Dissolved	Oxidation/Reduction		
	Date/Time	Volume (gal)	pН	Conductivity	Temperature (°C)	Turbidity (NTU)	Oxygen	Potential	Comments	
	11/3/05	- (5-5)		(mS/cm)		(1(10)	(mg/l)	(mV)		
	1443	0	5.56	0,157	22.3	6.15		.8	28	
7	1450	0,5	4.97	0.099	25.4	3.06				
	1455	0,75	4.81	0.089	25,3	J.50		1	F1	
	1500	1.00	4.81	0.091	25.1	3.16		4		
	1505	1,35	4.81	0.030	25.1	2.89				
				-					 -	
7	·					60		-		
1		II.								
					- 4		-			
1										
			i							
1	n. d. vi ve v	140	4							
	Sample Identification:	HEK-	MUUD	7-1105				R SAMPLE CONTA		
	Weather Conditions Du	ring Compling:	75	or 1/		Date	Time	Sample Container	Preservative	
1	Weamer Conditions Du	ring sambinig:	/3	°F mostly	sunny_	11/3/05	1505	3-40 ml var	HU	
	Comments:	<u>-</u>	-	 				1-1LA6		
										
1				11						
	Sample Technician:	WW	Date:	11/3/05				-		
	•		_							
Ď		Notes:								
		ft-btoc = feet be	elow top of	casing.						
		gal = gallons.					·· <u>·</u>	 		
		mS/cm = milliS		centimeter.						
		°C = degrees Co								
,		NTU = Nephelo		-						
(.)	mg/L = milligra	ms per lite	r.						

☞ Groundwater Sample

Environmental Engineers and Scientists

Project Name:		H	Iercules		I	Boring ID:	MM-18			
ct Number:		ELP25	5080-CC-MS	781	5	Site Location:	Hattiesburg, Mississippi			
Start Date:	11-63-20	os	Finish Date:	11-03-20	265		Denth	-to-Water (DTW) N	Aggregate	
Sample Technician:	(1-03	hris Te	well	1(-0)			Date	Time	DTW (ft-btoc)	
Purge/Sample Method:	Pari	sholto D	mp/Lov	Elm			11-02-2005		2711 (20000)_	
Well Diameter (d):	7"	biorrict	mg / 124	T 102			11-03-2005	14:42	7.36	
Total Depth (TD [ft-bt							11-03-205	14:58	7.39	
Approximate Depth of		(h)		*				17.00	7 *** - 1	
(h=TD - DTW [ft-btoo		(II)								
Calculated Well Volum		-								
V = vol in gal; d = we	•									
(voi in gai, d we	ii diain. iii itj.									
)	T	,	WELL DEVEL	OPMENT/PU	RGING DA	ATA	T	· · · · · · · · · · · · · · · · · · ·	······	
	Cumulative		Specific	Temperature	Tu	rbidity	Dissolved	Oxidation/Reduction	G	
Date/Time	Volume (gal)	pН	Conductivity	l ren l		NTU)	Oxygen	Potential (mV)	Comments	
1/4		4 4	(mS/om) NS				(mg/l)	()		
11-03-2005 /14:40	0.0	6.14	620	26.8		<u>،5</u>				
14145	0.25	636	<i>48</i> 5	25,9	9,0	<u>3 </u>				
14:49	0.50	6.34	665	24.3	7.9	74				
14754		6.37	644	26.2	5,	90				
14:59	1.00	6.38	645	25.9	4.9					
		0,50	<i>v</i> (3			, ,				
							 		 	
, 						······································				
} 										
J										
						<u> </u>			 	
	L									
	l) e	. M	1 11 - 100	1.60	г	CD.		2410772007	4 D TED C	
Sample Identification:	Hat	(-)"[A]]	3-1105 (MS,	(פכואן	-		1	R SAMPLE CONT.		
West Continue D		. 2		~~~	-	Date	Time	Sample Container 3-14 G1	Preservative	
Weather Conditions D	uring Sampling	: 5m	Appro	<u>x 75°F</u>	-	11-03-2005	1505		1161	
Comments			-		\sim \sim	11-13-2005 H-03-2005		9-40-1 VOA	HU	
Comments:			<u>-</u>		CT	+-47-2005	-/>-	-		
				ś	⊢		 			
01- T1i-i	6	D-4-	11 12 705	,						
Sample Technician:		Date:	11-03-2005	•						
1	Notes				-					
	Notes:	aelow toe o	of essing			12		 		
ft-btoc = feet below top of casing.										
	gal = gallons.	Ciamana -								
	mS/cm = milli	_	a cenumeter.							
	°C = degrees (
	NTU = Nephe									
	mg/L = millign mV = millivol		C1.							

Groundwater Sample

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Environmental Engineers and Scientists

mV = millivolts.

	2			Con	CCHOH 1	Lug				
	Project Name:		I	Hercules		Boring ID:	M	MWIS		
	ct Number:		ELP2	5080-CC-MS		Site Location:	Hattiesburg, Mississippi			
		1 1		-	/ 3					
ز	Start Date:	11(3/	05	, Finish Date:	11/3/05	<u>></u>	Dept	th-to-Water (DTW) !	Measurements	
_	Sample Technician:		wid ,	Head			Date	Time	DTW (ft-btoc)	
	Purge/Sample Metho	d:	-enstal		nf		11/3/05			
J	Well Diameter (d):		<u> </u>	<i>ji</i>	<u>, </u>		11/3/05	1535	11.95	
	Total Depth (TD [ft-1			21.77				1543	11.95	
	Approximate Depth of the TD - DTW [ft-bt		(h)				<u> </u>	<u> </u>		
	Calculated Well Volu				· · · · · · · · · · · · · · · · · · ·		 	 		
	(V = vol in gal; d = w						<u> </u>			
1	, , , , , , , , , , , , , , , , , , , ,									
		<u></u>			OPMENT/PUR	GING DATA				
	Data/Times	Cumulative		Specific	Temperature	Turbidity	Dissolved	Oxidation/Reduction		
Ĭ	Date/Time	Volume (gal)	pН	Conductivity (mS/cm)	(°C)	(NTU)	Oxygen	Potential	Comments	
	7631	+	2 40		757	· · · · · · · · · · · · · · · · · · ·	(mg/l)	(mV)	· · · · · · · · · · · · · · · · · · ·	
	<u>/\$31</u>	0	6.44	0.482	25,7	4,33	22			
ı	1537	0,5	6.50	0.485	25.5	4.43				
	1542	0.75	10.48	0.487	2:26	5.33				
,	1540	1.00	6.45	0.486	25.6	3.47				
ľ	1551	1,25	6.45	0.487	35.5	2.93				
١										
n		<u> </u>								
J										
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3										
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l										
ŀ							·			
1						Ш			·	
	Sample Identification:	HER-	- MW19	-1105		GRO	UNDWATE	R SAMPLE CONTA	INERS	
•						Dațe		Sample Container	Preservative	
	Weather Conditions D	uring Sampling:	75°F	mostly	Sumu	11/3/05	1551	3-40 mL VOA	ACO	
					•	/		1-1LAL		
	Comments:									
		- NH				· · · · · · · · · · · · · · · · · · ·				
	Sample Technician:	NA	Deter	1/2/2		ļ				
	Sample Technician:		Date: _	11/5/03						
		Notes:			-			<u> </u>		
		ft-btoc = feet be	elow top of	casing.						
		gal = gallons.								
		mS/cm = milliS	iemens per	centimeter.						
		°C = degrees Co	_							
1		NTU = Nephelo		rbidity Units.						
(mg/L = milligra								