FILE COPY

Quarterly Monitoring Report

Hercules Incorporated
Hattiesburg, Mississippi

Prepared for:

Hercules Incorporated

August 2006

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

Eco-Systems, Inc.
Environmental Engineers and Scientists

Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER-25080-CC-MS
Boring ID: MW10
Site Location: Hattiesburg, MS

Start Date: 11-29-2006 Finish Date: 11-29-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow-low stress
Well Diameter (d): 2"
Total Depth (TD): 18.5
Approximate Depth of Water Column (h)
(h= TD - DTW [ft-btoc]): 18.5 - 11.45 = 7.05
Calculated Well Volume (V=6hd²)
(V = vol in gal; d = well diam. in ft): 1.15 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1208	11.45
11-29-06	0852	11.70
"	0859	11.83
"	0907	11.84
		12.2

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
11-29-2006 0850	0.0	5.41	35.4	20.9	120			
0852	0.25	5.30	34.1	21.2	95			
0855	0.50	5.30	34.7	21.2	100			
0859	0.75	5.31	34.7	21.2	95			
0902	1.00	5.30	34.6	21.2	95			
0907	1.25	5.32	34.5	21.2	95			
0911	1.50	5.30	34.5	21.2	95			
0916	1.75	5.33	35.1	21.2	95			
0922	2.25	5.29	34.9	21.4	90			Volume based
0924	2.75	5.28	35.0	21.4	90			
0927	3.25	5.29	34.9	21.4	100			
0931	4.00	5.28	35.0	21.5	100			
0935	4.75	5.28	35.3	21.5	100			
0940	5.75	5.28	34.7	21.6	95			

Sample Identification: HER-MW10-112906

Weather Conditions During Sampling: Cloudy 70°F

Comments:

Sample Technician: CT/TB Date: 11-29-2006

MW10

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-29-2006	0945	3-40mL VOA	HCl

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.

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Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER25080-CC-MS

Boring ID: MW11
Site Location: Hattiesburg, MS

Start Date: 11-29-2006 Finish Date: 11-29-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow - low stress
Well Diameter (d): 2"
Total Depth (TD): 17'
Approximate Depth of Water Column (h) (h= TD - DTW [ft-btoc]): 8.51
Calculated Well Volume ($V=6hd^2$) (V = vol in gal; d = well diam. in ft): 1.39 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
10-28-06	1230	8.49
11-29-06	1031	8.66
"	1035	8.67

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
11-29-2006 1025	0.0	5.87	221	20.9	60			
1029	0.25	5.85	217	20.7	60			
1031	0.50	5.85	212	20.7	50			
1034	0.75	5.84	215	20.5	35			
1042	1.00	5.86	215	20.5	24			
1045	1.25	5.84	213	20.4	22			
1047	1.50	5.84	213	20.7	16			
1050	1.75	5.82	215	20.7	5.1			

Sample Identification: HER-MW11-112906

Weather Conditions During Sampling: Cloudy 75°F

Comments: MW11 RSI

Sample Technician: CT/TB Date: 11-29-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-29-2006	1055	3-40mL VOA	HCl
11-29-2006	1030	3-40mL VOA	HCl

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.

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Environmental Engineers and Scientists

Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER 25080-CC-MS
Boring ID: MW 12
Site Location: Hattiesburg, MS

Start Date: 11-29-2006 Finish Date: 11-29-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / Low-flow-low stress
Well Diameter (d): 2"
Total Depth (TD): 12'
Approximate Depth of Water Column (h) (h= TD - DTW [ft-btoc]): 3.29
Calculated Well Volume (V=6hd²) (V = vol in gal; d = well diam. in ft): 0.54 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1319	8.71
11-29-06	1220	9.4
"	1230	9.79
"	1234	9.85

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
11-29-2006 1215	0.0	5.30	71.3	22.4	31			
1220	0.25	5.27	71.8	22.2	45			
1224	0.50	5.38	78.9	21.9	24			
1229	0.75	5.42	81.5	22.1	31			
1232	1.00	5.45	84.7	21.9	31			
1237	1.25	5.42	84.9	21.8	22			
1243	1.50	5.45	86.0	22.2	16			
1248	1.75	5.47	87.8	22.1	9.5			

Sample Identification: HER-MW12-112906

Weather Conditions During Sampling: Cloudy 75°F

Comments:

Sample Technician: CT/TB Date: 11-29-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-29-2006	1255	3-40mL VOA	HCl

MW12

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.

Eco-Systems, Inc. *Environmental Engineers and Scientists*

Groundwater Sample Collection Log

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

Boring ID: MW13
Site Location: Hattiesburg, MS

Start Date: 11-30-2006 Finish Date: 11-30-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow - low stress
Well Diameter (d): 2"
Total Depth (TD): 18.5'
Approximate Depth of Water Column (h) (h= TD - DTW [ft-btoc]): 8.46
Calculated Well Volume (V=6hd²) (V = vol in gal; d = well diam. in ft): 1.38 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1405	10.04
11-30-06	1116	10.22

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
11-30-2006 1110	0.0	5.43	190.2	24.7	60			
1114	0.25	5.36	193.3	24.9	7.0			
1116	0.50	5.34	193.4	24.9	6.1			
1120	0.75	5.34	194.9	24.8	5.5			
1125	1.00	5.34	194.3	24.8	5.4			

Sample Identification: HER-MW13-113006

Weather Conditions During Sampling: Cloudy 75°F

Comments:

Sample Technician: CT/TB Date: 11-30-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-30-2006	1130	3-40mL VOA	HCl

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.

Eco-Systems, Inc.
Environmental Engineers and Scientists

Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER 25080-CC-MS
Boring ID: MW14
Site Location: Hattiesburg, MS

Start Date: 11-30-2006 Finish Date: 11-30-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow-low stress
Well Diameter (d): 2"
Total Depth (TD): 24.3'
Approximate Depth of Water Column (h)
(h= TD - DTW [ft-btoc]): 24.3 - 15.29 = 9.01
Calculated Well Volume (V=6hd²)
(V = vol in gal; d = well diam. in ft): 1.47 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1417	15.29
11-30-06	1003	17.2
"	1010	17.2

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
11-30-2006 1000	0.0	6.40	678	22.9	450			
1003	0.25	6.42	668	23.0	55			
1006	0.50	6.42	668	23.0	30			
1010	0.75	6.42	664	23.1	24			
1016	1.00	6.43	663	23.0	31			
1021	1.25	6.40	657	23.2	38			
1026	1.50	6.41	655	23.2	38			
1032	1.75	6.43	652	23.2	38			
1037	2.00	6.47	649	23.3	38			
1045	3.00	6.37	648	23.2	24			Volume based
1051	4.00	6.39	645	23.1	16			
1055	4.50	6.38	644	23.1	8.8			

Sample Identification: HER-MW14-113006

Weather Conditions During Sampling: Cloudy 70°F

Comments: Effervescense observed, chemical sheen observed

Sample Technician: CT/TB Date: 11-30-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-30-2006	1100	3-40mL VOA	HCl

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.

Eco-Systems, Inc. *Environmental Engineers and Scientists*

Groundwater Sample Collection Log

(TB) Project Name: Hercules
Project Number: HER 25080-CC-MS

Boring ID: MW15
Site Location: Hattiesburg, MS

Start Date: 11-30-2006 Finish Date: 11-30-2006
Sample Technician: Chris Tetrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow - low stress
Well Diameter (d): 2"
Total Depth (TD): 26.5
Approximate Depth of Water Column (h) (h= TD - DTW [ft-btoc]): 6.02
Calculated Well Volume ($V=6hd^2$) (V = vol in gal; d = well diam. in ft): 0.98 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1414	20.48
11-30-06	0918	21.00

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
11-30-2006 0915	0.0	6.39	804	22.9	13			
0918	0.25	6.39	780	23.2	6.3			
0923	0.50	6.39	766	23.3	7.1			
0928	0.75	6.37	763	23.3	9.2			

Sample Identification: HER-MW15-113006 (MS/MSD)

Weather Conditions During Sampling: Cloudy 70°F

Comments: Effervescense observed, chemical sheen observed

Sample Technician: CT / TB Date: 11-30-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-30-2006	0935	9-40mL VOA	HCl

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.

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Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER-25080-CC-MS
Boring ID: MW16
Site Location: Hattiesburg, MS

Start Date: 11-30-2006 Finish Date: 11-30-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow - low stress
Well Diameter (d): 2"
Total Depth (TD): 28.5
Approximate Depth of Water Column (h)
(h= TD - DTW [ft-btoc]): 10.95
Calculated Well Volume (V=6hd²)
(V = vol in gal; d = well diam. in ft): 1.78

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1412	17.55
11-30-06	0824	17.61
	0832	17.61

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
11-30-2006 0820	0.0	6.28	743	22.5	32			
0824	0.25	6.31	729	22.7	11			
0827	0.50	6.28	706	22.7	9.8			
0831	0.75	6.30	694	22.7	9.1			
0835	1.00	6.29	690	22.6	9.1			

Sample Identification: HER-MW16-113006

Weather Conditions During Sampling: Cloudy 70°F

Comments: effervescense observed, chemical sheen observed

Sample Technician: CT/TB Date: 11-30-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-30-2006	0840	3-40mL VOA	HCl

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.

Eco-Systems, Inc. *Environmental Engineers and Scientists*

Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER 25080-CC-MS
Boring ID: MW17
Site Location: Hattiesburg, MS

Start Date: 11-30-2006 Finish Date: 11-30-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / Low flow - low stress
Well Diameter (d): 2"
Total Depth (TD): 22.7'
Approximate Depth of Water Column (h)
(h= TD - DTW [ft-btoc]): 4.14
Calculated Well Volume (V=6hd²)
(V = vol in gal; d = well diam. in ft): 0.67 gal

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1422	18.56
11-30-06	1240	18.63
"	1248	18.63

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
11-30-2006 1235	0.0	6.15	619	23.5	45			
1240	0.25	6.13	612	23.9	9.9			
1244	0.50	6.15	595	23.9	10			
1248	0.75	6.14	583	23.9	8.5			
1252	1.00	6.22	567	23.8	8.9			
1256	1.25	6.18	550	23.8	7.0			
1300	1.50	6.20	547	23.9	5.5			

Sample Identification: HER-MW17-113006

Weather Conditions During Sampling: Rain 70°F

Comments:

Sample Technician: CT/TB Date: 11-30-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-30-2006	1305	3-40mL VOA	HCl

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.

Eco-Systems, Inc.
Environmental Engineers and Scientists

Groundwater Sample Collection Log

Project Name: Hercules
Project Number: HER 250880 - CC - MS

Boring ID: MW18
Site Location: Hattiesburg, MS

Start Date: 11-29-2006 Finish Date: 11-29-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic pump / low flow - low stress
Well Diameter (d): 2"
Total Depth (TD):
Approximate Depth of Water Column (h)
(h= TD - DTW [ft-btoc]):
Calculated Well Volume (V=6hd²)
(V = vol in gal; d = well diam. in ft):

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1334	6.33
11-29-06	1337	6.46

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity ~~mS~~ µS (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
11-29-2006 1335	0.0	6.18	787	25.0	80			
1337	0.25	6.23	779	25.0	11			
1339	0.50	6.23	787	25.0	18			
1341	0.75	6.23	779	24.9	14			
1344	1.00	6.22	785	24.8	9.2			

Sample Identification: HER-MW18-112906

Weather Conditions During Sampling: Cloudy 75°F

Comments:

Sample Technician: CT / TB Date: 11-29-2006

GROUNDWATER SAMPLE CONTAINERS			
	Date	Time	Sample Container	Preservative
MW18	11-29-2006	1350	3-40mL VOA	HCl

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.

Eco-Systems, Inc.
Environmental Engineers and Scientists

Groundwater Sample Collection Log

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

Boring ID: MW19
Site Location: Hattiesburg, MS

Start Date: 11-29-2006 Finish Date: 11-29-2006
Sample Technician: Chris Terrell / Travis Beard
Purge/Sample Method: Peristaltic Pump / low flow - low stress
Well Diameter (d): 2"
Total Depth (TD):
Approximate Depth of Water Column (h)
(h= TD - DTW [ft-btoc]):
Calculated Well Volume (V=6hd²)
(V = vol in gal; d = well diam. in ft):

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft-btoc)
11-28-06	1340	11.42
11-29-06	1414	11.55

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
11-29-2006 1405	0.0	6.30	450	25.9	13			
1410	0.25	6.32	454	25.7	7.0			
1414	0.50	6.33	449	25.7	5.9			
1417	0.75	6.33	453	25.6	4.8			
1420	1.00	6.34	450	25.7	4.4			

Sample Identification: HER-MW19-112906

Weather Conditions During Sampling: Cloudy 75° F

Comments:

Sample Technician: CT/TB Date: 11-29-2006

GROUNDWATER SAMPLE CONTAINERS			
Date	Time	Sample Container	Preservative
11-29-2006	1425	3-40ml VOA	HCl

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.

ESI

APPENDIX B
LABORATORY ANALYTICAL RESULTS

SEVERN TRENT STL

January 25, 2007

Mr. Charles V. Coney
Senior Scientist/Operations Manager
Eco-Systems, Inc.
6360 I-55 North, Suite 330
Jackson, Ms 39232

Re: Hercules-Hattiesburg Result Discrepancy
STL Savannah

Dear Mr. Coney:

This letter provides a summary of STL Savannah's investigation in response to samples analyzed in support of the Hercules-Hattiesburg Project.

STL Savannah was contracted by Eco-Systems to perform analyses in support of their Hercules-Hattiesburg Project. Analyses requested included volatile analyses by EPA Method 8260B. The samples for the November Sampling Event arrived at the laboratory on December 1, 2006. Analysis proceeded as normal, and the laboratory results were submitted to the client. The values reported for the following samples were questioned by Eco-Systems as they were not consistent with historical values reported for this site: HER-MW03-112906, HER-MW04-112906, HER-CM04-112806, and HER-FD1-112906.

The Volatiles Department Manager verified the raw data and double-checked the calculations to rule out a calculation or transcription error. Based on the data review, no error was determined. The four samples in question were re-analyzed for confirmation of the results originally reported. The re-analysis results of these four samples did not concur with what was originally reported for these samples. Additionally, the re-analysis results were consistent with what had been historically reported for this site. Although the second analysis of the samples in question was not performed within analytical holding time, the discrepancy in results between the original and confirmation runs, coupled with the historical data, tend to indicate a laboratory error occurred during the first analysis.

This issue has been addressed with the Project Manager to ensure a thorough review of results reported versus historical values. Additionally, this issue has been discussed with the Volatiles Department Manager to reiterate the need to exercise care when loading and scheduling instruments.

If you have any questions regarding this matter or if you require further information, please feel free to contact me at (912) 354-7858 ext. 3055 or via email at ateal@stl-inc.com.

Sincerely,

Andrea Teal

Andrea Teal
Quality Assurance Manager
STL Savannah

SEVERN TRENT STL

ANALYTICAL REPORT

Job Number: 680-22380-1

Job Description: Hercules - Hattiesburg 4Q06

For:
Eco-Systems Inc
6360 I55 North
Suite 330
Jackson, MS 39211

Attention: Mr. Charles Coney

Lidya Gulizia

Lidya Gulizia
Project Manager I
lgulizia@stl-inc.com
12/15/2006

Project Manager: Lidya Gulizia

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Case Narrative for job: 680-J22380-1

Client: Hercules Inc.
Date: 12/15/2006

VM Prep Group - 5035

Volatile organic sample received with headspace

All of the sample vials for sample identification (HER-MW05-112906) have headspace in them.On sample identification (HER-MW15-113006) two of the vials have headspace in them,two of the MS vials for this identification have headspace ,and all three of the MSD vials have headspace in them.

Affected Items
680-22380

Volatile GC/MS Department

Sample surrogate recovery out of control, matrix interference is evident.

8260: Surrogate recovery for dibromofluoromethane in sample 680-22380-6 MS failed control limits high. All other calibration and QC criteria were met.

Affected Items
680-22380-A-6 MS

Batch: 680-62157
Method: 680-8260B

Volatile GC/MS Department

Sample surrogate recovery out of control, matrix interference is evident.

8260-Surrogate recovery for dibromofluoromethane fell outside control limits 75-123%. The primary analysis had the initial surrogate recovery in limits. There was insufficient volume for re-analysis. However, both sets of data concur with one another pertaining to the targets of interest.

Affected Items
680-22380-B-19

Batch: 680-62212
Method: 680-8260B

METHOD SUMMARY

Client: Eco-Systems Inc

Job Number: 680-22380-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	STL SAV	SW846 8260B	
Purge-and-Trap	STL SAV		SW846 5030B

LAB REFERENCES:

STL SAV = STL Savannah

METHOD REFERENCES:

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Eco-Systems Inc

Job Number: 680-22380-1

Method	Analyst	Analyst ID
SW846 8260B	Agresta, Maria	MA
SW846 8260B	Bearden, Robert	RB
SW846 8260B	Young, Myron	MY

SAMPLE SUMMARY

Client: Eco-Systems Inc

Job Number: 680-22380-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-22380-1	HER-CM00-112806	Water	11/28/2006 1605	12/01/2006 1144
680-22380-2	HER-CM01-112806	Water	11/28/2006 1545	12/01/2006 1144
680-22380-3	HER-CM02-112806	Water	11/28/2006 1530	12/01/2006 1144
680-22380-4	HER-CM03-112806	Water	11/28/2006 1515	12/01/2006 1144
680-22380-5	HER-CM04-112806	Water	11/28/2006 1505	12/01/2006 1144
680-22380-6	HER-CM05-112806	Water	11/28/2006 1445	12/01/2006 1144
680-22380-6MS	HER-CM05-112806	Water	11/28/2006 1445	12/01/2006 1144
680-22380-6MSD	HER-CM05-112806	Water	11/28/2006 1445	12/01/2006 1144
680-22380-7	HER-MW02-112906	Water	11/29/2006 0830	12/01/2006 1144
680-22380-7MS	HER-MW02-112906	Water	11/29/2006 0830	12/01/2006 1144
680-22380-7MSD	HER-MW02-112906	Water	11/29/2006 0830	12/01/2006 1144
680-22380-8	HER-MW03-112906	Water	11/29/2006 0750	12/01/2006 1144
680-22380-9	HER-MW04-112906	Water	11/29/2006 1015	12/01/2006 1144
680-22380-10	HER-MW05-112906	Water	11/29/2006 1200	12/01/2006 1144
680-22380-11	HER-MW06-112906	Water	11/29/2006 1315	12/01/2006 1144
680-22380-12	HER-MW07-113006	Water	11/30/2006 0800	12/01/2006 1144
680-22380-13	HER-MW08-113006	Water	11/30/2006 1420	12/01/2006 1144
680-22380-14	HER-MW09-113006	Water	11/30/2006 1215	12/01/2006 1144
680-22380-15	HER-MW10-112906	Water	11/29/2006 0945	12/01/2006 1144
680-22380-16	HER-MW11-112906	Water	11/29/2006 1055	12/01/2006 1144
680-22380-17	HER-MW12-112906	Water	11/29/2006 1255	12/01/2006 1144
680-22380-18	HER-MW13-113006	Water	11/30/2006 1130	12/01/2006 1144
680-22380-19	HER-MW14-113006	Water	11/30/2006 1100	12/01/2006 1144
680-22380-20	HER-MW15-113006	Water	11/30/2006 0935	12/01/2006 1144
680-22380-20MS	HER-MW15-113006	Water	11/30/2006 0935	12/01/2006 1144
680-22380-20MSD	HER-MW15-113006	Water	11/30/2006 0935	12/01/2006 1144
680-22380-21	HER-MW16-113006	Water	11/30/2006 0840	12/01/2006 1144
680-22380-22	HER-MW17-113006	Water	11/30/2006 1305	12/01/2006 1144
680-22380-23	HER-MW18-112906	Water	11/29/2006 1350	12/01/2006 1144
680-22380-24	HER-MW19-112906	Water	11/29/2006 1425	12/01/2006 1144
680-22380-25	HER-FD1-112906	Water	11/29/2006 0000	12/01/2006 1144
680-22380-26	HER-FD2-113006	Water	11/30/2006 0000	12/01/2006 1144
680-22380-27	HER-RS1-112806	Water	11/28/2006 1440	12/01/2006 1144
680-22380-28	HER-RS2-112906	Water	11/29/2006 1030	12/01/2006 1144
680-22380-29	HER-RS3-113006	Water	11/30/2006 1450	12/01/2006 1144
680-22380-30TB	Trip Blank	Water	11/28/2006 0000	12/01/2006 1144

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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 information

This report describes sampling activities and analytical results for the first 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 August 29, 2006, 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 recent site activities and the groundwater level could not be measured at this location. A summary of the water level measurements obtained on August 29, 2006 is included as Table 1.

Groundwater sample collection was conducted on August 29-30, 2006. 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 were shipped via overnight courier to Severn Trent Laboratories in Savannah, Georgia for VOC analysis.

2.2 Surface Water Sample Collection

On August 29, 2006, 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, three 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. 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 acetone, benzene, chlorobenzene, carbon tetrachloride, chloroform, tetrachloroethene, toluene, vinyl chloride, chloroethane, and methylene chloride at concentrations above their TRG's.

Analysis of the groundwater sample collected from monitoring well MW-09 detected benzene at a concentration greater than the TRG.

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

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

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

3.2 SURFACE WATER

VOC's were not detected in surface water samples collected from locations CM-00, CM-01, CM-02, CM-03, CM-04, and CM-05.

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 CM-02, MW-09, and MW-13. Variation in the analytical results for the duplicate samples ranged from 0% to 14% compared to the regular samples.

Analysis of the rinsate samples collected during this sampling event detected concentrations of chloroform. However, chloroform was not detected in the groundwater samples associated with the rinsed equipment except from locations where chloroform has been primarily detected in groundwater. Therefore, the chloroform detected in the rinsate samples may have been present in the deionized water used for decontamination procedures and rinsate samples.

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. 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.

TABLES

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA
August 28, 2006
Hercules, Incorporated
Hattiesburg, Mississippi

WELL NO.	TOC ELEVATION (ft.)[1]	WATER DEPTH (ft)[2]	GROUNDWATER ELEVATION (ft.)
PERMANENT MONITOR WELLS			
MW-1	174.12	NA[3]	NA
MW-2	160.07	6.93	153.14
MW-3	160.03	8.45	151.58
MW-4	159.75	11.74	148.01
MW-5	160.99	11.40	149.59
MW-6	174.05	10.40	163.65
MW-7	NA	14.65	NA
MW-8	179.99	NA	NA
MW-9	NA	13.20	NA
MW-10	159.88	11.87	148.01
MW-11	157.18	8.91	148.27
MW-12	162.17	9.43	152.74
MW-13	175.23	10.55	164.68
MW-14	169.23	15.30	153.93
MW-15	172.21	17.30	154.91
MW-16	175.62	17.38	158.24
MW-17	186.13	18.57	167.91
MW-18	165.31	6.56	158.75
MW-19	172.25	11.34	160.91
STAFF GAUGES			
SG-1	NA	NA	NA
SG-2	NA	NA	NA
SG-3	NA	NA	NA
SG-4	NA	NA	NA
PIEZOMETERS			
TP-1	172.18	NA	NA
TP-2	171.72	12.42	159.30
TP-3	169.74	10.97	158.77
TP-4	163.64	11.04	152.60
TP-5	160.54	10.48	150.06
TP-6	158.63	9.70	148.93
TP-7	167.17	9.82	157.35
TP-8	183.79	14.80	168.99
TP-9	163.44	6.78	156.66
TP-10	179.69	15.55	164.14
TP-11	162.26	12.00	150.26
TP-12	159.95	12.20	147.75
TP-13	156.99	8.84	148.15
TP-14	162.59	6.30	156.29
TP-16	179.72	14.30	165.42
TP-17	182.71	17.56	165.15

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.

Location	Date	Acetone	Benzene	Chlorobenzene	Carbon Tetrachloride	Bromodichloromethane	Bromomethane	Chloroethane	Chloromethane	Dibromochloromethane	cis-1,2-dichloroethene	Isopropylbenzene	methylene chloride
CM-00	Sep-03	NA[1]	< 1.0	< 1.0	< 1.0	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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
CM-01	Feb-03	NA	2.8	< 10.0	3.03	10.0	< 10.0	**20.5**	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Sep-03	NA	< 1.0	6.6	< 1.0	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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
CM-02	Feb-03	NA	1.17	< 10.0	1.5	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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
CM-03	Feb-03	NA	3.7	< 10.0	< 10.0	10.0	< 10.0	**8.42**	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Aug-05	< 25	1.1	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	1.4	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	1.1	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	1.6	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
CM-04	Feb-03	NA	2.25	< 10.0	< 10.0	10.0	< 10.0	3.43	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Aug-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
CM-05	Feb-03	NA	4.04	< 10.0	< 10.0	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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-02	Aug-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	32	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-03	Aug-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-04	Dec-02	ND[2]	**14.0**	1.81	10.0	ND	ND	**63.0**	**1.72**	ND	ND	1.26	ND
	Feb-03	NA	< 10.0	< 10.0	< 10.0	10.0	< 10.0	< 12.0	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Aug-03	NA	< 1.0	< 1.0	< 1.0	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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0

Location	Date	Acetone	Benzene	Chlorobenzene	Carbon Tetrachloride	Bromodichloromethane	Bromomethane	Chloroethane	Chloromethane	Dibromochloromethane	cis-1,2-dichloroethene	isopropylbenzene	methylene chloride
MW-05	Aug-05	< 25	< 1.0	1.3	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	1.2	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-06	Aug-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-07	Aug-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-08	Dec-02	ND	**6,900**	**290**	**16,0**	**6.84**	4.07	**66.0**	**39.2**	**4.45**	19	4.6	**26.1**
	Feb-03	NA	< 500.0	**230**	**12,0**	**4.72**	< 10.0	**85.5**	**3.34**	< 10.0	17.5	4.35	< 13.0
	Aug-05	< 6300	**18,000**	< 250	**3,50**	NA	< 250	< 250	< 250	NA	NA	NA	< 1,300
	Nov-05	< 2,500	**17,000**	**160**	**1,00**	NA	< 100	< 100	< 100	NA	NA	NA	< 500
	Feb-06	< 2,500	**11,000**	**160**	**480**	NA	< 100	< 100	< 100	NA	NA	NA	< 500
	May-06	< 630	**11,000**	**170**	**2,20**	< 25	< 25	< 25	< 25	NA	29	NA	**380**
	Aug-06	**750**	**15,000**	**220**	**640**	NA	< 1.0	**3.8**	< 1.0	NA	34	NA	**510**
MW-09	Dec-02	ND	**9.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.48
	Feb-03	NA	**64.3**	J 5.85	**20.7**	< 10.0	< 10.0	**19.7**	< 10.0	< 10.0	< 10.0	J 1.92	< 13.0
	Aug-05	< 25	**12**	1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	**16.0**	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	**18.0**	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	**8.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	**10**	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-10	Aug-03	NA	< 1.0	< 1.0	< 1.0	< 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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-11	Dec-02	ND	**114**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Feb-03	NA	J **6.39**	< 10.0	< 10.0	< 10.0	< 10.0	< 12.0	< 10.0	< 10.0	< 10.0	< 10.0	< 13.0
	Aug-03	NA	< 1.0	< 1.0	< 1.0	< 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	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-12	Aug-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-13	Aug-05	< 25	**120**	10	**260**	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	29	**78**	9.3	**53**	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	**110**	22	**77**	NA	1.6	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	**48**	5.4	**110**	< 1.0	< 1.0	< 1.0	< 1.0	NA	1	NA	< 5.0
	Aug-06	< 25	**72**	17	**45**	NA	< 1.0	< 1.0	< 1.0	NA	3.1	NA	< 5.0
MW-14	Aug-05	34	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	35	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	180	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0

Location	Date	Acetone	Benzene	Chlorobenzene	Carbon Tetrachloride	Bromodichloromethane	Bromomethane	Chloroethane	Chloromethane	Dibromochloromethane	cis-1,2-dichloroethene	isopropylbenzene	methylene chloride
MW-15	Aug-05	84	1.7	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-16	Aug-05	< 25	2.3	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	1.2	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-17	Aug-05	< 6300	**6,200**	**340**	**1,500**	NA	< 250	< 250	< 250	NA	NA	NA	< 1,300
	Nov-05	< 13,000	**1,500**	< 500	**17,00**	NA	< 500	< 500	< 500	NA	NA	NA	< 2,500
	Feb-06	< 13,000	**1,300**	**600**	**37,00**	NA	< 500	< 500	< 500	NA	NA	NA	< 2,500
	May-06	< 6,300	**4,200**	**530**	**30,00**	< 250	< 250	< 250	< 250	NA	< 250	NA	< 1,300
	Aug-06	570	**1,000**	**610**	**33,00**	NA	< 1.0	3.0	< 1.0	NA	26	NA	**10**
MW-18	Aug-05	< 25	**10**	45	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	3.9	26	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	4.2	31	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	< 25	**6.5**	35	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	4.8	34	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
MW-19	Aug-05	< 25	**20**	7.5	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Nov-05	< 25	**19**	6.4	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	Feb-06	< 25	**22**	9.8	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	NA	NA	< 5.0
	May-06	28	**21**	7.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
	Aug-06	< 25	**18**	6.3	< 1.0	NA	< 1.0	< 1.0	< 1.0	NA	< 1.0	NA	< 5.0
TRG[4]		608	5.0	100	5.0	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 cor

3 - ND = Non Detect / No detection limit available.

4 - Target Remediation Goals are taken from the Tier 1 Target Remedia

5 - TRG not yet established for this analyte.

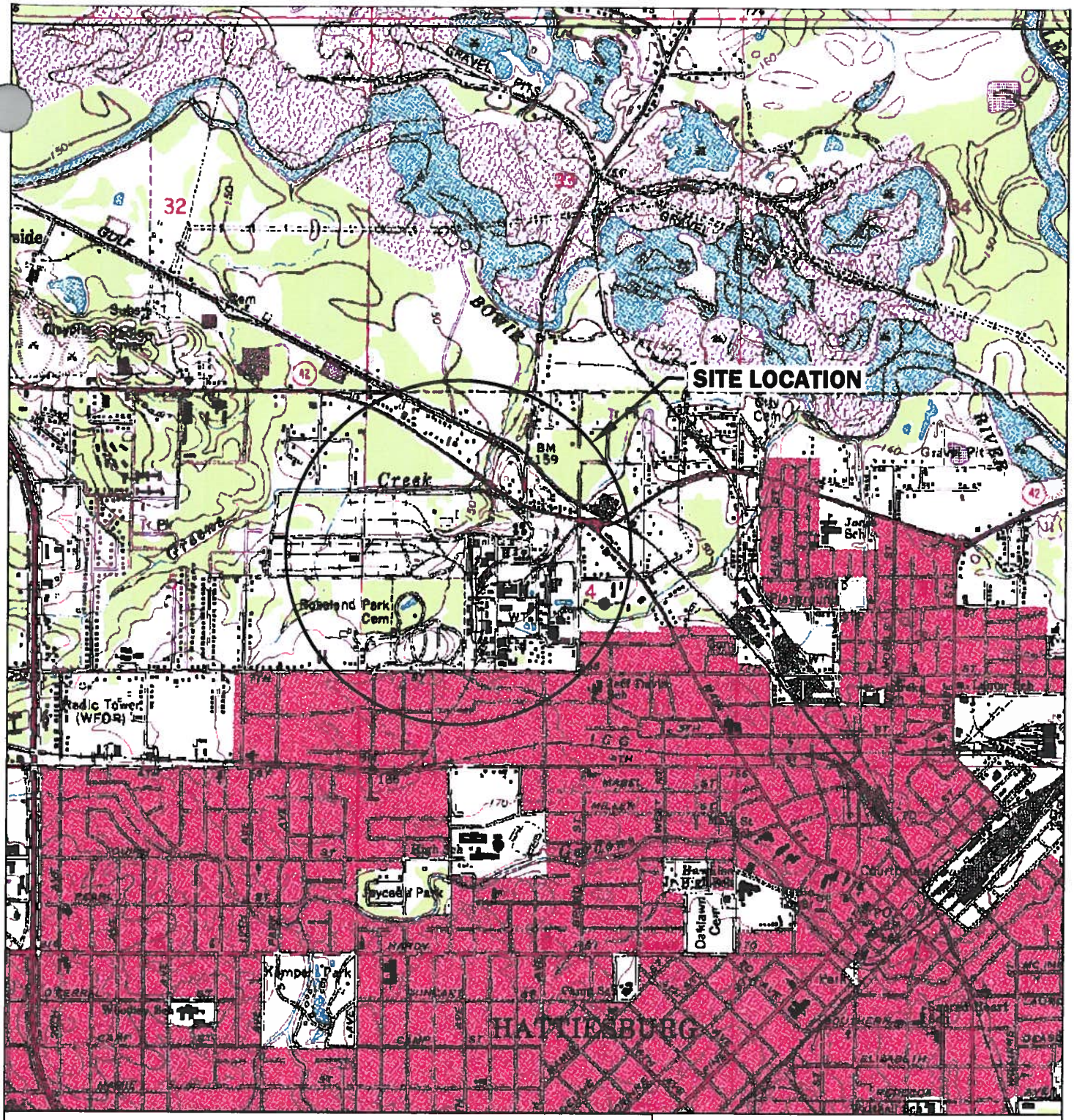
TABLE 3
SUMMARY OF QA/QC SAMPLE ANALYTICAL RESULTS
Hercules Incorporated
Hattiesburg, Mississippi
August 2006

Location	*Concentrations in µg/L*														
	Acetone	**Benzene**	**Bromomethane**	**Carbon Tetrachloride**	**Chlorobenzene**	**Chloroform**	**1,1-Dichloroethene**	**Ethylbenzene**	**Methylene Chloride**	**Toluene**	**Tetrachloroethene**	**Chloromethane**	**1,2-Dichloropropane**	**cis-1,2-Dichloroethene**	**Vinyl Chloride**
CM-02	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
CM-02 DUP	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
% variation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MW-09	< 25	**10**	< 1.0	< 1.0	< 1.0	< 1.0	6.0	1.0	< 5.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-09 DUP	< 25	**10**	< 1.0	< 1.0	< 1.0	< 1.0	5.9	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
% variation	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%
MW-13	< 25	**72**	< 1.0	**45**	17	**35**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	3.1	2.1
MW-13 DUP	< 25	**71**	< 1.0	**47**	16	**35**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	3.0	1.8
% variation	0%	1%	0%	4%	6%	0%	0%	0%	0%	0%	0%	0%	0%	3%	14%
RS-01	< 25	< 1.0	< 1.0	< 1.0	< 1.0	**1.3**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
RS-02	< 25	< 1.0	< 1.0	< 1.0	< 1.0	**1.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TB-01	< 25	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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

2 - Trip blanks were not analyzed for dioxathion constituents.

FIGURES



QUADRANGLE LOCATION

SOURCE: DeLORME 3D TopoQuads – HATTIESBURG, MISSISSIPPI

HERCULES INCORPORATED
HATTIESBURG, MISSISSIPPI

Eco·Systems, Inc.
Consultants, Engineers and Scientists

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

SITE LOCATION MAP

FIGURE 1