

Bonner Analytical Testing Company



2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

CASE NARRATIVE: Hercules

Semi-volatiles(BNA analysis)

Samples were collected on December 4th and 5th from Hercules in Hattiesburg, MS. They were received at BATCO on December 5, 2002 and included monitoring wells 7, 8, 9, 10, and 11. A duplicate sample, a matrix spike/matrix spike duplicate, and a rinsate blank were also collected for BNA analysis.

Samples were extracted on December 10, 2002 according to EPA SW-846 method 3510C and analyzed according to EPA SW-846 method 8270C on December 11, 2002. No complications were observed during the extraction process or in the analysis of the samples.

No compounds listed in method 8270 were found in the samples except for 4-methylphenol, which was observed in BT80874 and the duplicate sample. The concentration of 4-methylphenol in BT80874 was 13.16 ppb and the concentration in the duplicate sample was 12.76 ppb.

A DFTPP standard was run on the GC/MS to ensure the machine was functioning properly. A six-point curve was also installed prior to the injection of the Hercules samples. The concentrations of the curve range from 10 ppm to 100 ppm. The percent RSD for all compounds in the curve was below 15%. Also, calibration verifications were run during the sequence for QA/QC purposes. Both the DFTPP standard and the calibration verifications passed. Also, all SPCC and CCC compounds passed according to method 8270C.

Authorized by: _____

Michael S. Bonner, PhD.

Bonner Analytical Testing Company



2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

CASE NARRATIVE: Hercules, Hattiesburg MS.

Volatile Organic Analyses:

Samples were collected on October 14, 2002 from Hercules in Hattiesburg MS. They were received at BATCO on October 15, 2002 and included monitoring wells 5 and 6. A trip blank was also collected for volatile organic analyses.

Samples were analyzed for volatile organic compounds, VOC's, utilizing a 5890 Series II Hewlett Packard Gas Chromatograph (GC), and a Perkin-Elmer Ion Trap Detector. These samples were run within the fourteen-day holding time window according to EPA SW846 Method 8260B, which began on October 27, 2002. All QA/QC criteria were within the limits as set forth in EPA SW846 Method 8260B.

No compounds listed on the target analyte list for EPA SW846 Method 8260B were found in the samples collected from Hercules in monitoring wells 5 and 6. The trip blank collected also contained any of the said compounds or showed signs of co-eluting interferences.

A BFB standard was run on the HP-5890 GC to verify the detector, Ion Trap Detector, was tuned and properly functional. A five point calibration curve was obtained from dilutions of a working standard, 8260 calibration mix, which proved to pass linearity in accordance to EPA Method 8260B. Initial and continuing calibration verifications were acquired, analyzed, and passed during the sequence of the sample run. All Quality Assurance and Control measures were met in accordance to Method 8260B.

Authorized by: _____

Michael S. Bonner, PhD.

Table 1. Continued

Compound	MW-4	MW-8	MW-9	MW-11	Duplicate
1,3-dichlorobenzene	ND	3.75 ppb	ND	ND	ND
1,4-dichlorobenzene	ND	3.80 ppb	ND	ND	ND
1,2-dichloroethane	ND	20.0 ppb	ND	3.11 ppb	ND
Cis-1,2-dichloroethene	ND	19.0 ppb	ND	ND	ND
Ethyl benzene	ND	55.6 ppb	ND	ND	ND
Isopropylbenzene	1.26 ppb	4.60 ppb	2.48 ppb	ND	1.01ppb
p-isopropyltoluene	ND	23.9 ppb	ND	ND	ND
Methylene chloride	ND	26.1 ppb	ND	ND	ND
Naphthalene	5.38 ppb	9.14 ppb	ND	ND	7.34ppb
Tetrachloroethene	ND	8.51 ppb	ND	ND	ND
1,2,3-trichlorobenzene	1.81 ppb	2.55 ppb	ND	ND	2.73ppb
1,2,4-trichlorobenzene	ND	2.86 ppb	ND	ND	2.17ppb
1,2,4-trimethylbenzene	ND	1.81 ppb	ND	ND	ND
Xylenes (total)	ND	79.0 ppb	ND	ND	ND
Vinyl chloride	ND	1.62 ppb	ND	ND	ND

A BFB standard was run on the HP-5890 GC to verify the detector, Ion Trap Detector, was tuned and properly functional. A five point calibration curve was obtained from dilutions of a working standard, 8260 calibration mix, which proved to pass linearity in accordance to EPA Method 8260B. Initial and continuing calibration verifications were acquired, analyzed, and passed during the sequence of the sample run. All Quality Assurance and Control measures were met in accordance to Method 8260B.

Authorized by: _____

**Michael S. Bonner, PhD.**

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2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

CASE NARRATIVE: Hercules, Hattiesburg MS.

Volatile Organic Analyses:

Samples were collected on December 4th and 5th, 2002 from Hercules in Hattiesburg MS. They were received at BATCO on December 5, 2002 and included monitoring wells 4, 7, 8, 9, 10, and 11. A duplicate sample, a matrix spike, matrix spike duplicate, a rinsate blank, and two trip blanks were also collected for volatile organic analyses.

Samples were analyzed for volatile organic compounds, VOC's, utilizing a 5890 Series II Hewlett Packard Gas Chromatograph (GC), and a Perkin-Elmer Ion Trap Detector. These samples were run within the fourteen-day holding time window according to EPA SW846 Method 8260B, which began on December 13, 2002. All QA/QC criteria were within the limits as set forth in EPA SW846 Method 8260B.

Monitoring wells 4, 8, 9, and 11 and the sample duplicate were found to contain volatile organic compounds listed on the target analyte list, with monitoring well 8 having the highest levels of VOC compounds. Table 1 of this narrative lists the compounds observed from the said samples.

Table 1. Concentration Levels of Volatile Compounds for Samples Tested.

Compound	MW-4	MW-8	MW-9	MW-11	Duplicate
1,1-Dichloroethene	ND	17.0 ppb	5.92 ppb	ND	ND
Benzene	14.0 ppb	6900 ppb	9.15 ppb	114 ppb	11.2 ppb
Trichloroethene	ND	5.80 ppb	ND	ND	ND
Toluene	ND	28.0 ppb	ND	ND	ND
Chlorobenzene	1.81 ppb	290 ppb	ND	ND	1.14 ppb
Bromodichloromethane	ND	6.84 ppb	ND	ND	ND
Bromomethane	ND	4.07 ppb	ND	ND	ND
Carbon Tetrachloride	10.0 ppb	16,000 ppb	ND	ND	5.53 ppb
Chloroethane	63.0 ppb	66.0 ppb	ND	ND	64.8 ppb
Chloroform	ND	1800 ppb	ND	ND	ND
Chloromethane	1.72 ppb	39.2 ppb	ND	ND	1.19 ppb
Dibromochloromethane	ND	4.45 ppb	ND	ND	ND
1,2-dichlorobenzene	ND	2.71 ppb	ND	ND	ND

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CASE NARRATIVE: Hercules, Hattiesburg MS.

Semi-volatiles (Dioxathion Analysis)

Samples were collected and received by BATCO on October 14, 2002. A total of 6 water samples were received and analyzed for the presence of Dioxathion. These samples included monitoring wells 1,4, and 5 plus a rinsate and two matrix spikes. The sequence run included a Lab Control Sample, Method Blank, and a sample duplicate, as well as the fore mentioned samples.

A Dioxathion Calibration working standard was prepared from the individual Dioxenethion, Dioxathion (cis) and Dioxathion (trans) isomers obtained from Sigma-Aldrich Chemicals. Dilutions were made from the working standard to obtain a six-point curve (0.4 to 10 ppm) utilizing a HP-1090 HPLC and HP-Chem software. A Diode-Array Detector, DAD, was used to obtain the data. Table 1 illustrates the retention times, linearity correlation coefficient and the MDL's.

Table 1-Calibration Data

Dioxathion Isomer	Retention Times @ 210 nm (min)	Calibration of Linearity Correlation Coefficient	Method Detection Limits (ppb)
Dioxenethion	4.510	0.9996	0.220
Dioxathion (cis)	8.580	0.9995	0.480
Dioxathion (trans)	9.216	0.9978	0.300

Samples were extracted on 10/21/02 using an EPA SW846 Method 3520C for Continuous Liquid-Liquid separatory funnel extractions. Methylene chloride was the extracting solvent and exchanged to acetonitrile at 1-mL final volume. The samples were then analyzed on 10/22/02, using the HP-1090 HPLC under the same method as the calibration. Calibration verifications were analyzed before and after the sample batch. All quality assurance criteria based on guidelines given in SW-846 Method 8000B was met. Table 2 illustrates the raw data obtained in this analysis.

Table 2-Raw Data

Lab ID	Description	Dioxenethion	Dioxathion (cis)	Dioxathion(trans)
BT80054	Monitor Well #1	ND	ND	ND
BT80055	Monitor Well #4	19.2ppb	4.80ppb	1.61ppb
BT80055D	Monitor Well #4 Dup	20.7ppb	4.71ppb	1.75ppb
BT80056	Rinsate	ND	ND	ND
BT80057	Monitor Well #5	5.09ppb	1.70ppb	1.44ppb

Authorized by:

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CASE NARRATIVE: Hercules

Semi-volatiles(BNA analysis)

Samples were collected on October 14, 2002 from Hercules in Hattiesburg, MS. They were received at BATCO on October 15, 2002 and included monitoring wells 5 and 6. A matrix spike and matrix spike duplicate were also collected for BNA analysis.

Samples were extracted on October 21, 2002 at 0900 according to EPA SW-846 method 3510C and analyzed according to EPA SW-846 method 8270C on November 6, 2002. No complications were observed during the extraction process or in the analysis of the samples.

No compounds listed in method 8270 were found in either of the monitoring wells. Lab control and MS/MSD recoveries for surrogate and target compounds were acceptable according to in-house criteria set by EPA SW-846 Method 8000B, section 8.7.

A DFTPP standard was run on the GC/MS to ensure the machine was functioning properly. A six-point curve was also installed prior to the injection of the Hercules samples. The concentrations of the curve range from 10 ppm to 100 ppm. The percent RSD for all compounds in the curve was below 15%. Also, calibration verifications were run during the sequence for QA/QC purposes. Both the DFTPP standard and the calibration verifications passed. Also, all SPCC and CCC compounds passed according to method 8270C.

Authorized by: _____

A handwritten signature in black ink, appearing to read "M. S. Bonner".

Michael S. Bonner, PhD.

BONNER ANALYTICAL TESTING COMPANY



2703 OAK GROVE ROAD, HATTIESBURG, MS 39402
PHONE: (601) 264-2854 FAX: (601) 268-7084

CASE NARRATIVE: Hercules, Hattiesburg MS.

Semi-volatiles (Dioxathion Analysis)

Samples were collected and received by BATCO on December 4 and December 5, 2002. A total of 6 water samples were collected on December 4 and a total of 9 samples were collected on December 5, 2002. These samples included monitoring wells 1-11, a duplicate sample, plus a rinsate blank and two matrix spikes for a total of 15 samples. The sequence run included a Laboratory Control Sample, and a Method Blank as quality assurance measures, as well as the fore mentioned samples.

A Dioxathion Calibration working standard was prepared from the individual Dioxenethion, Dioxathion (cis) and Dioxathion (trans) isomers obtained from Sigma-Aldrich Chemicals. Dilutions were made from the working standard to obtain a six-point curve (0.4 to 10 ppm) utilizing a HP-1090 HPLC and HP-Chem software. A Diode-Array Detector, DAD, was used to obtain the data. Table 1 illustrates the retention times, linearity correlation coefficient and the MDL's.

Table 1-Calibration Data

Dioxathion Isomer	Retention Times @ 210 nm (min)	Calibration of Linearity Correlation Coefficient	Method Detection Limits (ppb)
Dioxenethion	4.434	0.9994	0.220
Dioxathion (cls)	8.375	0.9999	0.480
Dioxathion (trans)	9.033	0.9996	0.300

Samples were extracted on 12/11/02 using an EPA SW846 Method 3510C for Separatory Funnel Liquid-Liquid Extraction. Methylene chloride was the extracting solvent and exchanged to acetonitrile at 1-mL final volume. The samples were then analyzed on 12/12/02, using the HP-1090 HPLC under the same method as the calibration. Calibration verifications were analyzed before and after the sample batch. All quality assurance criteria based on guidelines given in SW-846 Method 8000B was met. Table 2 illustrates the raw data obtained in this analysis.

Table 2-Raw Data

Lab ID	Description	Dioxenethion	Dioxathion (cis)	Dioxathion (trans)	Surrogate Recovery
BT80863	Monitor Well #1	ND	ND	ND	83.2%
BT80864	Monitor Well #11	50.3ppb	5.00ppb	ND	99.4%
BT80865	Monitor Well #3	ND	ND	ND	90.0%
BT80866	Monitor Well #2	ND	ND	ND	87.6%
BT80867	Monitor Well #10	ND	ND	ND	88.0%
BT80868	Monitor Well #7	9.57ppb	ND	ND	79.6%
BT80870	Monitor Well #9	5.90ppb	12.8ppb	ND	146%
BT80871	Monitor Well #4	12.9ppb	3.34ppb	ND	85.8%
BT80872	Monitor Well #5	ND	ND	ND	82.2%
BT80873	Monitor Well #6	1.12ppb	ND	ND	76.0%
BT80874	Monitor Well #8	94.3ppb	ND	53.9ppb	409%
BT80875	Monitor Well #8 MS*	98.9ppb	5.35ppb	58.4ppb	414%
BT80876	Monitor Well #8 MSD*	98.5ppb	5.05ppb	57.9ppb	386%
BT80877	Rinsate Blank	ND	ND	ND	89.4%
BT80879	Sample Duplicate	12.1ppb	3.23ppb	ND	79.2%

*Spiked with 5ppb of each isomer

All samples were spiked with naphthalene (surrogate) prior to extraction. The surrogate was added to follow the extraction efficiency of the method. Two samples MW-8 and MW-9 had very high surrogate recoveries, 146% and 409%, respectively. These two samples were analyzed by GC/MS to confirm that the recoveries were due to naphthalene and not another interfering compound. Future analyses of these wells should include an alternate surrogate compound that does not co-elute with other peaks in the sample.

Authorized by:



Michael S. Bonner, PhD.



BONNER ANALYTICAL TESTING COMPANY

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601)-264-2854 Fax: (601)-268-7084 Email: batco@batco.com

WWW.BATCO.COM

YOUR COMPANY NAME: Hercules
YOUR COMPANY ADDRESS: 6137th St
Hattiesburg, MS 39401
NAME OF PERSON TO CONTACT: Charlie Jordan
CONTACT PERSON'S PHONE: (601) 936-4440 FAX: _____
CONTACT PERSON'S EMAIL: _____

CLIENT PROJECT NO.	CLIENT P.O.#	CLIENT PROJECT NUMBER		
		SAMPLE DESCRIPTION	DATE	TIME
1		MW-1	12/4/02	1045
2		MW-1	12/4/02	1210
3		MW-3	12/4/02	1500
4		MW-2	12/4/02	1545
5		MW-10	12/4/02	1640
6		MW-7	12/4/02	1620
7		Trip Blank	12/3/02	1604
8				
9				
10				

SAMPLE COLLECTOR/RELINQUISHED BY: Jan 11 2003 DATE: 12-4-02 TIME: 17:20
METHOD OF SHIPMENT (If Any): Express RELINQUISHED BY: Allen Jones

PARAMETERS FOR ANALYSIS				LABORATORY USE	
Diagnosis	Semi-Vol	Vol		Time Around Time	Project Number
					005456
					File ID
X				2	BT80863
X				7	BT80864
X				2	BT80865
X				2	BT80866
X				7	BT80867
X				7	BT80868
X				3	BT80869
					BT
					BT
					BT

REMARKS: _____
DATE/TIME: 12-5-02
0805
REVISION NO 1.2
03/22/01

YOUR COMPANY: Hercules
 YOUR COMPANY ADDRESS: 613 7th St
Hattiesburg MS 39401
 NAME OF PERSON TO CONTACT: Charles Jordan
 CONTACT PERSON'S PHONE: _____
 CONTACT PERSON'S EMAIL: _____

CLIENT PROJECT NO. _____ CLIENT ROOM _____ CLIENT PROJECT NUMBER _____
 DATE _____ TIME _____
 SAMPLE DESCRIPTION _____ MATRIX _____

SAMPLE DESCRIPTION	DATE	TIME	MATRIX
1 MW-9	12/5/02	1015	Liquid
2 MW-4	12/5/02	1315	Liquid
3 MW-5	12/5/02	1420	Liquid
4 MW-6	12/5/02	1930	Liquid
5 MW-8	12/5/02	1610	Liquid
6 MS	12/5/02	1610	Liquid
7 MSD	12/5/02	1525	Liquid
8 Rinse & Blank	12/5/02	1601	Liquid
9 Trip Blank	12/5/02	1315	Liquid
10 D.C.	12/5/02	1315	Liquid

SAMPLE COLLECTOR/RELINQUISHED BY: Charles V. Joy DATE: 12/5/02 TIME: 1658
 METHOD OF SHIPMENT (if any): Box

RELINQUISHED BY: Marie Kudo DATE: _____ TIME: _____
 RECEIVED FOR BATCO BY: _____ DATE/TIME: 12-6-02

REMARKS: * Semi-Vol Dup collected at 1610
☐ REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINERS
 IF SAMPLE IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF \$30.00 PER SAMPLE WILL BE ASSESSED.
 REVISION NO 12 03/22/01

BONNER ANALYTICAL TESTING COMPANY
 2703 Oak Grove Road, Hattiesburg, MS 39402
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 WWW.BATCO.COM



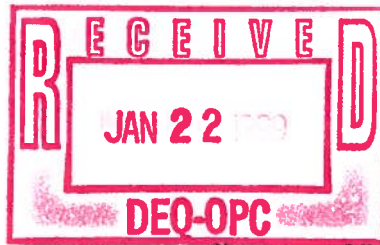
PARAMETERS FOR ANALYSIS
 Turn Around Time
 Project Number

PARAMETERS FOR ANALYSIS	NUMBER OF CONTAINERS	PRESERVATION	File ID
Distillation	X	X	BT80870
Semi-Vol	X	X	BT80871
VOL	X	X	BT80872
	X	X	BT80873
	X	X	BT80874
	X	X	BT80875
	X	X	BT80876
	X	X	BT80877
	X	X	BT80878
	X	X	BT80879

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____

LABORATORY USE
 Turn Around Time
 Project Number

005456
 BT80870
 BT80871
 BT80872
 BT80873
 BT80874
 BT80875
 BT80876
 BT80877
 BT80878
 BT80879



Hercules Incorporated
613 West 7th Street
P.O. Box 1937
Hattiesburg, MS 39403-1937
(601) 545-3450
FAX: (601) 584-3226
<http://www.herc.com>

January 19, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

No. Z 570 544 112

Mr. Bryan Young
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39209

Dear Mr. Young:

Please find the enclosed 4th Quarter 1998, sampling results. Also, enclosed is the snapshot sampling of Green's Creek we had discussed.

If I can answer any questions, please call me at 601-584-3660.

Very truly yours,
HERCULES INCORPORATED

A handwritten signature in blue ink, appearing to read "Charles S. Jordan".

Charles S. Jordan
Environmental Coordinator

CSJ/vrf

Enclosures:

cc: Walter D. Langhans
Plant Manager

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT50288-50289
Collected By: Client

Sample Date/Time: 11-30/12-01-98
Date/Time Rec'd: 12-01-98 @ 1600

4th QUARTER, 1998

Analyte/Method	Trip Blank	Equipment Blank	MDL	Date/Time/Analyst
-----	-----	-----	-----	-----
Arsenic/200.7	ND	ND	0.03	12-17-98/1721/GMR
Barium/200.7	ND	ND	0.0005	12-17-98/1721/GMR
Cadmium/213.1	ND	ND	0.015	12-08-98/1350/NLE
Chromium/218.1	ND	ND	0.04	12-10-98/1520/NLE
Lead/239.1	ND	ND	0.20	12-09-98/1540/NLE
Mercury/245.1	ND	ND	0.0002	12-18-98/1530/NLE
Selenium/200.7	ND	0.01	0.01	12-17-98/1721/GMR
Silver/272.1	ND	ND	0.025	12-10-98/1630/NLE

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by:



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2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT50290-50291
Collected By: Client

Sample Date/Time: 12-01-98
Date/Time Rec'd: 12-01-98 @ 1600

4TH QUARTER, 1998

Analyte/Method	MW-1	MW-2	MDL	Date/Time/Analyst
-----	-----	-----	-----	-----
Arsenic/200.7	ND	ND	0.03	12-17-98/1721/GMR
Barium/200.7	0.181	0.082	0.0005	12-17-98/1721/GMR
Cadmium/213.1	ND	ND	0.015	12-08-98/1350/NLE
Chromium/218.1	ND	ND	0.04	12-10-98/1520/NLE
Lead/239.1	ND	ND	0.20	12-09-98/1540/NLE
Mercury/245.1	ND	0.0002	0.0002	12-18-98/1530/NLE
Selenium/200.7	ND	ND	0.01	12-17-98/1721/GMR
Silver/272.1	ND	ND	0.025	12-10-98/1630/NLE

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

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2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT50292-50293
Collected By: Client

Sample Date/Time: 12-01-98
Date/Time Rec'd: 12-01-98 @ 1600

4th QUARTER, 1998

Analyte/Method -----	MW-3 -----	MW-4 -----	MDL -----	Date/Time/Analyst -----
Arsenic/200.7	ND	ND	0.03	12-17-98/1721/GMR
Barium/200.7	0.065	0.146	0.00005	12-17-98/1721/GMR
Cadmium/213.1	ND	ND	0.015	12-08-98/1350/NLE
Chromium/218.1	ND	ND	0.04	12-10-98/1520/NLE
Lead/239.1	ND	ND	0.20	12-09-98/1540/NLE
Mercury/245.1	ND	ND	0.0002	12-18-98/1530/NLE
Selenium/200.7	0.01	ND	0.01	12-17-98/1721/GMR
Silver/272.1	ND	ND	0.025	12-10-98/1630/NLE

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

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2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT50294-50295
Collected By: Client

Sample Date/Time: 12-01-98
Date/Time Rec'd: 12-01-98 @ 1600

4TH QUARTER, 1998

Analyte/Method -----	MW-5 -----	MW-6 -----	MDL -----	Date/Time/Analyst -----
Arsenic/200.7	0.029	ND	0.03	12-17-98/1721/GMR
Barium/200.7	0.523	0.186	0.00005	12-17-98/1721/GMR
Cadmium/213.1	ND	ND	0.015	12-08-98/1350/NLE
Chromium/218.1	ND	ND	0.04	12-10-98/1520/NLE
Lead/239.1	ND	ND	0.20	12-09-98/1540/NLE
Mercury/245.1	0.0002	0.0002	0.0002	12-18-98/1530/NLE
Selenium/200.7	ND	ND	0.01	12-17-98/1721/GMR
Silver/272.1	ND	ND	0.025	12-10-98/1630/NLE

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by: _____


Michael S. Bonner, Ph.D.

BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES		Collected: 11/30/98		16:00		BATCO		Sample Type: Water						
Location: Trip Blank		Received: 12/01/98		16:00		CMB		Analysis Method: 8260						
File #: BT50288		Analyzed: 12/03/98		12:56		CRR								
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT60293)			MATRIX SPIKE DUP (BT60293)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			47.0	250.0	94.0	48.2	250.0	96.4
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.6	250.0	103.2
Trichloroethene	79-01-6	2.50	ND			ND			46.9	250.0	93.8	45.7	250.0	91.4
Toluene	108-88-3	2.50	ND			ND			54.8	250.0	109.6	51.0	250.0	102.0
Chlorobenzene	108-90-7	2.00	ND			ND			57.7	250.0	115.4	57.8	250.0	115.6
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoform	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-85-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			3.31			3.29		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
Naphthalene	91-20-3	3.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	1.50	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: <u>HERCULES</u>		Collected: <u>11/30/98</u>		16:00		BATCO		Sample Type: <u>Water</u>						
Location: <u>Trip Blank</u>		Received: <u>12/01/98</u>		16:00		CMB		Analysis Method: <u>8260</u>						
File #: <u>BT50288</u>		Analysis: <u>12/03/98</u>		12:56		CRR								
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane	1868-53-7		50.0	250.0	100.0	50.2	250.0	100.4	44.0	250.0	88.0	44.5	250.0	89.0
Toluene-d8	2037-26-5		48.4	250.0	96.8	47.6	250.0	95.2	50.2	250.0	100.4	46.7	250.0	93.4
4-Bromofluorobenzene	460-00-4		53.0	250.0	106.0	55.0	250.0	110.0	52.3	250.0	104.6	52.1	250.0	104.2

Certified by:

Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File # : BT50288

Lab Sample ID : Trip Blank

GC Column Length : 105 M

GC Column ID : 0.53 mm

Method Code: 8260

Concentration Units : ug / L (PPB)

[illegible]

* Only SW 846 Method 8260 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES		Collected: 12/01/98		8:50		BATCO		Sample Type: Water						
Location: Equipment Blank		Received: 12/01/98		16:00		CMB		Analysis Method: 8260						
File #: BT50289		Analyzed: 12/03/98		15:05		CRR								
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT60293)			MATRIX SPIKE DUP (BT60293)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			47.0	250.0	94.0	48.2	250.0	96.4
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.6	250.0	103.2
Trichloroethene	79-01-6	2.50	ND			ND			46.9	250.0	93.8	45.7	250.0	91.4
Toluene	108-88-3	2.50	ND			ND			54.8	250.0	109.6	51.0	250.0	102.0
Chlorobenzene	108-90-7	2.00	ND			ND			57.7	250.0	115.4	57.8	250.0	115.6
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoform	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	7.00			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	106-93-4	4.00	ND			ND			ND			ND		
1,2-Dibromomethane	96-12-8	2.00	ND			ND			ND			ND		
Dibromomethane	74-85-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	158-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	ND			ND			3.31			3.29		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
Naphthalene	91-20-3	3.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	1.50	ND			ND			ND			ND		

Page 1 of 3

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES		Collected: 12/01/98		8:50		BATCO		Sample Type: Water	
Location: Equipment Blank		Received: 12/01/98		16:00		CMB		Analysis Method: 8260	
File #: BT50289		Analysis: 12/03/98		15:05		CRR			
		Date		Time		Analyst			

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane	1868-53-7		51.1	250.0	102.2	50.2	250.0	100.4	44.0	250.0	88.0	44.5	250.0	89.0
Toluene-d8	2037-26-5		48.8	250.0	97.6	47.6	250.0	95.2	50.2	250.0	100.4	46.7	250.0	93.4
4-Bromofluorobenzene	460-00-4		52.1	250.0	104.2	55.0	250.0	110.0	52.3	250.0	104.6	52.1	250.0	104.2

Certified by: 
Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File # : BT50289

Lab Sample ID : Equipment Blank

GC Column Length : 105 M

GC Column ID : 0.53 mm

Method Code: 8260

Concentration Units : ug / L (PPB)

[illegible]

* Only SW 846 Method 8260 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES		Collected: 12/01/98		11:30		BATCO		Sample Type: Water						
Location: MW - 4		Received: 12/01/98		16:00		CMB		Analysis Method: 8260						
File #: BT50293		Analyzed: 12/03/98		14:02		CRR								
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT50293)			MATRIX SPIKE DUP (BT50293)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			47.0	250.0	94.0	48.2	250.0	96.4
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.6	250.0	103.2
Trichloroethene	79-01-6	2.50	ND			ND			46.9	250.0	93.8	45.7	250.0	91.4
Toluene	108-88-3	2.50	ND			ND			54.8	250.0	109.6	51.0	250.0	102.0
Chlorobenzene	108-90-7	2.00	ND			ND			57.7	250.0	115.4	57.8	250.0	115.6
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoform	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-85-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	3.42			ND			3.31			3.29		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
Naphthalene	91-20-3	3.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	1.50	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES		Collected: <u>12/01/98</u>		11:30		BATCO		Sample Type: <u>Water</u>	
Location: <u>MW - 4</u>		Received: <u>12/01/98</u>		16:00		CMB		Analysis Method: <u>8260</u>	
File #: <u>BT50293</u>		Analysis: <u>12/03/98</u>		14:02		CRR			
		Date		Time		Analyst			

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane	1868-53-7		50.7	250.0	101.4	50.2	250.0	100.4	44.0	250.0	88.0	44.5	250.0	89.0
Toluene-d8	2037-26-5		48.7	250.0	97.4	47.6	250.0	95.2	50.2	250.0	100.4	46.7	250.0	93.4
4-Bromofluorobenzene	480-00-4		53.2	250.0	106.4	55.0	250.0	110.0	52.3	250.0	104.6	52.1	250.0	104.2

Certified by: 
 Michael S. Bonner, Ph. D.
 Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File # : BT50293

Lab Sample ID : MW - 4

GC Column Length : 105 M

GC Column ID : 0.53 mm

Method Code: 8260

Concentration Units : ug / L (PPB)

[illegible]

* Only SW 846 Method 8260 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

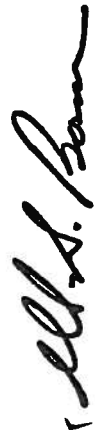
Client: HERCULES		Collected: 12/01/98		12:45		BATCO		Sample Type: Water						
Location: MW - 5		Received: 12/01/98		16:00		CMB		Analysis Method: 8260						
File #: BT50294		Analyzed: 12/07/98		12:09		CRR								
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT50293)			MATRIX SPIKE DUP (BT50293)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	10.0	ND			ND			47.0	250.0	94.0	48.2	250.0	96.4
Benzene	71-43-2	10.0	ND			ND			52.4	250.0	104.8	51.6	250.0	103.2
Trichloroethene	79-01-6	12.5	ND			ND			46.9	250.0	93.8	45.7	250.0	91.4
Toluene	108-88-3	12.5	ND			ND			54.8	250.0	109.6	51.0	250.0	102.0
Chlorobenzene	108-90-7	10.0	ND			ND			57.7	250.0	115.4	57.8	250.0	115.6
Bromobenzene	108-86-1	12.5	ND			ND			ND			ND		
Bromochloromethane	74-87-5	10.0	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	10.0	ND			ND			ND			ND		
Bromoform	75-25-2	12.5	ND			ND			ND			ND		
Bromomethane	74-83-9	5.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	7.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	12.5	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	15.0	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	10.0	ND			ND			ND			ND		
Chloroethane	75-00-3	15.0	ND			ND			ND			ND		
Chloroform	66-67-3	10.0	ND			ND			ND			ND		
Chloromethane	74-87-3	15.0	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	15.0	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	7.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	10.0	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	20.0	ND			ND			ND			ND		
1,2-Dibromomethane	106-83-4	10.0	ND			ND			ND			ND		
Dibromomethane	74-85-3	12.5	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	12.5	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	10.0	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	10.0	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	10.0	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	10.0	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	10.0	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	12.5	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	12.5	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	12.5	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	12.5	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	10.0	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	10.0	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	10.0	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	10.0	ND			ND			ND			ND		
Ethyl benzene	100-41-4	12.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	10.0	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	12.5	ND			ND			3.31			3.29		
p-Isopropyltoluene	99-87-6	10.0	ND			ND			ND			ND		
Methylene chloride	75-09-2	12.5	ND			ND			ND			ND		
Naphthalene	91-20-3	15.0	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	7.50	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collection: 12/1/98		15:15		BATCO		Sample Type: Water						
Location: Monitoring Wells MW#4		Extraction: 12/3/98		8:00		JMR		Extraction Method: 35LOC						
File #: BT50293		Analysis: 12/18/98		10:28		JMR		Analysis Method: 8270						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50293			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07	150.00	61.38	75.68	150.00	50.45
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67	100.00	95.67	91.82	100.00	91.82
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzo(a)anthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzo(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzo(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzo(a)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenz(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzo(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			52.13	200.00	26.07	49.93	200.00	24.97	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			35.44	200.00	17.72	40.80	200.00	20.40	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			41.92	100.00	41.92	57.62	100.00	57.62	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			61.89	100.00	61.89	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			160.48	200.00	80.24	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			67.93	100.00	67.93	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits

Certified by:



Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES

Location: MW - 5

File #: BT50294

Collected: 12/01/98 12:45 BATCO
Received: 12/01/98 16:00 CMB
Analysis: 12/07/98 12:09 CRR
Date Time Analyst

Sample Type: Water
Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
Styrene	100-42-5	10.0	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	12.5	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	12.5	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	10.0	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	10.0	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	12.5	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	10.0	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	12.5	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	10.0	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	7.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	10.0	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	15.0	ND			ND			ND			ND		
Vinyl chloride	75-01-4	10.5	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	20.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane	1868-53-7		50.2	250.0	100.4	50.9	250.0	101.8	44.0	250.0	88.0	44.5	250.0	89.0
Toluene-d8	2037-26-5		48.0	250.0	96.0	48.0	250.0	96.0	50.2	250.0	100.4	46.7	250.0	93.4
4-Bromofluorobenzene	480-00-4		55.8	250.0	111.6	56.8	250.0	113.6	52.3	250.0	104.6	52.1	250.0	104.2

Certified by:


Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File # : BT50294

Lab Sample ID : MW - 5

GC Column Length : 105 M

GC Column ID : 0.53 mm

Method Code: 8260

Concentration Units : ug / L (PPB)

Number TICs Found : 0*

[illegible]

* Only SW 846 Method 8260 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collected: 11/30/98		16:00		BATCO		Sample Type:						
Location: Monitoring Wells Trip Blank		Extracted: 12/3/98		8:00		JMR		Extraction Method:						
File #: BT50288		Analyzed: 12/18/98		8:41		JMR		Analysis Method:						
		Data		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50288			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.6	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND		
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules Location: <u>Monitoring Wells MW#4</u> File #: <u>BT50293</u>		Collected: <u>12/1/98</u> Extracted: <u>12/3/98</u> Analyzed: <u>12/18/98</u>		15:15 8:00 10:28		BATCO JMR JMR		Sample Type: <u>Water</u> Extraction Method: <u>3510C</u> Analysis Method: <u>8270</u>						
Compound Name	CAS Number	MDL ug/L (ppb)	BT50293			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	150.00		ND	150.00	
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND	100.00	45.91	53.33	100.00	53.33
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91			ND		
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			ND			ND		
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
4-Nitrophenol	100-02-7	8.6	ND			ND			ND			ND		
Dibenzofuran	132-64-9	8.4	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND		
Diethylphthalate	84-66-2	9.9	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Number T1Cs Found: 1*

Lab Sample ID: MW-4

Concentration Units: ug / L (ppb)

* Only SW 846 Method 8270 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules Location: <u>Monitoring Wells MW#5</u> File #: <u>BT50294</u>			Collected: <u>12/1/98</u> Extracted: <u>12/3/98</u> Analyzed: <u>12/18/98</u>			12:45 8:00 11:22			BATCO JMR JMR			Sample Type: <u>Water</u> Extraction Method: <u>3510C</u> Analysis Method: <u>8270</u>		
Compound Name	CAS Number	MDL ug/L (ppb)	BT50294			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			ND			ND		
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
4-Nitrophenol	100-02-7	8.6	ND			ND			ND			ND		
Dibenzofuran	132-64-9	8.4	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND		
Diethylphthalate	84-66-2	9.9	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collection: 12/1/98		12:45		BATCO		Sample Type: Water						
Location: Monitoring Wells MW#5		Extraction: 12/3/98		8:00		JMR		Extraction Method: 3510C						
File #: BT50294		Analysis: 12/18/98		11:22		JMR		Analysis Method: 8270						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50294			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07	150.00	61.38	75.68	150.00	50.45
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67	100.00	95.67	91.82	100.00	91.82
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzo(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzo(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			82.74	200.00	41.37	49.93	200.00	24.97	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			57.69	200.00	28.85	40.80	200.00	20.40	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			68.33	100.00	68.33	57.62	100.00	57.62	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			97.59	100.00	97.59	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			232.64	200.00	116.32	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			120.09	100.00	120.09	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits


 Certified by: Michael S. Bonner, Ph.D.
 Bonner Analytical Testing Company

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

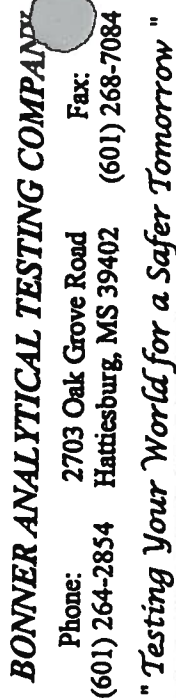
Number TICs Found: 0*

Lab Sample ID: MW-5

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.



YOUR COMPANY NAME: Heracles

YOUR COMPANY ADDRESS: _____

NAME OF PERSON TO CONTACT: _____

CONTACT PERSON'S PHONE: _____

YOUR PROJECT NO.:	YOUR P.Q.#	YOUR PROJECT NAME: Monitoring Wells
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YOUR SAMPLE DESCRIPTION:	DATE	TIME	MATRIX
TRIP Bk	11/30	1600	w
Equipment Bk	12-1-98	0850	w
_____	_____	_____	_____
_____	_____	_____	_____
# MW#1	12-1-98	1350	w
MW#2	12-1-98	1434	w
MW#3	12-1-98	1130	w
MW#4	12-1-98	1515	w
MW#5	12-1-98	1245	w
MW#6	12-1-98	1040	w

RELINQUISHED BY: (signature)	DATE	TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	12-1-98	1600	
METHOD OF SHIPMENT			SHIPPED BY: (Signature)

SAMPLE REMAINDER DISPOSAL
 3 RETURN SAMPLE REMAINDER TO CLIENT VIA _____
 (SOME SHIPPING CHARGES MAY BE INCURRED)

REMARK:

Turnaround Time

Detection Limits Special Limits Require	Yes	No
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B50289

0620515

3T50291

BTS0292

5150293

3750294

BT50295

RECEIVED BY:
(Signature)

DATE/TIME

RECEIVED FOR BATCO BY:
(Signature)

COURIER
(Signature)

☐ I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS _____ (Signature) _____ (Date)
IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM
ADDITIONAL CHARGE OF \$25.00 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL

For Greene Creek

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collected: 12/21/98		8:45		BATCO		Sample Type: Water						
Location: Trip Blank		Extracted: 12/22/98		11:21		JMR		Extraction Method: 3510C						
File #: BT50675		Analyzed: 12/22/98		23:54		JMR		Analysis Method: 8270						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50675			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
2-Chlorophenol	95-57-8	5.7	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			ND			ND		
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			ND			ND		
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
4-Nitrophenol	100-02-7	8.6	ND			ND			ND			ND		
Dibenzofuran	132-64-9	8.4	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND		
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collection: 12/21/98		8:45		BATCO		Sample Type: Water						
Location: Trip Blank		Extraction: 12/22/98		11:21		JMR		Extraction Method: 3510C						
File #: BT50675		Analysis: 12/22/98		23:54		JMR		Analysis Method: 8270						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50675			BLANK			Matrix Spike			Matrix Spike Duplicates		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07			75.68		
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67			91.82		
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofuranthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidlene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzo(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			42.17	200.00	21.09	55.02	200.00	27.51	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			26.96	200.00	13.48	65.69	200.00	32.85	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			39.74	100.00	39.74	33.91	100.00	33.91	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			57.09	100.00	57.09	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			185.69	200.00	92.85	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			108.87	100.00	108.87	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits

Certified by:



Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collection: 11/30/98		16:00		BATCO		Sample Type:		Water					
Location: Monitoring Wells Trip Blank		Extraction: 12/3/98		8:00		JMR		Extraction Method:		3510C					
File #: BT50288		Analysis: 12/18/98		8:41		JMR		Analysis Method:		8270					
										Date		Time		Analyst	
Compound Name	CAS Number	MDL ug/L (ppb)	BT50288			BLANK			Matrix Spike			Matrix Spike Duplicate			
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike		
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery	
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND			
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND			
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND			
Pentachlorophenol	87-86-5	12.5	ND			92.07			75.68			75.68			
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND			
Anthracene	120-12-7	8.0	ND			ND			ND			ND			
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND			
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND			
Pyrene	129-00-0	7.9	ND			95.67			91.82			91.82			
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND			
Benzo(a)anthracene	56-55-3	7.7	ND			ND			ND			ND			
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND			
Chrysene	218-01-9	7.8	ND			ND			ND			ND			
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND			
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND			
Benzo(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND			
Benzo(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND			
Benzo(a)pyrene	50-32-8	5.9	ND			ND			ND			ND			
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND			
Dibenzo(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND			
Benzo(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND			
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	
2-Fluorophenol			47.67	200.00	23.84	49.93	200.00	24.97	58.50	200.00	29.25	64.89	200.00	32.45	
Phenol-d5			34.87	200.00	17.44	40.80	200.00	20.40	50.28	200.00	25.14	48.35	200.00	24.18	
Nitrobenzene-d5			38.81	100.00	38.81	57.62	100.00	57.62	59.21	100.00	59.21	60.35	100.00	60.35	
2-Fluorobiphenyl			60.99	100.00	60.99	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61	
2,4,6-Tribromophenol			156.06	200.00	78.03	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74	
Terphenyl-d14			52.18	100.00	52.18	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39	

* = Results Outside of QA Limits

Micheal S. Bonner
Micheal S. Bonner, Ph. D.
Bonner Analytical Testing Company

Certified by:

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Number TICs Found: 0*

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collected: 12/1/98		8:50		BATCO		Sample Type:						
Location: Monitoring Wells Equipment Blank		Extracted: 12/3/98		8:00		JMR		Extraction Method:						
File #: BT50289		Analyzed: 12/18/98		9:35		JMR		Analysis Method:						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50289			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			ND			ND		
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
Benzoic Acid	88-75-5	9.1	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	65-85-0	22.3	ND			ND			ND			ND		
2-Nitrophenol	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.6	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND		
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: <u>Hercules</u>		Collection: <u>12/1/98</u>		8:50		<u>BATCO</u>		Sample Type: <u>Water</u>						
Location: <u>Monitoring Wells Equipment Blank</u>		Extraction: <u>12/3/98</u>		8:00		<u>JMR</u>		Extraction Method: <u>3510C</u>						
File #: <u>BT50289</u>		Analysis: <u>12/18/98</u>		9:35		<u>JMR</u>		Analysis Method: <u>8270</u>						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50289			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07	150.00	61.38	75.68	150.00	50.45
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67	100.00	95.67	91.82	100.00	91.82
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenz(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			46.23	200.00	23.12	49.93	200.00	24.97	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			33.39	200.00	16.70	40.80	200.00	20.40	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			37.27	100.00	37.27	57.62	100.00	57.62	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			58.17	100.00	58.17	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			137.24	200.00	68.62	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			56.41	100.00	56.41	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits



Certified by:

Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Sample Matrix: Water

Sample Collection Date : 12/1/98

Sample Analysis Date: 12/18/98

Dilution Factor: 1.00

Sample Weight/Volume: 1000ml

Number TICs Found: 0*

Lab Sample ID: Equipment Blank

GC Column Length: 30M

GC Column ID: 0.25mm

Method Code: 8270

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File #: BT50675

Lab Sample ID: Trip Blank

GC Column Length: 30M

GC Column ID: 0.25mm

Method Code:8270

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collected: 12/21/98		9:45		BATCO		Sample Type:		Water				
Location: Field Blank		Extracted: 12/22/98		11:21		JMR		Extraction Method:		3510C				
File #: BT50676		Analyzed: 12/23/98		0:47		JMR		Analysis Method:		8270				
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50676			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected ng/ul in the extract	Spike		Detected ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethoxy)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-05-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.6	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND		
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collection: 12/21/98		9:45		BATCO		Sample Type: Water						
Location: Field Blank		Extraction: 12/22/98		11:21		JMR		Extraction Method: 35.0C						
File #: BT50676		Analysis: 12/23/98		0:47		JMR		Analysis Method: 8270						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50676			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07	150.00	61.38	75.68	150.00	50.45
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67	100.00	95.67	91.82	100.00	91.82
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzof(a)anthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzof(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzof(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzof(a)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzof(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzof(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			52.40	200.00	26.20	55.02	200.00	27.51	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			39.70	200.00	19.85	65.69	200.00	32.85	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			71.78	100.00	71.78	33.91	100.00	33.91	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			68.25	100.00	68.25	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			216.23	200.00	108.12	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			104.47	100.00	104.47	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits

Certified by:

Micheal S. Bonner, Ph. D.
Bonner Analytical Testing Company

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Client: Hercules

Sample Matrix: Water

Sample Collection Date :12/21/98

Sample Analysis Date:12/22/98

Dilution Factor: 1

Sample Weight/Volume: 1000ml

Number TICs Found: 0

File #: BT50676

Lab Sample ID: Field Blank

GC Column Length: 30M

GC Column ID: 0.25mm

Method Code:8270

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collected: 12/21/98		10:00		BATCO		Sample Type:		Water				
Location: 001 Greens Creek		Extracted: 12/22/98		11:21		JMR		Extraction Method:		35.0C				
File #: BT50677		Analyzed: 12/22/98		22:07		JMR		Analysis Method:		8270				
Compound Name	CAS Number	MDL ug/L (ppb)	BT50677			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			ND			ND		
Nitrobenzene	98-95-3	8.2	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			ND			ND		
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
4-Nitrophenol	100-02-7	8.6	ND			ND			ND			ND		
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND		
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
Diethylphthalate	84-66-2	9.9	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules			Collection: 12/21/98			10:00			BATCO			Sample Type: Water		
Location: 001 Greens Creek			Extraction: 12/22/98			11:21			JMR			Extraction Method: 3510C		
File #: BT50677			Analysis: 12/22/98			22:07			JMR			Analysis Method: 8270		
			Date			Time			Analyst					
Compound Name	CAS Number	MDL ug/L (ppb)	BT50677			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07	150.00	61.38	75.68	150.00	50.45
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67	100.00	95.67	91.82	100.00	91.82
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzo(a)anthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzo(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzo(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzo(a)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzo(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzo(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			46.03	200.00	23.02	55.02	200.00	27.51	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			31.65	200.00	15.83	65.69	200.00	32.85	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			46.96	100.00	46.96	33.91	100.00	33.91	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			60.00	100.00	60.00	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			160.26	200.00	80.13	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			73.58	100.00	73.58	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits

Certified by:


Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Sample Matrix: Water

Sample Collection Date :12/21/98

Sample Analysis Date: 12/22/98

Dilution Factor: 1

Sample Weight/Volume: 1000ml

Number TICs Found: 0

Lab Sample ID: 001 Greens Creek

GC Column Length: 30M

GC Column ID: 0.25mm

Method Code:8270

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collected: 12/21/98		11:00		BATCO		Sample Type:		Water				
Location: 002 Greens Creek		Extracted: 12/22/98		11:21		JMR		Extraction Method:		3510C				
File #: BT50678		Analyzed: 12/22/98		23:00		JMR		Analysis Method:		8270				
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50678			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			57.81	150.00	38.54	48.82	150.00	32.55
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			112.12	150.00	74.75	88.24	150.00	58.83
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			45.91	100.00	45.91	53.33	100.00	53.33
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			91.85	100.00	91.85	99.45	100.00	99.45
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			63.76	100.00	63.76	63.77	100.00	63.77
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			111.13	150.00	74.09	85.53	150.00	57.02
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			78.23	100.00	78.23	79.95	100.00	79.95
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.6	ND			ND			41.98	150.00	27.99	37.06	150.00	24.71
Dibenzofuran	132-64-9	8.4	ND			ND			91.85	100.00	91.85	95.17	100.00	95.17
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND		
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: <u>Hercules</u>		Collection: <u>12/21/98</u>		<u>11:00</u>		<u>BATCO</u>		Sample Type: <u>Water</u>						
Location: <u>002 Greens Creek</u>		Extraction: <u>12/22/98</u>		<u>11:21</u>		<u>JMR</u>		Extraction Method: <u>3510C</u>						
File #: <u>BT50678</u>		Analysis: <u>12/22/98</u>		<u>23:00</u>		<u>JMR</u>		Analysis Method: <u>8270</u>						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT50678			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/ul in the extract	Spike		Detected Amount ng/ul in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.07	150.00	61.38	75.68	150.00	50.45
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			95.67	100.00	95.67	91.82	100.00	91.82
Butylbenzylpithalate	85-68-7	9.9	ND			ND			ND			ND		
Benzo(a)anthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzo(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzo(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzo(a)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzo(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzo(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			44.14	200.00	22.07	55.02	200.00	27.51	58.50	200.00	29.25	64.89	200.00	32.45
Phenol-d5			31.37	200.00	15.69	65.69	200.00	32.85	50.28	200.00	25.14	48.35	200.00	24.18
Nitrobenzene-d5			40.10	100.00	40.10	33.91	100.00	33.91	59.21	100.00	59.21	60.35	100.00	60.35
2-Fluorobiphenyl			62.91	100.00	62.91	85.44	100.00	85.44	72.25	100.00	72.25	73.61	100.00	73.61
2,4,6-Tribromophenol			211.75	200.00	105.88	165.27	200.00	82.64	181.46	200.00	90.73	179.48	200.00	89.74
Terphenyl-d14			96.47	100.00	96.47	123.38	100.00	123.38	71.06	100.00	71.06	72.39	100.00	72.39

* = Results Outside of QA Limits



Certified by:
Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Number TICs Found: 0

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

YOUR COMPANY ADDRESS:

Fax:

(601) 264-2854 Hattiesburg, MS 39402 (601) 268-7084

"Testing Your World for a Safer Tomorrow"

NAME OF PERSON TO CONTACT:

CONTACT PERSON'S PHONE:

YOUR PROJECT NO.:

YOUR P.O.#

YOUR PROJECT NAME:

YOUR SAMPLE DESCRIPTION:

MATRIX

TIME

DATE _____

MATRIX

Fly 002

Frucht

Every 2

feet across	Inches	②	FPS
1	12	1	1
2	24	4	4
3	36	9	9
4	48	16	16
5	60	25	25
6	72	36	36
7	84	49	49
8	96	64	64
9	108	81	81
10	120	100	100
11	132	121	121
12	144	144	144
13	156	169	169
14	168	196	196
15	180	225	225
16	192	256	256
17	204	289	289
18	216	324	324
19	228	361	361
20	240	400	400
21	252	441	441
22	264	484	484
23	276	529	529
24	288	576	576
25	300	625	625
26	312	676	676
27	324	729	729
28	336	784	784
29	348	841	841
30	360	900	900
31	372	961	961
32	384	1024	1024
33	396	1089	1089
34	408	1156	1156
35	420	1225	1225
36	432	1296	1296
37	444	1369	1369
38	456	1444	1444
39	468	1521	1521
40	480	1600	1600
41	492	1681	1681
42	504	1764	1764
43	516	1849	1849
44	528	1936	1936
45	540	2025	2025
46	552	2116	2116
47	564	2209	2209
48	576	2304	2304
49	588	2401	2401
50	600	2500	2500
51	612	2601	2601
52	624	2704	2704
53	636	2809	2809
54	648	2916	2916
55	660	3025	3025
56	672	3136	3136
57	684	3249	3249
58	696	3364	3364
59	708	3481	3481
60	720	3600	3600
61	732	3721	3721
62	744	3844	3844
63	756	3969	3969
64	768	4096	4096
65	780	4225	4225
66	792	4356	4356
67	804	4489	4489
68	816	4624	4624
69	828	4761	4761
70	840	4900	4900
71	852	5041	5041
72	864	5184	5184
73	876	5329	5329
74	888	5476	5476
75	900	5625	5625
76	912	5776	5776
77	924	5929	5929
78	936	6084	6084
79	948	6241	6241
80	960	6400	6400
81	972	6561	6561
82	984	6724	6724
83	996	6889	6889
84	1008	7056	7056
85	1020	7225	7225
86	1032	7396	7396
87	1044	7569	7569
88	1056	7744	7744
89	1068	7921	7921
90	1080	8100	8100
91	1092	8281	8281
92	1104	8464	8464
93	1116	8649	8649
94	1128	8836	8836

12

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10

11

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141

RELINQUISHED BY:
(Signature)

RECEIVED BY: (Signed) 

TIME

DATE _____

RELINQUISHED BY:
(Signature)

DATE	TIME
------	------

RECEIVED BY:
(Signature)

METHOD OF SHIPMENT

SHIPPED BY:
(Signature)

**COURIER
(Signature)**

RECEIVED FOR BATCO BY:
(Signature)

DATE/TIME

SAMPLE REMAINDER DISPOSAL

☐ RETURN SAMPLE REMAINDER TO CLIENT VIA _____
(SOME SHIPPING CHARGES MAY BE INCURRED)

☐ I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF \$25.00 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL.

____ (Signature) _____ (Date)

Monitoring Well Sampling Event

at

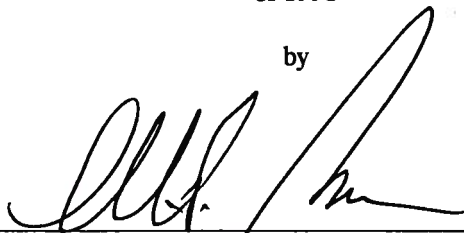
Hercules, Inc.
613 West 7th Street
Hattiesburg, Ms

presented to:

Charles Jordan, Environmental Supervisor
Hercules, Inc.
Hattiesburg, MS

September 9 & 25, 1998
2nd Quarterly Sampling
of 1998

by

A handwritten signature in black ink, appearing to read 'M. S. Bonner', is written over a horizontal line.

Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

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1.0 INTRODUCTION

At the request of Mr. Charlie Jordan, Environmental Supervisor with Hercules Inc. of Hattiesburg, MS, Bonner Analytical Testing Company sampled six monitoring wells which were previously installed at the site during December, 1997. This sampling event, which took place on September 9 and 25, 1998, was the third of four quarterly events directed by the Mississippi Department of Environmental Quality (MDEQ).

2.0 PURGING

Prior to purging, each well was gauged from north side top of casing (TOC) to assess depth to water and well depth. After well gauging was completed, a dedicated bailer was placed in the well and five well volumes were removed. pH, temperature, conductivity, and turbidity were recorded after each well volume. A total of five well volumes were removed from each well.

3.0 SAMPLING & ANALYSIS

Samples were collected immediately following the purging process utilizing disposable Teflon bailers. MW1, MW2, MW3, and MW6 were tested for eight RCRA metals. MW4 and MW5 were tested for metals, volatiles, and semivolatiles as directed by MDEQ. Analytical protocols were EPA 200 series and SW846-8260/8270 as outlined in the work plan. Additionally, one trip blank and one equipment blank was analyzed for each parameter as part of the QA/QC protocol.

Volatile and semivolatile organics were quantitated using the standard compound list. Those remaining compounds in the 8260/8270 comprehensive list were screened as Tentatively Identified Compounds (TIC).

There was no attempt to address any other TICs. One organophosphorus compound was found an estimated

concentration of 37.34 ppb in Monitoring Well 4. Additionally one Aromatic Hydrocarbon was found at 9.72 ppb in Monitoring Well 5.

4.0 RESULTS

There were no significant hits for the eight listed RCRA metals. Barium was detected at levels ranging from 0.08 ppm to 0.167 ppm while arsenic was detected in Monitoring Well 4 and Monitoring Well 5 at 0.002 and 0.015 ppm respectively. No SW846/8260 volatile compounds were found. One aromatic hydrocarbon SW846/8270 compound was tentatively identified at 9.72 ppb. One Organophosphorous compound was tentatively identified at 37.34 ppb.

5.0 DISCUSSION

Groundwater flow direction was determined to be in a south westerly direction (Table 1 and Drawing #1).

Available data suggests that groundwater flow generally follows the flow direction of Green's creek. That is in a northeasterly direction (Table I & Drawing I).

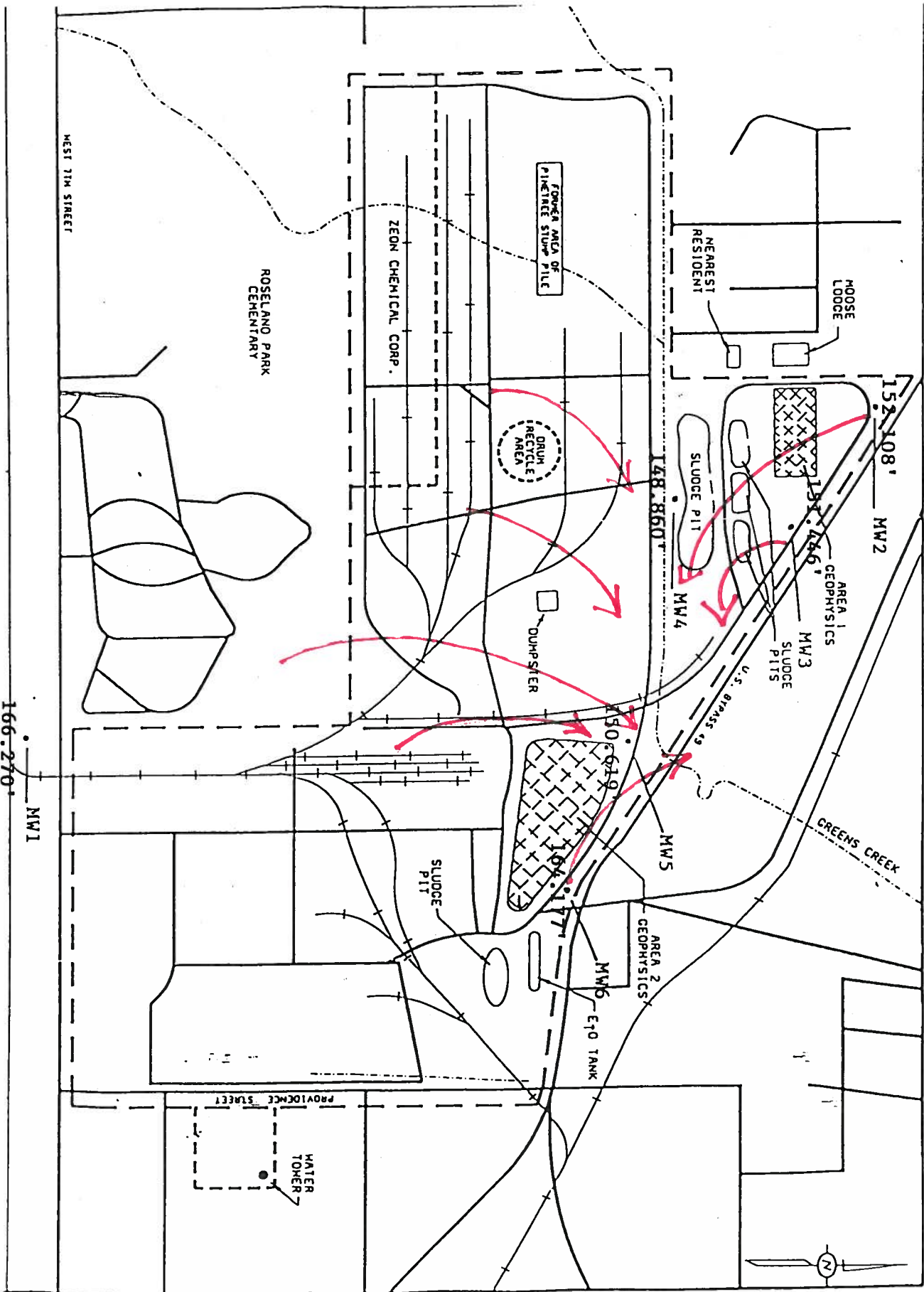
TABLE I

GROUNDWATER ELEVATION

Well ID #	Dec. 12 & 15, 1997	June 24, 1998	Sept. 8 & 25, 1998
1	166.270	----	162.490
2	153.258	152.108	150.888
3	152.626	151.446	151.496
4	148.830	148.860	147.760
5	150.949	150.619	149.468
6	164.517	164.177	164.077

DRAWING I

GROUNDWATER ELEVATION & FLOW DIRECTION
HERCULES, INC.
HATTIESBURG, MS
MONITORING WELL LOCATIONS
SEPTEMBER 9 & 25, 1998





APPENDIX I

ANALYTICAL DATA REPORTS

September 9 & 25, 1998

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT47966 & 47968
Collected By: Client

Sample Date/Time: 09-25-98
Date/Time Rec'd: 09-25-98 @ 1330

3RD QUARTER, 1998

Analyte/Method	MW-1	MW-2	MDL	Date/Time/Analyst
-----	-----	-----	-----	-----
Arsenic/206.2	ND	ND	0.0002	11-06-98/0131/GMR
Barium/200.15	0.167	0.067	0.00005	11-06-98/0858/GMR
Cadmium/213.1	ND	ND	0.015	10-07-98/1600/NLE
Chromium/218.1	ND	ND	0.04	10-08-98/0920/NLE
Lead/239.1	ND	ND	0.20	10-07-98/1600/NLE
Mercury/245.1	0.0002	0.0002	0.0002	11-05-98/1400/NLE
Selenium/270.2	ND	0.0006	0.0005	11-05-98/2229/GMR
Silver/272.1	ND	ND	0.025	10-13-98/1400/NLE

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by:



Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

sr

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT47969 & 47967

Sample Date/Time: 09-25-98

Collected By: Client

Date/Time Rec'd: 09-25-98 @ 1330

3RD QUARTER, 1998

Analyte/Method	MW-3	MW-6	MDL	Date/Time/Analyst
-----	-----	-----	-----	-----
Arsenic/206.2	0.001	ND	0.0002	11-06-98/0131/GMR
Barium/200.15	0.108	0.167	0.00005	11-06-98/0858/GMR
Cadmium/213.1	ND	ND	0.015	10-07-98/1600/NLE
Chromium/218.1	ND	ND	0.04	10-08-98/0920/NLE
Lead/239.1	ND	ND	0.20	10-07-98/1600/NLE
Mercury/245.1	ND	ND	0.0002	11-05-98/1400/NLE
Selenium/270.2	ND	ND	0.0005	11-05-98/2229/GMR
Silver/272.1	ND	ND	0.025	10-13-98/1400/NLE

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by:



Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT47610-47611
Collected By: Client

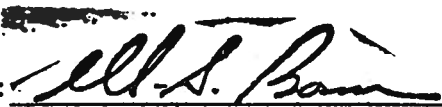
Sample Date/Time: 09-09-98
Date/Time Rec'd: 09-09-98 @ 1200

3RD QUARTER, 1998

Analyte/Method	MW-4	MW-5	MDL	Date/Time/Analyst
-----	-----	-----	-----	-----
Arsenic/206.2	0.002	0.015	0.0002	11-06-98/0131/GMR
Barium/200.7	0.08	0.51	0.0005	10-09-98/1217/GMR
Cadmium/213.1	ND	ND	0.015	10-07-98/1608/NLE
Chromium/218.1	ND	ND	0.04	10-08-98/0920/NLE
Lead/239.1	ND	ND	0.20	10-07-98/1600/NLE
Mercury/245.1	ND	0.0002	0.0002	10-01-98/1500/NLE
Selenium/270.2	ND	ND	0.0005	11-05-98/2229/GMR
Silver/200.7	ND	ND	0.002	10-01-98/1037/GMR

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by: 

Michael S. Bonner, Ph.D.

BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT47608-47609
Collected By: Client

Sample Date/Time: 09-09-98
Date/Time Rec'd: 09-09-98 @ 1200

3RD QUARTER, 1998

Analyte/Method	Trip Blank	Equipment Blank	MDL	Date/Time/Analyst
-----	-----	-----	-----	-----
Arsenic/206.2	ND	ND	0.0002	11-06-98/0131/GMR
Barium/200.7	ND	ND	0.0005	10-09-98/1217/GMR
Cadmium/213.1	ND	ND	0.015	10-07-98/1608/NLE
Chromium/218.1	ND	ND	0.04	10-08-98/0920/NLE
Lead/239.1	ND	ND	0.20	10-07-98/1600/NLE
Mercury/245.1	ND	ND	0.0002	10-01-98/1500/NLE
Selenium/270.2	ND	ND	0.0005	11-05-98/2229/GMR
Silver/200.7	ND	ND	0.002	10-01-98/1037/GMR

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by: 

Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT47969 & 47967
Collected By: Client

Sample Date/Time: 09-25-98
Date/Time Rec'd: 09-25-98 @ 1330

QA/QC RESULTS

Analyte	% Recovery	Matrix Spike Duplicate
Arsenic	95.9	90.7
Barium	107.4	108.8
Cadmium	99.1	99.1
Chromium	100.2	105.2
Lead	101.4	91.3
Mercury	98.1	96.3
Selenium	100.9	102.8
Silver	99.3	99.3

All analyses performed in accordance with 40 CFR 136 and amendments.

Certified by:


Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

sr

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client: Hercules

Sample Matrix: Water

Sample Collection Date : 9/9/98

Sample Analysis Date:9/23/98

Dilution Factor: 2

Sample Weight/Volume: 1000ml

Number TICs Found: 1*

File #: BT47611

Lab Sample ID: MW-5

GC Column Length: 30M

GC Column ID: 0.25mm

Method Code: 625

Concentration Units: ug / L (ppb)

[illegible]

* Only SW 846 Method 8270 analytes listed as TICs.

APPENDIX II

FIELD DATA REPORTS

September 9 & 25, 1998

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: Hercules
Location: MW #4
File #: BT46086

Collected: 06/24/98 12:15 BATCO
Received: 06/26/98 8:00 CMB
Analysis: 07/02/98 14:35 CRR
Date Time Analyst

Sample Type: Water
Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethane	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane	1868-53-7		47.4	250.0	94.8	49.6	250.0	99.2	45.9	250.0	91.8	47.8	250.0	95.6
Toluene-d8	2037-26-5		49.0	250.0	98.0	51.0	250.0	102.0	48.7	250.0	97.4	48.9	250.0	97.8
4-Bromofluorobenzene	460-00-4		47.8	250.0	95.6	48.0	250.0	96.0	49.0	250.0	98.0	47.2	250.0	94.4

Certified by:



Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
Location: **Tripp blank**
File #: **BT47608**

Collected: **09/09/98** 07:50 **BATCO**
Received: **09/09/98** 12:00 **CMB**
Analyzed: **09/15/98** 13:56 **CRR**
Date _____ Time _____ Analyst _____

Sample Type: **Water**
Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT47611)			MATRIX SPIKE DUP (BT47611)		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	6.00	ND			ND			46.3	250.0	92.6	49.3	250.0	98.6
Benzene	71-43-2	6.00	ND			ND			49.8	250.0	99.6	52.8	250.0	105.6
Trichloroethene	79-01-6	7.50	ND			ND			47.7	250.0	95.4	50.9	250.0	101.8
Toluene	108-88-3	7.50	ND			ND			45.0	250.0	90.0	46.0	250.0	92.0
Chlorobenzene	108-90-7	6.00	ND			ND			50.8	250.0	101.6	55.6	250.0	111.2
Bromobenzene	108-86-1	7.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	6.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	6.00	ND			ND			ND			ND		
Bromoform	75-25-2	7.50	ND			ND			ND			ND		
Bromomethane	74-83-9	3.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	4.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	7.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	9.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	6.00	ND			ND			ND			ND		
Chloroethane	75-00-3	9.00	ND			ND			ND			ND		
Chloroform	66-67-3	6.00	ND			ND			ND			ND		
Chloromethane	74-87-3	9.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	9.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	4.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	6.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	12.0	ND			ND			ND			ND		
1,2-Dibromomethane	106-93-4	6.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	7.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	7.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	6.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	6.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	6.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	6.00	ND			ND			ND			ND		
cis-1,2-Dichloroethane	156-59-2	7.50	ND			ND			ND			ND		
trans-1,2-Dichloroethane	156-60-5	7.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	7.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	7.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	6.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	6.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	6.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	6.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	7.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	6.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	7.50	ND			ND			ND			ND		
p-Isopropyltoluene	98-87-6	6.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	7.50	ND			ND			ND			ND		
Naphthalene	91-20-3	9.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	4.50	ND			ND			ND			ND		

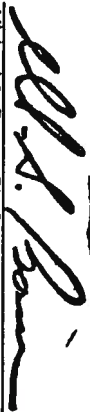
BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
 Location: **Trip blank**
 File #: **BT47608**

Collected: **09/09/98** 07:50 **BATCO**
 Received: **09/09/98** 12:00 **CMB**
 Analysis: **09/15/98** 13:56 **CRR**
 Date _____ Time _____ Analyst _____

Sample Type: **Water**
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
Styrene	100-42-5	6.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	7.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	7.50	ND			ND			ND			ND		
Tetrachloroethane	127-18-4	6.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	6.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	7.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	6.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	7.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	6.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	4.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	6.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	9.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	7.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	12.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Dibromofluoromethane	1868-53-7		50.6	250.0	101.2	50.8	250.0	101.6	45.2	250.0	90.4	46.8	250.0	93.6
Toluene-d8	2037-26-5		50.6	250.0	101.2	50.2	250.0	100.4	48.4	250.0	96.8	48.5	250.0	97.0
4-Bromofluorobenzene	460-00-4		46.0	250.0	92.0	49.0	250.0	98.0	47.3	250.0	94.6	47.6	250.0	95.2

Certified by: 
 Michael S. Bonner, Ph. D.
 Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT47608

Sample Matrix : Water

Lab Sample ID : Trip Blank

Sample Collection Date : 09/09/98

GC Column Length : 105 M

Sample Analysis Date : 09/15/98

GC Column ID : 0.53 mm

Dilution Factor : 3

Sample Weight/ Volume : 5.0 (g/mL) mL

Method Code: 8260

Number TICs Found : 0

Concentration Units : ug / L (PPB)

[illegible]

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
 Location: **Equipment Blank**
 File #: **BT 47609**

Collected: **09/09/98** **10:10** **BATCO**
 Received: **09/09/98** **12:00** **CMB**
 Analyzed: **09/15/98** **16:00** **CRR**
 Date _____ Time _____ Analyst _____

Sample Type: **Water**
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT47611)			MATRIX SPIKE DUP (BT47611)		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	6.00	ND			ND			46.3	250.0	92.6	49.3	250.0	98.6
Benzene	71-43-2	6.00	ND			ND			49.8	250.0	99.6	52.8	250.0	105.6
Trichloroethene	79-01-6	7.50	ND			ND			47.7	250.0	95.4	50.9	250.0	101.8
Toluene	108-88-3	7.50	ND			ND			45.0	250.0	90.0	46.0	250.0	92.0
Chlorobenzene	108-90-7	6.00	ND			ND			50.8	250.0	101.6	55.6	250.0	111.2
Bromobenzene	108-86-1	7.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	6.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	6.00	ND			ND			ND			ND		
Bromoform	75-25-2	7.50	ND			ND			ND			ND		
Bromomethane	74-83-9	3.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	4.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	7.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	9.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	6.00	ND			ND			ND			ND		
Chloroethane	75-00-3	9.00	ND			ND			ND			ND		
Chloroform	66-67-3	6.00	ND			ND			ND			ND		
Chloromethane	74-87-3	9.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	9.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	4.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	6.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	12.0	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	6.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	7.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	7.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	6.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	6.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	6.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	6.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	7.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	7.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	7.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	7.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	6.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	6.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	6.00	ND			ND			ND			ND		
i-1,3-Dichloropropene	10061-02-6	6.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	7.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	6.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	7.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	6.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	7.50	ND			ND			ND			ND		
Naphthalene	91-20-3	9.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	4.50	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
Location: **Equipment Blank**
File #: **BT47609**

Collected: **09/09/98** **10:10** **BATCO**
Received: **09/09/98** **12:00** **CMB**
Analysis: **09/15/98** **16:00** **CRR**
Date _____ Time _____ Analyst _____

Sample Type: **Water**
Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
Styrene	100-42-5	6.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	7.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	7.50	ND			ND			ND			ND		
Tetrachloroethane	127-18-4	6.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	6.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	7.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	6.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	75-00-5	7.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	6.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	4.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	6.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	9.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	7.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	12.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Dibromofluoromethane	1868-53-7		51.4	250.0	102.8	50.8	250.0	101.6	45.2	250.0	90.4	46.8	250.0	93.6
Toluene-d8	2037-26-5		51.2	250.0	102.4	50.2	250.0	100.4	48.4	250.0	96.8	48.5	250.0	97.0
4-Bromofluorobenzene	480-00-4		49.0	250.0	98.0	49.0	250.0	98.0	47.3	250.0	94.6	47.6	250.0	95.2

Certified by: 
Michael S. Bonner, Ph.D.
Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File # : BT47609

Lab Sample ID : Equipment Blank

GC Column Length : 105 M

GC Column ID : 0.53 mm

Method Code: 8260

Concentration Units : ug / L (PPB)

Number TICs Found : 0

[illegible]

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
 Location: **MW - 4**
 File #: **BT47610**

Collected: **09/09/98**
 Received: **09/09/98**
 Analyzed: **09/15/98**
 Date: **12:00**
 Time: **17:02**
 Analyst: **CMB**

Sample Type: **Water**
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT47611)			MATRIX SPIKE DUP (BT47611)		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	6.00	ND			ND			46.3	250.0	92.6	49.3	250.0	98.6
Benzene	71-43-2	6.00	ND			ND			49.8	250.0	99.6	52.8	250.0	105.6
Trichloroethene	79-01-6	7.50	ND			ND			47.7	250.0	95.4	50.9	250.0	101.8
Toluene	108-88-3	7.50	ND			ND			45.0	250.0	90.0	46.0	250.0	92.0
Chlorobenzene	108-90-7	6.00	ND			ND			50.8	250.0	101.6	55.6	250.0	111.2
Bromobenzene	108-86-1	7.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	6.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	6.00	ND			ND			ND			ND		
Bromomethane	75-25-2	7.50	ND			ND			ND			ND		
n-Butylbenzene	74-83-9	3.00	ND			ND			ND			ND		
sec-Butylbenzene	104-51-8	4.50	ND			ND			ND			ND		
tert-Butylbenzene	135-98-8	7.50	ND			ND			ND			ND		
Carbon Tetrachloride	98-06-6	9.00	ND			ND			ND			ND		
Chloroethane	56-23-5	6.00	ND			ND			ND			ND		
Chloroform	75-00-3	9.00	ND			ND			ND			ND		
Chloromethane	68-67-3	6.00	ND			ND			ND			ND		
2-Chlorotoluene	74-87-3	9.00	ND			ND			ND			ND		
4-Chlorotoluene	95-49-8	9.00	ND			ND			ND			ND		
Dibromochloromethane	106-43-4	4.50	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	124-48-1	6.00	ND			ND			ND			ND		
1,2-Dibromoethane	96-12-8	12.0	ND			ND			ND			ND		
Dibromomethane	106-93-4	6.00	ND			ND			ND			ND		
1,2-Dichlorobenzene	74-95-3	7.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	95-50-1	7.50	ND			ND			ND			ND		
1,4-Dichlorobenzene	541-73-1	6.00	ND			ND			ND			ND		
Dichlorodifluoromethane	106-46-7	6.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-71-8	6.00	ND			ND			ND			ND		
cis-1,2-Dichloroethane	75-34-3	6.00	ND			ND			ND			ND		
trans-1,2-Dichloroethane	107-06-2	6.00	ND			ND			ND			ND		
1,2-Dichloropropane	156-59-2	7.50	ND			ND			ND			ND		
1,3-Dichloropropane	156-60-5	7.50	ND			ND			ND			ND		
2,2-Dichloropropane	78-87-5	7.50	ND			ND			ND			ND		
1,1-Dichloropropene	142-28-9	7.50	ND			ND			ND			ND		
c-1,3-Dichloropropene	594-20-7	6.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	563-58-6	6.00	ND			ND			ND			ND		
Ethyl benzene	10061-01-5	6.00	ND			ND			ND			ND		
Hexachlorobutadiene	10061-02-6	6.00	ND			ND			ND			ND		
Isopropylbenzene	100-41-4	7.50	ND			ND			ND			ND		
p-Isopropyltoluene	87-68-3	6.00	ND			ND			ND			ND		
Methylene chloride	98-82-8	7.50	ND			ND			ND			ND		
n-Propylbenz	99-87-6	7.50	ND			ND			ND			ND		
	75-09-2	6.00	ND			ND			ND			ND		
	91-20-3	9.00	ND			ND			ND			ND		
	103-65-1	4.50	ND			ND			ND			ND		

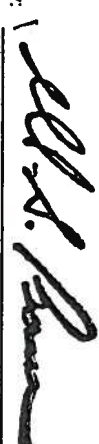
BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
Location: **MW - 4**
File #: **BT47610**

Collected: **09/09/98** **BATCO**
Received: **09/09/98** **CMB**
Analysis: **09/15/98** **CRR**
Date **Time** Analyst

Sample Type: **Water**
Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
Styrene	100-42-5	6.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	7.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	7.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	6.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	6.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	7.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	6.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	7.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	6.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	4.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	6.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	9.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	7.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	12.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Dibromofluoromethane	1868-53-7		47.7	250.0	95.4	50.8	250.0	101.6	45.2	250.0	90.4	46.8	250.0	93.6
Toluene-d8	2037-26-5		50.7	250.0	101.4	50.2	250.0	100.4	48.4	250.0	96.8	48.5	250.0	97.0
4-Bromofluorobenzene	460-00-4		49.4	250.0	98.8	49.0	250.0	98.0	47.3	250.0	94.6	47.6	250.0	95.2

Certified by: 
Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

File # : BT47610

Lab Sample ID : MW - 4

GC Column Length : 105 M

GC Column ID : 0.53 mm

Method Code: 8260

Concentration Units : ug / L (PPB)

[illegible]

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
 Location: **MW - 5**
 File #: **BT47611**

Collected: **09/09/98** 10:40 **BATCO**
 Received: **09/09/98** 12:00 **CMB**
 Analyzed: **09/15/98** 18:03 **CRR**
 Date Time Analyst

Sample Type: **Water**
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT47611)			MATRIX SPIKE DUP (BT47611)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	6.00	ND			ND			46.3	250.0	92.6	49.3	250.0	98.6
Benzene	71-43-2	6.00	ND			ND			49.8	250.0	99.6	52.8	250.0	105.6
Trichloroethene	79-01-6	7.50	ND			ND			47.7	250.0	95.4	50.9	250.0	101.8
Toluene	108-88-3	7.50	ND			ND			45.0	250.0	90.0	46.0	250.0	92.0
Chlorobenzene	108-90-7	6.00	ND			ND			50.8	250.0	101.6	55.6	250.0	111.2
Bromobenzene	108-86-1	7.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	6.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	6.00	ND			ND			ND			ND		
Bromoform	75-25-2	7.50	ND			ND			ND			ND		
Bromomethane	74-83-9	3.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	4.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	7.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	9.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	6.00	ND			ND			ND			ND		
Chloroethane	75-00-3	9.00	ND			ND			ND			ND		
Chloroform	66-67-3	6.00	ND			ND			ND			ND		
Chloromethane	74-87-3	9.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	9.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	4.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	6.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	12.0	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	6.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	7.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	7.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	6.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	6.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	6.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	6.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	7.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	7.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	7.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	7.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	6.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	6.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	6.00	ND			ND			ND			ND		
1,1,3-Dichloropropene	10061-02-6	6.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	7.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	6.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	7.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	6.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	7.50	ND			ND			ND			ND		
Naphthalene	91-20-3	9.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	4.50	ND			ND			ND			ND		

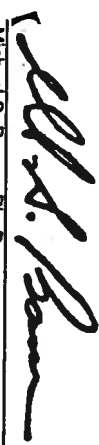
BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**
Location: **MW - 5**
File #: **BT47611**

Collected: 09/09/98 10:40 **BATCO**
Received: 09/09/98 12:00 **CMB**
Analysis: 09/15/98 18:03 **CRR**
Date _____ Time _____ Analyst _____

Sample Type: Water
Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ng	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ng	% Recovery
Styrene	100-42-5	6.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	7.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	7.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	6.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	6.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	7.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	6.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	7.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	6.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	4.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	6.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	9.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	7.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	12.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Dibromofluoromethane	1868-53-7		48.6	250.0	97.2	50.8	250.0	101.6	45.2	250.0	90.4	46.8	250.0	93.6
Toluene-d8	2037-26-5		50.5	250.0	101.0	50.2	250.0	100.4	48.4	250.0	96.8	48.5	250.0	97.0
4-Bromofluorobenzene	460-00-4		47.8	250.0	95.6	49.0	250.0	98.0	47.3	250.0	94.6	47.6	250.0	95.2

Certified by: 
Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT47611

Sample Matrix : Water

Lab Sample ID : MW - 5

Sample Collection Date : 09/09/98

Sample Analysis Date : 09/15/98

GC Column Length : 105 M

Dilution Factor : 3

GC Column ID : 0.53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Method Code: 8260

Number TICs Found : 0

Concentration Units : ug / L (PPB)

[illegible]

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules
Location: MW-4
File #: BT47610

Collected: 9/9/98 10:40 BATCO
Extracted: 9/11/98 10:00 JMR
Analyzed: 9/23/98 21:58 JMR
Date Time Analyst

Sample Type: Water
Extraction Method: 3510b
Analysis Method: 625

Compound Name	CAS Number	MDL (ppb)	BT47610			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ng/L)	Amount (ug)	% Recovery	Detected Amount (ng/L)	Amount (ug)	% Recovery
Phenol	108-95-2	5.2	ND			ND			86.20	150.00	57.47	52.26	150.00	34.84
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND		
2-Chlorophenol	95-57-8	5.7	ND			ND			90.27	150.00	60.18	96.49	150.00	64.33
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			51.53	100.00	51.53	52.76	100.00	52.76
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	67-72-1	8.7	ND			ND			ND			ND		
Hexachloroethane	106-44-5	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			96.07	100.00	96.07	103.92	100.00	103.92
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			65.09	100.00	65.09	65.17	100.00	65.17
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	9.4	ND			ND			97.92	150.00	65.28	102.69	150.00	68.46
Hexachlorobutadiene	87-68-3	7.5	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			77.62	100.00	77.62	77.38	100.00	77.38
Acenaphthene	83-32-9	8.3	ND			ND			ND			ND		
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			55.36	150.00	36.91	29.55	150.00	19.70
4-Nitrophenol	100-02-7	8.6	ND			ND			ND			ND		
Dibenzofuran	132-64-9	8.4	ND			ND			90.82	100.00	90.82	88.26	100.00	88.26
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND		
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules		Collection: 9/9/98		10:40		BATCO		Sample Type: Water						
Location: MW-4		Extraction: 9/11/98		10:00		JMR		Extraction Method: 3510b						
File #: BT47610		Analysis: 9/23/98		21:58		JMR		Analysis Method: 625						
		Date		Time		Analyst								
Compound Name	CAS Number	MDL ug/L (ppb)	BT47610			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/L in the extract	Spike		Detected Amount ng/L in the extract	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.05	150.00	61.37	87.48	150.00	58.32
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			97.94	100.00	97.94	97.94	100.00	97.94
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidine	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzofluoranthene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			2.32	200.00	1.16	44.09	200.00	22.05	78.90	200.00	39.45	78.15	200.00	39.08
Phenol-d5			6.92	200.00	3.46	34.73	200.00	17.37	84.15	200.00	42.08	51.24	200.00	25.62
Nitrobenzene-d5			58.10	100.00	58.10	35.10	100.00	35.10	56.65	100.00	56.65	69.42	100.00	69.42
2-Fluorobiphenyl			63.20	100.00	63.20	43.15	100.00	43.15	62.51	100.00	62.51	69.83	100.00	69.83
2,4,6-Tribromophenol			1.06	200.00	0.53	74.72	200.00	37.36	109.00	200.00	54.50	197.79	200.00	98.90
Terphenyl-d14			92.05	100.00	92.05	48.09	100.00	48.09	79.86	100.00	79.86	77.00	100.00	77.00

* = Results Outside of QA Limits due to matrix interference

Certified by:

Mitchell S. Bonner, Ph. D.
Bonner Analytical Testing Company

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Number TICs Found: 1*

Concentration Units: ug / L (ppb)

* Only SW 846 Method 8270 analytes listed as TICs.

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules			Collected: 9/9/98			10:40			BATCO			Sample Type: Water			
Location: MW-5			Extracted: 9/11/98			10:00			JMR			Extraction Method: 3510b			
File #: BT47611			Analyzed: 9/23/98			23:47			JMR			Analysis Method: 625			
			Date			Time			Analyst						
Compound Name	CAS Number	MDL ug/L (ppb)	Detected Amount ug/L (ppb)	BT47611			BLANK			Matrix Spike			Matrix Spike Duplicate		
				Amount ug	% Recovery	Amount ug/L (ppb)	Amount ug	% Recovery	Amount ng/ul in the extract	Amount ug	% Recovery	Amount ng/ul in the extract	Amount ug	% Recovery	
Phenol	108-95-2	5.2	ND			ND			86.20	150.00	57.47	52.26	150.00	34.84	
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND			ND			
2-Chlorophenol	95-57-8	5.7	ND			90.27			90.27	150.00	60.18	96.49	150.00	64.33	
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND			
1,4-Dichlorobenzene	106-46-7	6.1	ND			51.53			51.53	100.00	51.53	52.76	100.00	52.76	
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND			
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND			
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND			
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND			
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND			
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND			
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			96.07			96.07	100.00	96.07	103.92	100.00	103.92	
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND			
Isophorone	78-59-1	9.2	ND			ND			ND			ND			
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND			
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND			
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND			
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND			
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND			
1,2,4-Trichlorobenzene	120-82-1	8.4	ND			65.09			65.09	100.00	65.09	65.17	100.00	65.17	
Naphthalene	91-20-3	8.5	ND			ND			ND			ND			
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND			
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND			
4-Chloro-3-methylphenol	59-50-7	7.7	ND			97.92			97.92	150.00	65.28	102.69	150.00	68.46	
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND			
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND			
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND			
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND			
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND			
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND			
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND			
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND			
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND			
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND			
Acenaphthene	83-32-9	8.3	ND			77.62			77.62	100.00	77.62	77.38	100.00	77.38	
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND			
4-Nitrophenol	100-02-7	8.6	ND			55.36			55.36	150.00	36.91	29.55	150.00	19.70	
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND			
2,4-Dinitrotoluene	121-14-2	8.3	ND			90.82			90.82	100.00	90.82	88.26	100.00	88.26	
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND			
Fluorene	86-73-7	9.8	ND			ND			ND			ND			
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND			
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND			
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND			

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules
Location: MW-5
File #: BT47611

Collection: 9/9/98 10:40 BATCO
Extraction: 9/11/98 10:00 JMR
Analysis: 9/23/98 23:47 JMR
Date Time Analyst

Sample Type: Water
Extraction Method: 3510b
Analysis Method: 625

Compound Name	CAS Number	MDL (ug/L)	BT47611			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			92.05	150.00	61.37	87.48	150.00	58.32
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	11.70			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			97.94	100.00	97.94	97.94	100.00	97.94
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzol(e)anthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzol(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzol(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzol(a)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indenol(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzol(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzol(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
2-Fluorophenol			81.54	200.00	40.77	44.09	200.00	22.05	78.90	200.00	39.45	78.15	200.00	39.08
Phenol-d5			68.75	200.00	34.38	34.73	200.00	17.37	84.15	200.00	42.08	51.24	200.00	25.62
Nitrobenzene-d5			76.97	100.00	76.97	35.10	100.00	35.10	56.65	100.00	56.65	69.42	100.00	69.42
2-Fluorobiphenyl			96.93	100.00	96.93	43.15	100.00	43.15	62.51	100.00	62.51	69.83	100.00	69.83
2,4,6-Trichlorophenol			182.04	200.00	91.02	74.72	200.00	37.36	109.00	200.00	54.50	197.79	200.00	98.90
Terphenyl-d14			120.20	100.00	120.20	48.09	100.00	48.09	79.86	100.00	79.86	77.00	100.00	77.00

* = Results Outside of QA Limits due to matrix interference

Certified by:

Michael S. Bonner, Ph. D.
Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 268-7084 Fax: (601) 268-7084

CLIENT: HERCULES

DATE: 09-25-98

LOCATION: HATTIESBURG, MS

Monitoring Well #1 Elevation TOC: 174.690	Time	pH - S.U.	Temp °F	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 21.20'	0950	6.52	78	55	1165	
Depth to Water TOC: 11.60' GW Elevation TOC: 162.490	0954	6.26	75	115	460	
Well Depth BLS: 18.035'	0957	6.18	73	70	9.73	
Quantity per Volume 1.6 Gal.	0959	6.14	73	65	7.82	
LNAPL - No DNAPL - No	1002	6.08	74	50	13.69	

Monitoring Well #6 Elevation TOC: 174.677	Time	pH - S.U.	Temp °F	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 24.20'	1028	6.56	82	165	853	
Depth to Water TOC: 10.00' GW Elevation TOC: 164.077	1031	6.26	82	170	1236	
Well Depth BLS: 21.39'	1036	5.96	80	175	851	
Quantity per Volume 2.4 Gal	1040	5.98	79	160	535	
LNAPL - No DNAPL - No	1044	5.87	76	155	1068	

Monitoring Well #2 Elevation TOC: 160.088	Time	pH - S.U.	Temp °F	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 20.00'	1205	6.43	75	85	49	
Depth to Water TOC: 9.20' GW Elevation TOC: 150.888	1210	5.48	75	75	394	
Well Depth BLS: 17.01'	1213	5.25	73	78	401	
Quantity per Volume 1.8	1215	4.96	75	75	313	
LNAPL - No DNAPL - No	1218	4.94	74	80	434	

* Turbidity exceeds 5 NTU; Remove 5 additional well volumes

Well Volume = 0.17 x Water column in Feet

LNAPL - Light Non Aqueous Phase Liquid

DNAPL - Dense Non Aqueous Phase Liquid

TOC - Top of Casing (North Side)

BLS - Below Land Surface

BONNER ANALYTICAL TESTING COMPANY

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 268-7084 Fax: (601) 268-7084

CLIENT: HERCULES

DATE: 09-25-98

LOCATION: HATTIESBURG, MS

Monitoring Well #3 Elevation TOC: 159.996	Time	pH - S.U.	Temp °F	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 21.60'	1230	6.76	76	112	13.18	
Depth to Water TOC: 8.50' GW Elevation TOC: 151.496	1235	5.94	75	110	660	
Well Depth BLS: 18.550'	1238	5.70	75	100	470	
Quantity per Volume 2.22 Gal	1242	5.64	76	110	466	
LNAPL - No DNAPL - No	1245	5.67	75	110	652	

Monitoring Well #5 Elevation TOC: 161.069	Time	pH - S.U.	Temp °F	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 18.40'	1018	5.98	78	1100	817	
Depth to Water TOC: 11.60' GW Elevation TOC: 149.468	1021	6.14	77	1200	939	
Well Depth BLS: 15.175'	1025	6.25	79	1200	932	
Quantity per Volume 1.15 Gal	1028	6.24	77	1200	1054	
LNAPL - No DNAPL - No	1031	6.23	77	1150	482	

Monitoring Well #4 Elevation TOC: 159.760	Time	pH - S.U.	Temp °F	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 18.95'	1100	6.04	77	500	102.8	
Depth to Water TOC: 12.00' GW Elevation TOC: 147.760	1104	5.99	76	500	787	
Well Depth BLS: 15.855'	1109	5.91	76	500	789	
Quantity per Volume 1.18 Gal	1112	5.95	76	500	633	
LNAPL - No DNAPL - No	1116	6.10	76	500	670	

* Turbidity exceeds 5 NTU; Remove 5 additional well volumes

Well Volume = 0.17 x Water column in Feet

LNAPL - Light Non Aqueous Phase Liquid

DNAPL - Dense Non Aqueous Phase Liquid

TOC - Top of Casing (North Side)

BLS - Below Land Surface



APPENDIX III

CHAIN OF CUSTODY

September 9 & 25, 1998

YOUR COMPANY NAME Hercules
YOUR COMPANY ADDRESS _____

Phone: 2703 Oak Grove Road
(601) 264-2854 Hattiesburg, MS 39402 (601) 268-7084
Fax: 268-7084

"Testing Your World for a Safer Tomorrow"



NAME OF PERSON TO CONTACT _____
CONTACT PERSON'S PHONE: _____

YOUR PROJECT NO. _____ YOUR PO. # _____ YOUR PROJECT NAME: 3rd Quad Area

YOUR SAMPLE DESCRIPTION: _____ DATE _____ TIME _____ MATRIX _____

Trip Black 9-9-98 L

Trip Black 9-9-98 L

Trip Black 9-9-98 L

Equipment Black 9-9-98 1010 L

Equipment Black 9-9-98 1010 L

Equipment Black 9-9-98 1010 L

Equipment Black 9-9-98 1040 L

Equipment Black 9-9-98 1040 L

Equipment Black 9-9-98 1048 L

4

PARAMETERS FOR ANALYSIS

NUMBER OF CONTAINERS
PRESERVATIONS

5 REMARKS

Turnaround Time

Detection Limits
Special Limits Required
Yes No

BT47608

BT47608

BT47605

BT47605

BT47605

BT47605

BT47611

RELINQUISHED BY: (Signature) _____ DATE _____ TIME _____ RECEIVED BY: (Signature) _____

6 METHOD OF SHIPMENT 9-9-98 1200 SHIPPED BY: (Signature) _____ COURIER (Signature) _____ RECEIVED FOR BATCO BY: (Signature) _____ DATE/TIME _____

SAMPLE REMAINDER DISPOSAL

RETURN SAMPLE REMAINDER TO CLIENT VIA _____ (SOM) SHIPPING CHARGES MAY BE INCURRED

REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS (Signature) _____

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A M. ADDITIONAL CHARGE OF \$2500 PER SAMPLE WILL BE ASSESSED FOR OSAL. (Date) _____

REVISION
DATE
2/94

YOUR COMPANY NAME: Hercules
YOUR COMPANY ADDRESS: _____

BONNER ANALYTICAL TESTING COMPANY
Phone: 2703 Oak Grove Road
(601) 264-2854 Hattiesburg, MS 39402 (601) 268-7084
Fax: _____

"Testing Your World for a Safer Tomorrow"



NAME OF PERSON TO CONTACT: _____
CONTACT PERSON'S PHONE: _____

YOUR PROJECT NO.: _____ YOUR P.O.# _____ YOUR PROJECT NAME: _____

YOUR SAMPLE DESCRIPTION: _____ DATE _____ TIME _____ MATRIX _____

Mw-4 9-9-98 L

Mw-4 9-9-98 L

Mw-4 9-9-98 L

3

RELINQUISHED BY: _____ DATE _____ TIME _____ RECEIVED BY: _____ (Signature)

6 28 Dec 98 9-9-98/12 00

SHIPPED BY: _____ (Signature)

COURIER _____ (Signature)

RELINQUISHED BY: _____ (Signature)

RECEIVED FOR BATCO BY: _____ (Signature)

DATE/TIME

PARAMETERS FOR ANALYSIS

4

BUA
Metals
UoA

NUMBER OF CONTAINERS _____ PRESERVATIONS _____

5 REMARKS

Turnaround Time

Detection Limits
Special Limits Required
Yes No

BT47610

SAMPLE REMAINDER DISPOSAL

7 ☐ RETURN SAMPLE REMAINDER TO CLIENT VIA _____ (SOME SHIPPING CHARGES MAY BE INCURRED)

☐ I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS _____ (Signature)

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF \$2500 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL.

REVISION
DATE
2/94

YOUR COMPANY NAME Hercules
YOUR COMPANY ADDRESS _____

NAME OF PERSON TO CONTACT _____
CONTACT PERSON'S PHONE _____

YOUR PROJECT NO. _____ YOUR PROJECT NAME: 3rd Quarter

YOUR SAMPLE DESCRIPTION: _____

DATE _____ TIME _____ MATRIX _____

Trip Blank 9-25-98 0800 W ✓

Equipment Blank 9-25-98 0940 W ✓

MW-1 9-25-98 1006 W ✓

MW-6 9-25-98 1046 W ✓

MW-2 9-25-98 1220 W ✓

MW-3 9-25-98 1250 W ✓

RELINQUISHED BY
(Signature)

DATE _____ TIME _____

RECEIVED BY
(Signature)

METHOD OF SHIPMENT

9-25-98 1330

SHIPPED BY:
(Signature)

COURIER
(Signature)

RELINQUISHED BY:
(Signature)

DATE _____ TIME _____

RECEIVED BY:
(Signature)

RECEIVED FOR BATCO BY:
(Signature)

DATE/TIME

PARAMETERS FOR ANALYSIS

NUMBER OF CONTAINERS _____
PRESERVATIONS _____

Detection Limits
Special Limits Required
Yes No

Turnaround Time

REMARKS

BONNER ANALYTICAL TESTING COMPANY
Phone: 2703 Oak Grove Road
(601) 264-2854 Hattiesburg, MS 39402
Fax: (601) 268-7084
"Testing Your World for a Safer Tomorrow"



SAMPLE REMAINDER DISPOSAL

RETURN SAMPLE REMAINDER TO CLIENT VIA _____
(SOME SHIPPING CHARGES MAY BE INCURRED)

REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF \$2500 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL

REVISION DATE 2/94

APPENDIX IV

DECEMBER, 1997

&

JUNE, 1998 REPORTS