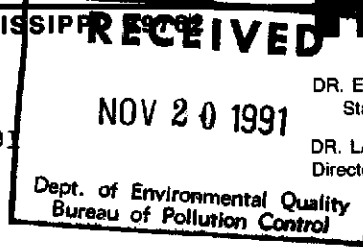


MISSISSIPPI STATE UNIVERSITY


**MISSISSIPPI
STATE CHEMICAL LABORATORY**

BOX CR - MISSISSIPPI STATE, MISSISSIPPI

TELEPHONE (601) 325-3324

DR. EARL G. ALLEY
State ChemistDR. LARRY G. LANE
Director, IAS Division

November 18, 1991

Analysis No. 826,332-335

Analysis of Soil/Sediment

Received on 10-21-91

Address P.O. Box 10385 Jackson, MS 39209

Marked: Gulf State Creosote,
Hattiesburgfrom MS Office of Pollution Control
ATTN: Jim Hardage**RESULTS:**MSCL No.MS DEQ-OPC Identification

826,332

GS-SB-01, Background Subsurface Soil, Pine St. & Ryan Motors

826,333

GS-SD-01, Background Sediment, Gordons Creek Trailer Park

826,334

GS-SD-02, Downgradient Sediment, Gordons Creek East of Ditch

826,335

GS-SB-02, Subsurface Soil, Between two ditches

Results from our gc/mass spec analyses of the above sediment samples for Semivolatile Organic Compounds on the Target Compound List are presented in attached reports.

Analytical Costs

4 ABNs By gc/ms @ \$400 = \$1600

State Chemist

PLEASE GIVE NUMBER WHEN REFERRING TO THIS ANALYSIS

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR SOILS

MSCL ANALYSIS NO. 826,332

MARKED Gulf State Creosote

ANALYSIS OF Soil

GS-SR-01

COMPOUNDS	MQL*	Micro g/Kg
Phenol	330	ND
bis(2-Chloroethyl)ether	330	ND
2-Chlorophenol	330	ND
1,3-Dichlorobenzene	330	ND
1,4-Dichlorobenzene	330	ND
Benzyl alcohol	330	ND
1,2-Dichlorobenzene	330	ND
2-Methylphene	330	ND
bis(2-Chloroisopropyl)ether	330	ND
4-Methylphenol	330	ND
N-Nitroso-di-n-dipropylamine	330	ND
Hexachloroethane	330	ND
Nitrobenzene	330	ND
Isophorone	330	ND
2-Nitrophenol	330	ND
2,4-Dimethylphenol	330	ND
Benzoic acid	1600	ND
bis(2-Chloroethoxy)methane	330	ND
2,4-Dichlorophenol	330	ND
1,2,4-Trichlorobenzene	330	ND
Naphthalene	330	ND
4-Chloroaniline	330	ND
Hexachlorobutadiene	330	ND
4-Chloro-3-methylphenol	330	ND
2-Methylnaphthalene	330	ND
Hexachlorocyclopentadiene	330	ND
2,4,6-Trichlorophenol	330	ND
2,4,5-Trichlorophenol	1600	ND
2-Chloronaphthalene	330	ND
2-Nitroaniline	1600	ND
Dimethylphthalate	330	ND
Acenaphthylene	330	ND
2,6-Dinitrotoluene	330	ND
3-Nitroaniline	1600	ND
Acenaphthene	330	ND

COMPOUNDS	MQL*	Micro g/Kg
2,4-Dinitrophenol	1600	ND
4-Nitrophenol	1600	ND
Dibenzofuran	330	ND
2,4-Dinitrotoluene	330	ND
Diethylphthalate	330	ND
4-Chlorophenyl-phenyl ether	330	ND
Fluorene	330	ND
4-Nitroaniline	1600	ND
4,6-Dinitro-2-methylphenol	1600	ND
N-nitrosodiphenylamine	330	ND
4-Bromophenyl-phenylether	330	ND
Hexachlorobenzene	330	ND
Pentachlorophenol	1600	ND
Phenanthrene	330	ND
Anthracene	330	ND
Di-n-butylphthalate	330	ND
Fluoranthene	330	ND
Pyrene	330	ND
Butylbenzylphthalate	330	ND
3,3'-Dichlorobenzidine	660	ND
Benzo(a)anthracene	330	ND
Chrysene	330	ND
bis(2-Ethylhexyl)phthalate	330	ND
Di-n-octylphthalate	330	ND
Benzo(b)fluoranthene	330	ND
Benzo(k)fluoranthene	330	ND
Benzo(a)pyrene	330	ND
Indeno(1,2,3-cd)pyrene	330	ND
Dibenz(a,h)anthracene	330	ND
Benzo(g,h,i)perylene	330	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

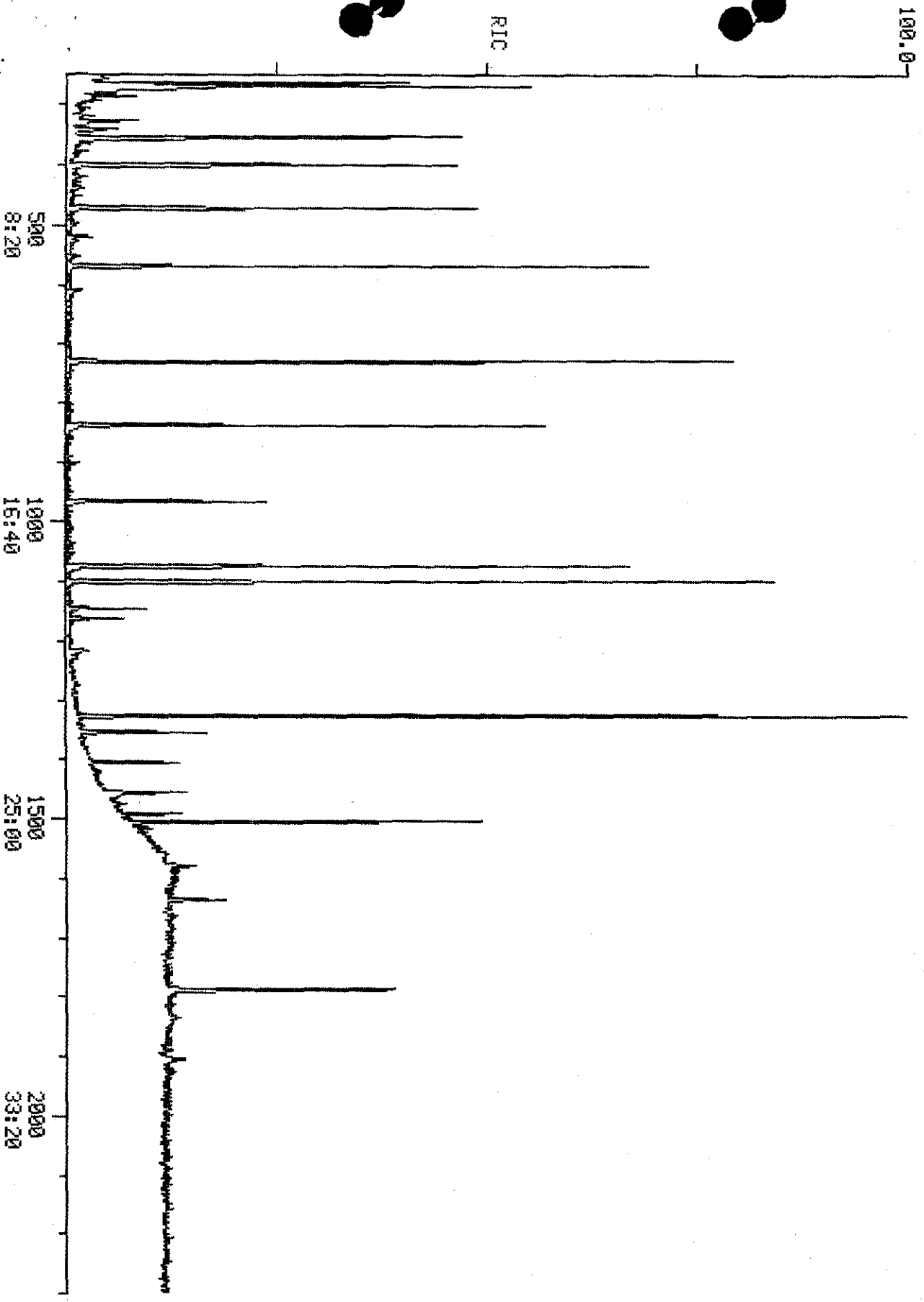
SURROGATES	RECOVERY (%)
2-Fluorophenol	100
Phenol-d5	110
Nitrobenzene-d5	88
2-Fluorobiphenyl	104
2,4,6-Tribromophenol	107
p-Terphenyl-d14	119

Multiply MQL's by _____

- No peaks above 40% of internal standard were observed.
- Peaks above 40% of internal standard were not identified.
- Peaks above 40% internal standard not on EPA Appendix IX.
- Additional peaks were observed but not examined.

Carl L. Colley
 State Chemist

RIC 11/05/91 22:13:00 DATA: 826332ABN #1 SCANS 250 TO 2300
CALLI: 826378ABN #2
SAMPLE: GULF STATES CRESOTE SOIL MARKED CS-SB-01, 10G TO 1.0 ML
CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
RANGE: G 1, 2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



86272.

PROCEDURE: TCA
 DATA FILE: 826332ABN
 REFERENCE: EX11

DIAGNOSTIC REPORT

11/06/91 8:54:37

NAME LIST: EX INITIALIZATION OPTION: 2 PROCESSING OPTION: 3
 REPORT: RTEX2

< ---- STANDARDS ---- >				> --- PLUS UNKNOWN --- <				> - LIST NAMES - <	
PROC	USED	POSS	RMS	PROC	USED	POSS	RMS	STANDARD/UNKNOWN	
6	6	1	168	12	12	1	131	RTEX2/EX2	
2	2	1	0	14	2	1	0	RTEX1/EX3	
2	2	1	0	15	2	1	0	RTEX4/EX4	
3	3	1	0	12	3	1	0	RTEX5/EX5	
3	3	1	0	13	3	1	0	RTEX5/EX6	
4	4	1	184	13	6	1	131	RTEX7/EX7	
3	3	1	211	9	5	1	166	RTEX8/EX8	
3	3	1	211	10	3	1	211	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 16 FOUND

< COMPOUND >		----- SEARCH -----							> SAT >		----- CHRO -----		
NO	LIB ENTRY	REF	PRED	SEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS	
1	EX	1	-403	401	400	-1	1	992	150	400	.	1	
2	EX	2	-573	570	570	.	1	995	136	570	.	1	
3	EX	3	-843	839	840	1	1	997	164	840	.	1	
4	EX	4	-1078	1074	1075	1	1	980	188	1075	.	1	
5	EX	5	-1510	1504	1506	2	1	964	240	1506	.	1	
6	EX	6	-1798	1791	1789	-2	1	996	264	1789	.	1	
7	EX	7	-273	271	270	-1	1	995	112	270	.	1	
8	EX	8	-357	355	354	-1	1	987	99	354	.	1	
9	EX	9	-476	473	473	.	1	995	82	473	.	1	
10	EX	10	-733	730	731	1	1	998	172	731	.	1	
11	EX	11	-969	965	966	1	1	993	330	966	.	1	
12	EX	12	-1332	1327	1328	1	1	997	244	1328	.	1	
13	EX	13	-358	355	.	.	.	.	94	356	.	1
14	EX	14	-371	368	.	.	.	.	93	.	.	.
15	EX	15	-382	379	.	.	.	.	128	.	.	.
16	EX	16	-399	396	.	.	.	.	146	.	.	.
17	EX	17	-405	402	.	.	.	.	146	.	.	.
18	EX	18	-418	415	.	.	.	.	108	.	.	.
19	EX	19	-428	425	.	.	.	.	146	.	.	.
20	EX	20	-429	426	.	.	.	.	108	.	.	.
21	EX	21	-435	432	.	.	.	.	45	430	.	1
22	EX	22	-447	444	.	.	.	.	108	.	.	.
23	EX	23	-453	450	.	.	.	.	70	452	.	1
24	EX	24	-467	464	.	.	.	.	117	.	.	.
25	EX	25	-478	475	.	.	.	.	77	.	.	.
26	EX	26	-507	504	.	.	.	.	82	.	.	.
27	EX	27	-521	518	.	.	.	.	139	.	.	.
28	EX	28	-519	516	.	.	.	.	122	.	.	.
29	EX	29	-532	529	.	.	.	.	105	.	.	.
30	EX	30	-533	530	.	.	.	.	93	.	.	.
31	EX	31	-551	548	.	.	.	.	162	.	.	.
32	EX	32	-565	562	.	.	.	.	180	.	.	.
33	EX	33	-576	573	.	.	.	.	128	573	.	1
34	EX	34	-584	581	.	.	.	.	127	.	.	.
35	EX	35	-597	594	.	.	.	.	225	.	.	.
36	EX	36	-651	648	.	.	.	.	107	.	.	.
37	EX	37	-677	674	.	.	.	.	142	.	.	.
38	EX	38	-709	706	.	.	.	.	237	.	.	.
39	EX	39	-722	719	.	.	.	.	198	.	.	.
40	EX	40	-728	725	.	.	.	.	198	.	.	.
41	EX	41	-752	749	.	.	.	.	162	.	.	.
42	EX	42	-773	770	.	.	.	.	65	.	.	.
43	EX	43	-801	798	.	.	.	.	163	.	.	.
44	EX	44	-814	811	.	.	.	.	145	.	.	.

DATA: 826332ABN.TI

11/05/91 22:13:00

SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SB-01, 10G TO 1.0 ML

CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

RESP. FAC. FROM AVERAGE OF WHOLE . RL

- | No | NAME |
|----|------------------------------------|
| 1 | D-4 DICHLOROBENZENE (INTERNAL STD) |
| 2 | D-8 NAPHTHALENE(INTERNAL STD) |
| 3 | D-10 ACENAPHTHENE (INTERNAL STD.) |
| 4 | D-10 PHENANTHRENE (INTERNAL STD) |
| 5 | D-12 CHRYSENE (INTERNAL STD) |
| 6 | D-12 PERLYENE(INTERNAL STD) |
| 7 | 2-FLUOROPHENOL(SURR.) |
| 8 | D-5 PHENOL(SURR.) |
| 9 | D-5 NITROBENZENE (SURR.) |
| 10 | 2-FLUOROBIPHENYL (SURR.) |
| 11 | 2,4,6- TRIBROMOPHENOL(SURR.) |
| 12 | D-14 TERPHENYL(SURR.) |
| 13 | PHENOL |
| 14 | BIS(2-CHLOROETHYL)ETHER |
| 15 | 2-CHLOROPHENOL |
| 16 | M-DICHLOROBENZENE |
| 17 | P-DICLOROBENZENE |
| 18 | BENZYL ALCOHOL |
| 19 | O-DICLOROBENZENE |
| 20 | 2-METHYL PHENOL |
| 21 | BIS(2-CHLORO ISOPROPYL)ETHER |
| 22 | 4-METHYL PHENOL |
| 23 | N-NITROSODIPROPYLAMINE |
| 24 | HEXACHLOROETHANE |
| 25 | NITROBENZENE |
| 26 | ISOPHORONE |
| 27 | 2-NITROPHENOL |
| 28 | 2,4-DIMETHYLPHENOL |
| 29 | BENZOIC ACID |
| 30 | BIS(2-CHLOROETHOXY) METHANE |
| 31 | 2,4-DICHLOROPHENOL |
| 32 | 1,2,4-TRICHLOROBENZENE |
| 33 | NAPHTHALENE |
| 34 | 4-CHLOROANILINE |
| 35 | HEXACHLOROBUTADIENE |
| 36 | 4-CHLORO-3-METHYPHENOL |
| 37 | 2-METHYLNAPHTHALENE |
| 38 | HEXACHLOROCYCLOPENTADIENE |
| 39 | 2,4,6-TRICHLOROPHENOL |
| 40 | 2,4,5-TRICHLOROPHENOL |
| 41 | 2-CHLORONAPHTHALENE |
| 42 | 2-NITROANILINE |
| 43 | DIMETHYLPHTHALATE |
| 44 | 2,6-DINITROTOULENE |
| 45 | ACENAPHTHYLENE |
| 46 | 3-NITROANILINE |
| 47 | ACENAPHTHENE |
| 48 | 2,4-DINITROPHENOL |
| 49 | 4-NITROPHENOL |
| 50 | DIBENZOFURAN |

SCAN	TIME	AREA	HEIGHT	AMOUNT	NAME
400	6:40	33670.		20.000 NG/UL	D-4 DICHLOOROBENZENE (INTERNAL
570	9:30	69385.		20.000 NG/UL	D-8 NAPHTH... (INTERNAL STD
840	14:00	30368.		20.000 NG/UL	D-10 ACEN... (INTERNAL
1075	17:55	56479.		20.000 NG/UL	D-10 PHENANTHRENE (INTERNAL
1506	25:06	33764.		20.000 NG/UL	D-12 CHRYSENE (INTERNAL STD)
1789	29:49	35153.		20.000 NG/UL	D-12 PERLYENE (INTERNAL STD)
270	4:30	34516.		25.001 NG/UL	2-FLUOROPHENOL (SURRE.) 100
354	5:54	42228.		27.524 NG/UL	D-5 PHENOL (SURRE.) 110
473	7:53	33051.		21.892 NG/UL	D-5 NITROBENZENE (SURRE.) 88
731	12:11	57923.		26.044 NG/UL	2-FLUOROBIPHENYL (SURRE.) 104
966	16:06	6910.		26.749 NG/UL	2,4,6- TRIBROMOPHENOL (SURRE.) 107
1328	22:08	69611.		29.646 NG/UL	D-14 TERPHENYL (SURRE.) 119
356	5:56	478.		0.295 NG/UL	PHENOL BK

NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND

430	7:10	153.		0.064 NG/UL	BIS(2-CHLORO ISOPROPYL)ETHER
452	7:32	205.		0.214 NG/UL	N-NITROSODIPROPYLAMINE

NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND

573	9:33	287.		0.079 NG/UL	NAPHTHALENE B/C
-----	------	------	--	-------------	-----------------

NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND

QUANTITATION REPORT FILE: 826332ABN

DATA: 826332ABN.TI
11/05/91 22:13:00
SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SB-01, 10G TO 1.0 ML
CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
FORMULA: 0 INSTRUMENT: 4500 WEIGHT: 0.000
SUBMITTED BY: OPC ANALYST: SMATHERS ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
RESP. FAC. FROM AVERAGE OF WHOLE . RL

No NAME
E1 2,4-DINITROBENZENE

- 51 2,4-DINITROTOLUENE
- 52 DIETHYLPHTHALATE
- 53 FLUORENE
- 54 4-CHLOROPHENYL PHENYL ETHER
- 55 4-NITROANILINE
- 56 4,6-DINITRO-2-METHYLPHENOL
- 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
- 58 4-BROMOPHENYL PHENYL ETHER
- 59 HEXACHLOROBENZENE
- 60 PENTACHLOROPHENOL
- 61 PHENANTHRENE
- 62 ANTHRACENE
- 63 DI-N-BUTYLPHTHALATE
- 64 FLUOROANTHENE
- 65 PYRENE
- 66 BUTYL BENZYLPHTHALATE
- 67 BENZ(A)ANTHRACENE
- 68 CHRYSENE
- 69 BIS(2-ETHYLHEXYL)PHTHALATE
- 70 3,3'-DICHLOROBENZIDENE
- 71 DI-N-OCTYLPHTHALATE
- 72 BENZO(B)FLUOROANTHENE
- 73 BENZO(K)FLUOROANTHENE
- 74 BENZO(A)PYRENE
- 75 INDENO(1,2,3-CD)PYRENE
- 76 DIBENZO(A,H)ANTHRACENE
- 77 BENZO(CHI)PERYLENE

SCAN	TIME	AREA (HGT)	AMOUNT	NAME
NOT FOUND				
907	15:07	703.	0.326 NG/UL	DIETHYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1053	17:33	365.	0.867 NG/UL	PENTACHLOROPHENOL
1078	17:58	309.	0.098 NG/UL	PHENANTHRENE <i>BK</i>
NOT FOUND				
1163	19:23	7669.	1.886 NG/UL	DI-N-BUTYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
1406	23:26	436.	0.325 NG/UL	BUTYL BENZYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
1493	24:53	4246.	2.208 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE <i>BK</i>
NOT FOUND				
1589	26:29	1122.	0.285 NG/UL	DI-N-OCTYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				

TCA FINISHED, 16 FOUND
 FINISHED AT: 11/06/91 9:01:38

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR SOILS

MSCL ANALYSIS NO. 826,333

MARKED Gulf State Creosote

ANALYSIS OF Soil

GS-SD-01

COMPOUNDS	MQL*	Micro g/Kg
Phenol	330	ND
bis(2-Chloroethyl)ether	330	ND
2-Chlorophenol	330	ND
1,3-Dichlorobenzene	330	ND
1,4-Dichlorobenzene	330	ND
Benzyl alcohol	330	ND
1,2-Dichlorobenzene	330	ND
2-Methylphene	330	ND
bis(2-Chloroisopropyl)ether	330	ND
4-Methylphenol	330	ND
N-Nitroso-di-n-dipropylamine	330	ND
Hexachloroethane	330	ND
Nitrobenzene	330	ND
Isophorone	330	ND
2-Nitrophenol	330	ND
2,4-Dimethylphenol	330	ND
Benzoic acid	1600	ND
bis(2-Chloroethoxy)methane	330	ND
2,4-Dichlorophenol	330	ND
1,2,4-Trichlorobenzene	330	ND
Naphthalene	330	ND
4-Chloroaniline	330	ND
Hexachlorobutadiene	330	ND
4-Chloro-3-methylphenol	330	ND
2-Methylnaphthalene	330	ND
Hexachlorocyclopentadiene	330	ND
2,4,6-Trichlorophenol	330	ND
2,4,5-Trichlorophenol	1600	ND
2-Chloronaphthalene	330	ND
2-Nitroaniline	1600	ND
Dimethylphthalate	330	ND
Acenaphthylene	330	ND
2,6-Dinitrotoluene	330	ND
3-Nitroaniline	1600	ND
Acenaphthene	330	ND

COMPOUNDS	MQL*	Micro g/Kg
2,4-Dinitrophenol	1600	ND
4-Nitrophenol	1600	ND
Dibenzofuran	330	ND
2,4-Dinitrotoluene	330	ND
Diethylphthalate	330	ND
4-Chlorophenyl-phenyl ether	330	ND
Fluorene	330	ND
4-Nitroaniline	1600	ND
4,6-Dinitro-2-methylphenol	1600	ND
N-nitrosodiphenylamine	330	ND
4-Bromophenyl-phenylether	330	ND
Hexachlorobenzene	330	ND
Pentachlorophenol	1600	ND
Phenanthrene	330	470
Anthracene	330	ND
Di-n-butylphthalate	330	ND
Fluoranthene	330	700
Pyrene	330	470
Butylbenzylphthalate	330	ND
3,3'-Dichlorobenzidine	660	ND
Benzo(a)anthracene	330	Trace
Chrysene	330	Trace
bis(2-Ethylhexyl)phthalate	330	ND
Di-n-octylphthalate	330	ND
Benzo(b)fluoranthene	330	ND
Benzo(k)fluoranthene	330	ND
Benzo(a)pyrene	330	ND
Indeno(1,2,3-cd)pyrene	330	ND
Dibenz(a,h)anthracene	330	ND
Benzo(g,h,i)perylene	330	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	72
Phenol-d5	92
Nitrobenzene-d5	43
2-Fluorobipheny	78
2,4,6-Tribromophenol	88
p-Terphenyl-d14	92

Multiply MQL's by _____

- _____ No peaks above 40% of internal standard were observed.
- 1 _____ Peaks above 40% of internal standard were not identified.
- 1 _____ Peaks above 40% internal standard not on EPA Appendix IX.
- _____ Additional peaks were observed but not examined.

Carl H. Alley

 State Chemist/

- 51 2,4-DINITROTOLENE
- 52 DIETHYLPHTHALATE
- 53 FLUORENE
- 54 4-CHLOROPHENYL PHENYL ETHER
- 55 4-NITROANILINE
- 56 4,6-DINITRO-2-METHYLPHENOL
- 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
- 58 4-BROMOPHENYL PHENYL ETHER
- 59 HEXACHLOROBENZENE
- 60 PENTACHLOROPHENOL
- 61 PHENANTHRENE
- 62 ANTHRACENE
- 63 DI-N-BUTYLPHTHALATE
- 64 FLUOROANTHENE
- 65 PYRENE
- 66 BUTYL BENZYLPHTHALATE
- 67 BENZ(A)ANTHRACENE
- 68 CHRYSENE
- 69 BIS(2-ETHYLHEXYL)PHTHALATE
- 70 3,3'-DICHLOROBENZIDENE
- 71 DI-N-OCTYLPHTHALATE
- 72 BENZO(B)FLUOROANTHENE
- 73 BENZO(K)FLUOROANTHENE
- 74 BENZO(A)PYRENE
- 75 INDENO(1,2,3-CD)PYRENE
- 76 DIBENZO(A,H)ANTHRACENE
- 77 BENZO(GHI)PERYLENE

$$\frac{4.72 \text{ ng/ul} \times 100 \text{ ul}}{100} = 4.72 \text{ ng/g} = 470 \text{ ng/kg}$$

$$\frac{70 \times 1000}{10} = 700 \text{ ng/kg}$$

$$\frac{4.66 \times 1000}{10} = 466 = 470 \text{ ng/kg}$$

SCAN	TIME	AREA (HGT)	AMOUNT	NAME
NOT FOUND				
905	15:05	341.	0.179 NG/UL	DIETHYLPHTHALATE BK
923	15:23	597.	0.308 NG/UL	FLUORENE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1077	17:57	12809.	4.716 NG/UL	PHENANTHRENE
1084	18:04	1732.	0.628 NG/UL	ANTHRACENE
1162	19:22	4329.	1.239 NG/UL	DI-N-BUTYLPHTHALATE BK
1271	21:11	20717.	7.009 NG/UL	FLUOROANTHENE
1308	21:48	12719.	4.661 NG/UL	PYRENE
1404	23:24	491.	0.345 NG/UL	BUTYL BENZYLPHTHALATE BK
1501	25:01	3132.	1.321 NG/UL	BENZ(A)ANTHRACENE Trace
1508	25:08	2632.	1.245 NG/UL	CHRYSENE Trace
1491	24:51	7069.	3.463 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE BK
NOT FOUND				
1589	26:29	369.	0.081 NG/UL	DI-N-OCTYLPHTHALATE BK
1698	28:18	1639.	0.577 NG/UL	BENZO(B)FLUOROANTHENE
1702	28:22	1519.	0.545 NG/UL	BENZO(K)FLUOROANTHENE
1774	29:34	1259.	0.482 NG/UL	BENZO(A)PYRENE
NOT FOUND				
NOT FOUND				
NOT FOUND				

TCA FINISHED, 25 FOUND
 FINISHED AT: 11/06/91 9:17:11

SLAB	TIME	AREA (HEIGHT)	AMOUNT	NAME
400	6:40	30855.	20.000 NG/UL	D-4 DICHLORENE (INTERNAL
569	9:29	62134.	20.000 NG/UL	D-8 NAPHTHALENE (INTERNAL STD
838	13:58	26796.	20.000 NG/UL	D-10 ACENAPHTHENE (INTERNAL
1073	17:53	48542.	20.000 NG/UL	D-10 PHENANTHRENE (INTERNAL
1504	25:04	35839.	20.000 NG/UL	D-12 CHRYSENE (INTERNAL STD)
1788	29:48	40581.	20.000 NG/UL	D-12 PERLYENE (INTERNAL STD)
270	4:30	22759.	17.989 NG/UL	2-FLUOROPHENOL (SURR.) 72
353	5:53	32440.	23.073 NG/UL	D-5 PHENOL (SURR.) 92
472	7:52	14525.	10.744 NG/UL	D-5 NITROBENZENE (SURR.) 43
729	12:09	38378.	19.556 NG/UL	2-FLUOROBIPHENYL (SURR.) 78
965	16:05	5007.	21.966 NG/UL	2,4,6-TRIBROMOPHENOL (SURR.) 88
1327	22:07	57030.	22.882 NG/UL	D-14 TERPHENYL (SURR.) 92
355	5:55	356.	0.240 NG/UL	PHENOL B/K

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

451 7:31 305. 0.348 NG/UL N-NITROSODIPROPYLAMINE

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

572 9:32 232. 0.071 NG/UL NAPHTHALENE B/K

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

673 11:13 172. 0.080 NG/UL 2-METHYLNAPHTHALENE

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

843 14:03 233. 0.140 NG/UL ACENAPHTHENE

NOT FOUND
 NOT FOUND

868 14:28 409. 0.173 NG/UL DIBENZOFURAN

QUANTITATION REPORT FILE: 826333ABN

DATA: 826333ABN.TI
 11/05/91 23:53:00
 SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-01, 10G. TO 1.0 ML
 CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
 FORMULA: 0 INSTRUMENT: 4500 WEIGHT: 0.000
 SUBMITTED BY: OPC ANALYST: SMATHERS ACCT. NO.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
 RESP. FAC. FROM AVERAGE OF WHOLE . RL

No NAME
 51 2,4-DINITROTOLUENE

DATA: 826333ABN.TI

11/05/91 23:53:00

SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-01, 10G. TO 1.0 ML

CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

RESP. FAC. FROM AVERAGE OF WHOLE . RL

No	NAME
1	D-4 DICHLOROBENZENE (INTERNAL STD)
2	D-8 NAPHTHALENE (INTERNAL STD)
3	D-10 ACENAPHTHENE (INTERNAL STD.)
4	D-10 PHENANTHRENE (INTERNAL STD)
5	D-12 CHRYSENE (INTERNAL STD)
6	D-12 PERLYENE (INTERNAL STD)
7	2-FLUOROPHENOL (SURR.)
8	D-5 PHENOL (SURR.)
9	D-5 NITROBENZENE (SURR.)
10	2-FLUOROBIPHENYL (SURR.)
11	2, 4, 6- TRIBROMOPHENOL (SURR.)
12	D-14 TERPHENYL (SURR.)
13	PHENOL
14	BIS(2-CHLOROETHYL)ETHER
15	2-CHLOROPHENOL
16	M-DICHLOROBENZENE
17	P-DICHLOROBENZENE
18	BENZYL ALCOHOL
19	O-DICHLOROBENZENE
20	2-METHYL PHENOL
21	BIS(2-CHLORO ISOPROPYL)ETHER
22	4-METHYL PHENOL
23	N-NITROSODIPROPYLAMINE
24	HEXACHLOROETHANE
25	NITROBENZENE
26	ISOPHORONE
27	2-NITROPHENOL
28	2, 4-DIMETHYLPHENOL
29	BENZOIC ACID
30	BIS(2-CHLOROETHOXY) METHANE
31	2, 4-DICHLOROPHENOL
32	1, 2, 4-TRICHLOROBENZENE
33	NAPHTHALENE
34	4-CHLOROANILINE
35	HEXACHLOROBUTADIENE
36	4-CHLORO-3-METHYLPHENOL
37	2-METHYLNAPHTHALENE
38	HEXACHLOROCYCLOPENTADIENE
39	2, 4, 6-TRICHLOROPHENOL
40	2, 4, 5-TRICHLOROPHENOL
41	2-CHLORONAPHTHALENE
42	2-NITROANILINE
43	DIMETHYLPHTHALATE
44	2, 6-DINITROTOULENE
45	ACENAPHTHYLENE
46	3-NITROANILINE
47	ACENAPHTHENE
48	2, 4-DINITROPHENOL
49	4-NITROPHENOL
50	DIBENZOFURAN

45	EX	45	-820	816					152			
46	EX	46	-838	834					65			
47	EX	47	-848	844					154	843		1
48	EX	48	-853	849					184			
49	EX	49	-860	856					139			
50	EX	50	-872	868	868		1	996	168	868		1
51	EX	51	-876	872					165			
52	EX	52	-910	906					149	905		1
53	EX	53	-928	924					166	923		1
54	EX	54	-923	919					204			
55	EX	55	-937	933					138			
56	EX	82	-940	936					198			
57	EX	57	-944	940					169			
58	EX	59	-1001	997					248			
59	EX	60	-1028	1024					284			
60	EX	61	-1056	1051					266			
61	EX	62	-1082	1077	1077		2	998	178	1077		1
62	EX	63	-1089	1084	1084		2	999	178	1084		1
63	EX	64	-1167	1162	1162		1	998	149	1162		1
64	EX	65	-1276	1270	1271	1	1	985	202	1271		1
65	EX	66	-1314	1309	1308	-1	1	997	202	1308		1
66	EX	67	-1409	1403	1404	1	1	993	149	1404		1
67	EX	68	-1506	1500	1501	1	2	999	228	1501		1
68	EX	69	-1514	1508	1508		2	997	228	1508		1
69	EX	70	-1497	1491	1491		1	996	149	1491		1
70	EX	81	-1500	1494					252			
71	EX	71	-1595	1587					149	1589		1
72	EX	72	1707	1698	1698		2	952	252	1698		1
73	EX	73	-1712	1703	1702	-1	2	937	252	1702		1
74	EX	74	-1784	1774	1774		1	915	252	1774		1
75	EX	75	-2118	2106					276			
76	EX	76	-2117	2105					278			
77	EX	77	-2217	2204					276			

PROCEDURE: TCA
 DATA FILE: 826333ABN
 REFERENCE: EX11
 NAME LIST: EX
 REPORT: RTEX2

DIAGNOSTIC REPORT

11/06/91 9:10:10

INITIALIZATION OPTION: 2 PROCESSING OPTION: 3

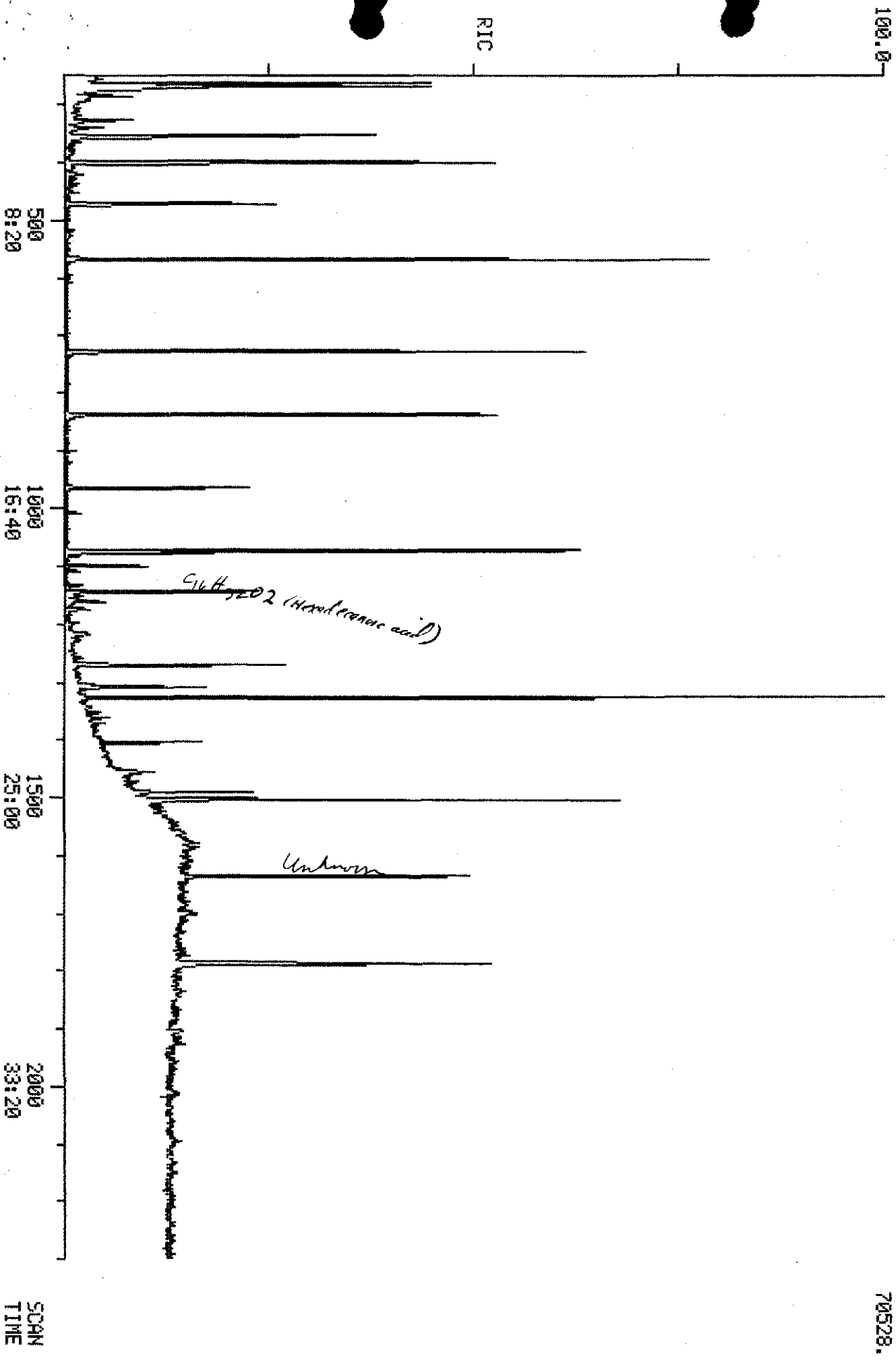
< ---- STANDARDS ---- >				>< --- PLUS UNKNOWN --- ><				>< - LIST NAMES - >	
PROC	USED	POSS	RMS	PROC	USED	POSS	RMS	STANDARD/UNKNOWN	
6	6	1	111	12	12	1	102	RTEX2/EX2	
2	2	1	0	14	2	1	0	RTEX1/EX3	
2	2	1	0	15	2	1	0	RTEX4/EX4	
3	3	1	44	12	3	1	44	RTEX5/EX5	
3	3	1	44	13	4	1	40	RTEX5/EX6	
4	4	1	123	13	8	4	83	RTEX7/EX7	
3	3	1	162	9	8	4	119	RTEX8/EX8	
3	3	1	162	10	6	4	99	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 25 FOUND

< COMPOUND >		----- SEARCH -----							>< SAT ><		----- CHRO -----		
NO	LIB ENTRY	REF	PRED	SEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS	
1	EX	1	-403	400	400	.	1	999	150	400	.	1	
2	EX	2	-573	570	569	-1	1	993	136	569	.	1	
3	EX	3	-843	838	839	1	1	998	164	838	-1	1	
4	EX	4	-1078	1072	1073	1	1	965	188	1073	.	1	
5	EX	5	-1510	1503	1504	1	1	952	240	1504	.	1	
6	EX	6	-1798	1789	1788	-1	1	994	264	1788	.	1	
7	EX	7	-273	270	270	.	1	995	112	270	.	1	
8	EX	8	-357	354	353	-1	1	987	99	353	.	1	
9	EX	9	-476	473	472	-1	1	993	82	472	.	1	
10	EX	10	-733	729	729	.	1	999	172	729	.	1	
11	EX	11	-969	964	965	1	1	997	330	965	.	1	
12	EX	12	-1332	1326	1327	1	1	995	244	1327	.	1	
13	EX	13	-358	355	.	.	.	.	94	355	.	1
14	EX	14	-371	368	.	.	.	.	93	.	.	.
15	EX	15	-382	379	.	.	.	.	128	.	.	.
16	EX	16	-399	396	.	.	.	.	146	.	.	.
17	EX	17	-405	402	.	.	.	.	146	.	.	.
18	EX	18	-418	415	.	.	.	.	108	.	.	.
19	EX	19	-428	425	.	.	.	.	146	.	.	.
20	EX	20	-429	426	.	.	.	.	108	.	.	.
21	EX	21	-435	432	.	.	.	.	45	.	.	.
22	EX	22	-447	444	.	.	.	.	108	.	.	.
23	EX	23	-453	450	.	.	.	.	70	451	.	1
24	EX	24	-467	464	.	.	.	.	117	.	.	.
25	EX	25	-478	474	.	.	.	.	77	.	.	.
26	EX	26	-507	503	.	.	.	.	82	.	.	.
27	EX	27	-521	517	.	.	.	.	139	.	.	.
28	EX	28	-519	515	.	.	.	.	122	.	.	.
29	EX	29	-532	528	.	.	.	.	105	.	.	.
30	EX	30	-533	529	.	.	.	.	93	.	.	.
31	EX	31	-551	547	.	.	.	.	162	.	.	.
32	EX	32	-565	561	.	.	.	.	180	.	.	.
33	EX	33	-576	572	.	.	.	.	128	572	.	1
34	EX	34	-584	580	.	.	.	.	127	.	.	.
35	EX	35	-597	593	.	.	.	.	225	.	.	.
36	EX	36	-651	647	.	.	.	.	107	.	.	.
37	EX	37	-677	673	.	.	.	.	142	673	.	1
38	EX	38	-709	705	.	.	.	.	237	.	.	.
39	EX	39	-722	718	.	.	.	.	198	.	.	.
40	EX	40	-728	724	.	.	.	.	198	.	.	.
41	EX	41	-752	748	.	.	.	.	162	.	.	.
42	EX	42	-773	769	.	.	.	.	65	.	.	.
43	EX	43	-801	797	.	.	.	.	163	.	.	.
44	EX	44	-814	810	.	.	.	.	115	.	.	.

RIC
11/05/91 23:53:00
SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-5D-01, 10G. TO 1.0 ML
CONDOS.: DE5C 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
RANGE: G 1,2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BRSE: U 20, 3
DATA: 826333A8B1 #1
CALLI: 826334A8B #2
SCANS 250 TO 2300

70528.



TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR SOILS

MSCL ANALYSIS NO. 826,334

MARKED Gulf State Creosote

ANALYSIS OF Soils

GS-SD-02

COMPOUNDS	MQL*	Micro g/Kg
Phenol	330	ND
bis(2-Chloroethyl)ether	330	ND
2-Chlorophenol	330	ND
1,3-Dichlorobenzene	330	ND
1,4-Dichlorobenzene	330	ND
Benzyl alcohol	330	ND
1,2-Dichlorobenzene	330	ND
2-Methylphene	330	ND
bis(2-Chloroisopropyl)ether	330	ND
4-Methylphenol	330	ND
N-Nitroso-di-n-dipropylamine	330	ND
Hexachloroethane	330	ND
Nitrobenzene	330	ND
Isophorone	330	ND
2-Nitrophenol	330	ND
2,4-Dimethylphenol	330	ND
Benzoic acid	1600	ND
bis(2-Chloroethoxy)methane	330	ND
2,4-Dichlorophenol	330	ND
1,2,4-Trichlorobenzene	330	ND
Naphthalene	330	240,000
4-Chloroaniline	330	ND
Hexachlorobutadiene	330	ND
4-Chloro-3-methylphenol	330	ND
2-Methylnaphthalene	330	240,000
Hexachlorocyclopentadiene	330	ND
2,4,6-Trichlorophenol	330	ND
2,4,5-Trichlorophenol	1600	ND
2-Chloronaphthalene	330	ND
2-Nitroaniline	1600	ND
Dimethylphthalate	330	ND
Acenaphthylene	330	Trace
2,6-Dinitrotoluene	330	ND
3-Nitroaniline	1600	ND
Acenaphthene	330	370,000

COMPOUNDS	MQL*	Micro g/Kg
2,4-Dinitrophenol	1600	ND
4-Nitrophenol	1600	ND
Dibenzofuran	330	400,000
2,4-Dinitrotoluene	330	ND
Diethylphthalate	330	ND
4-Chlorophenyl-phenyl ether	330	ND
Fluorene	330	550,000
4-Nitroaniline	1600	ND
4,6-Dinitro-2-methylphenol	1600	ND
N-nitrosodiphenylamine	330	ND
4-Bromophenyl-phenylether	330	ND
Hexachlorobenzene	330	ND
Pentachlorophenol	1600	ND
Phenanthrene *	330	18,000,000
Anthracene	330	220,000
Di-n-butylphthalate	330	ND
Fluoranthene	330	770,000
Pyrene	330	490,000
Butylbenzylphthalate	330	ND
3,3'-Dichlorobenzidine	660	ND
Benzo(a)anthracene	330	170,000
Chrysene	330	160,000
bis(2-Ethylhexyl)phthalate	330	ND
Di-n-octylphthalate	330	ND
Benzo(b)fluoranthene	330	58,000
Benzo(k)fluoranthene	330	72,000
Benzo(a)pyrene	330	60,000
Indeno(1,2,3-cd)pyrene	330	Trace
Dibenz(a,h)anthracene	330	ND
Benzo(g,h,i)perylene	330	Trace

*ND = None Detected

MQL = Minimum Quantifiable Level

*Estimated value

Multiply MQL's by 100

SURROGATES	RECOVERY (%)
2-Fluorophenol	
Phenol-d5	
Nitrobenzene-d5	
2-Fluorobipheny	
2,4,6-Tribromophenol	
p-Terphenyl-d14	

NA= Had to dilute out of Linear Range

No peaks above 40% of internal standard were observed.

1 Peaks above 40% of internal standard were not identified.

19 Peaks above 40% internal standard. compounds appear to be PAHs not on EPA Appendix IX.

X Additional peaks were observed but not examined.

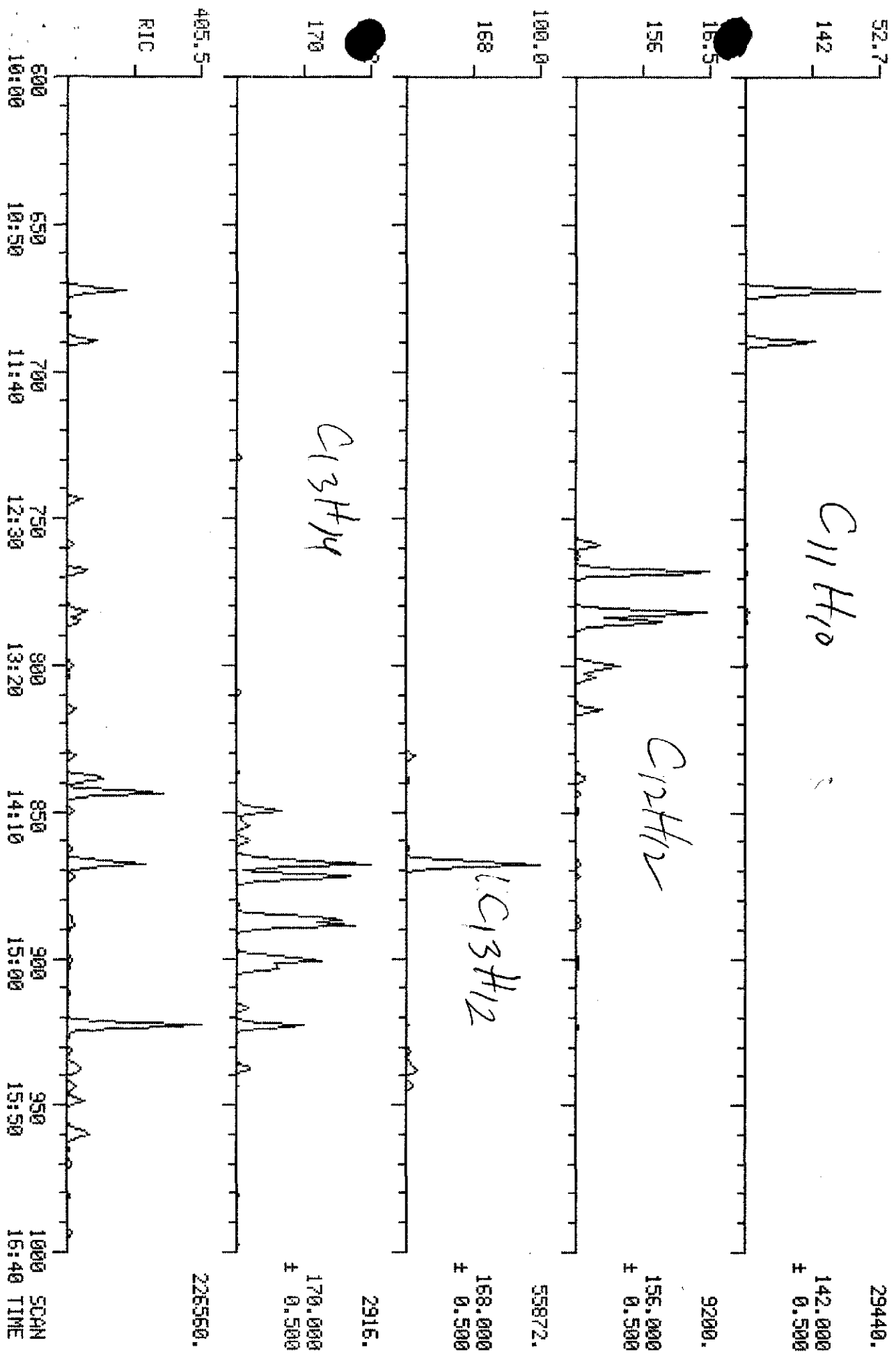
PAHs = Polynuclear Aromatic Hydrocarbons

Carl L. Alley

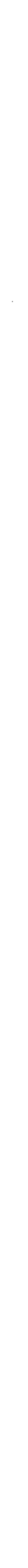
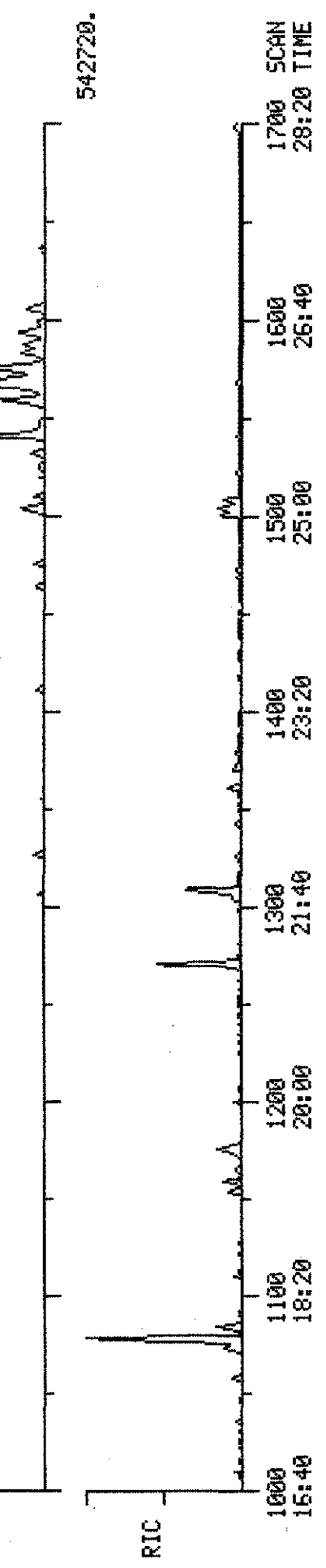
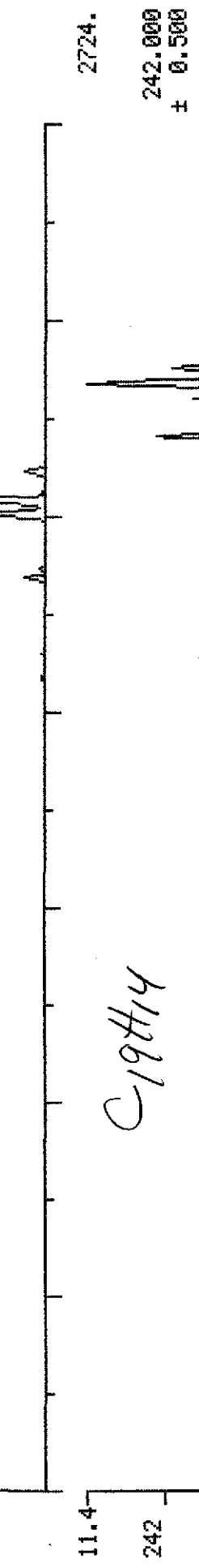
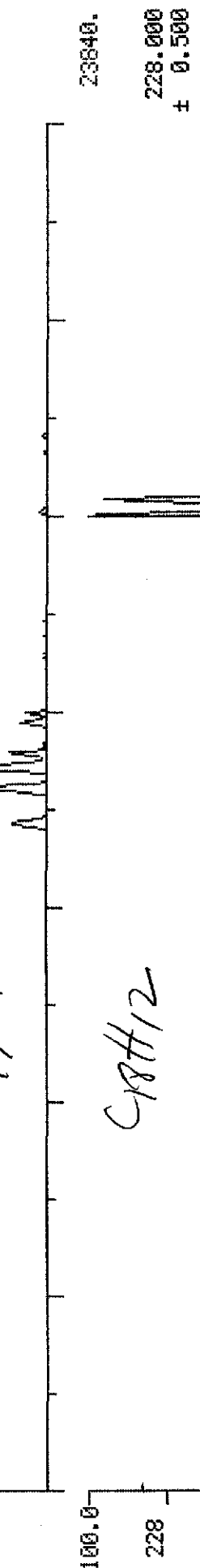
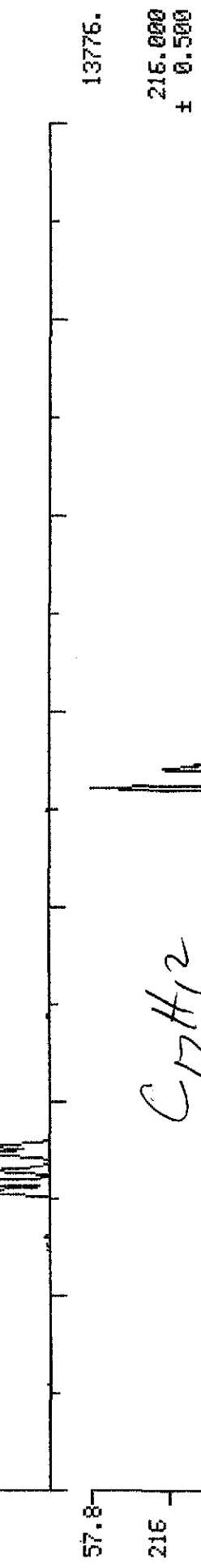
State Chemist

RIC+MASS CHROMATOGRAMS
 11/05/91 23:05:00
 SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-02,0.1G TO 1.0 ML
 COND.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
 RANGE: G 1,2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

PAH-15

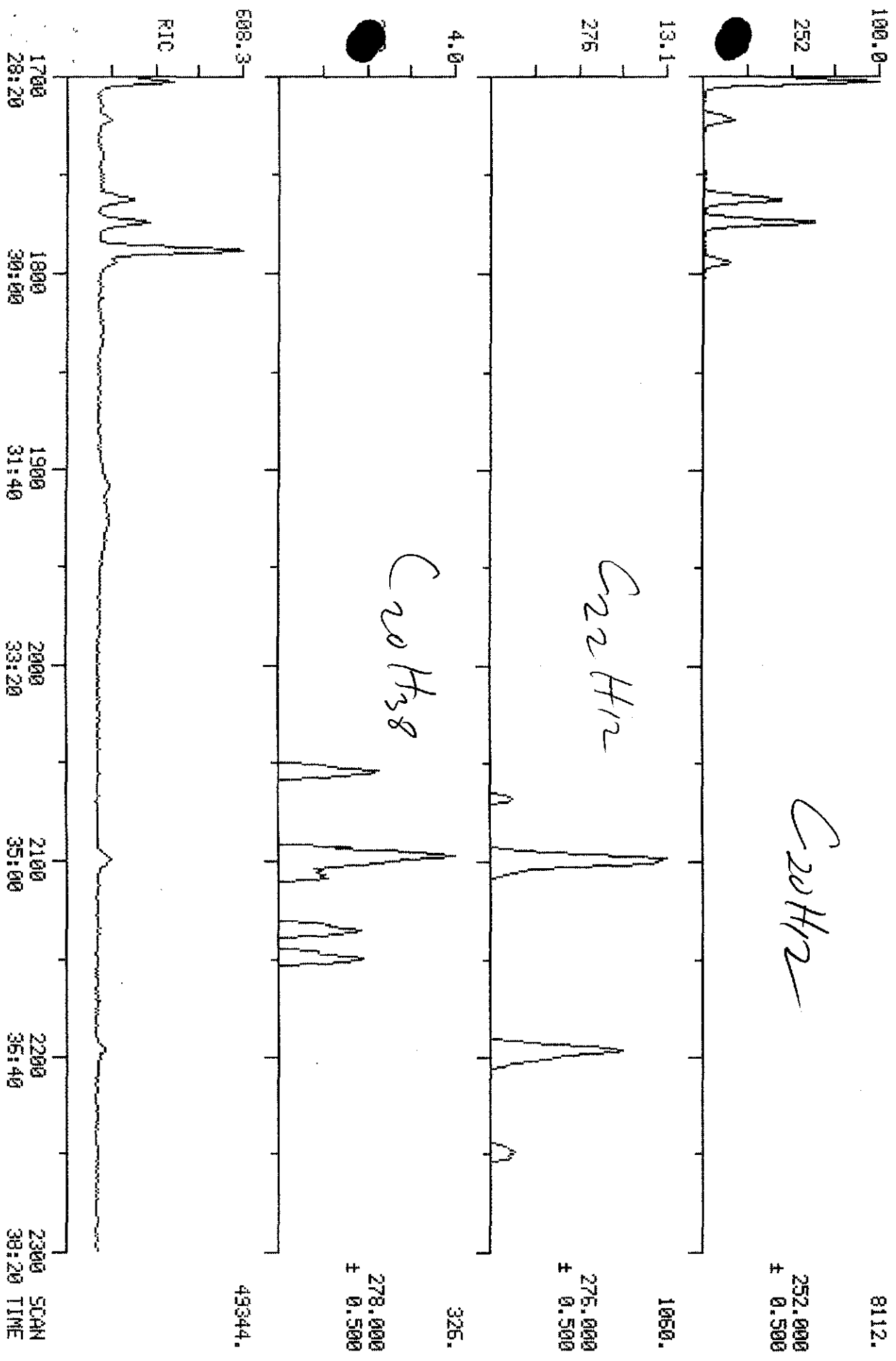


RIC-MASS CHROMATOGRAMS
 11/05/91 23:05:00
 DATA: 826334ABN #831
 CALI: 826334ABN #2
 SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-02.0.1G TO 1.0 ML
 CONDS.: DESC IM, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
 RANGE: G 1.2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



RIC+MASS CHROMATOGRAMS
 11/05/91 23:05:00
 SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-02,0.1G TO 1.0 ML
 COND5.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
 RANGE: G 1,2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BRSE: U 20, 3

DATA: 8253344BN #831
 CALI: 8253344BN #2
 SCANS 1700 TO 2300

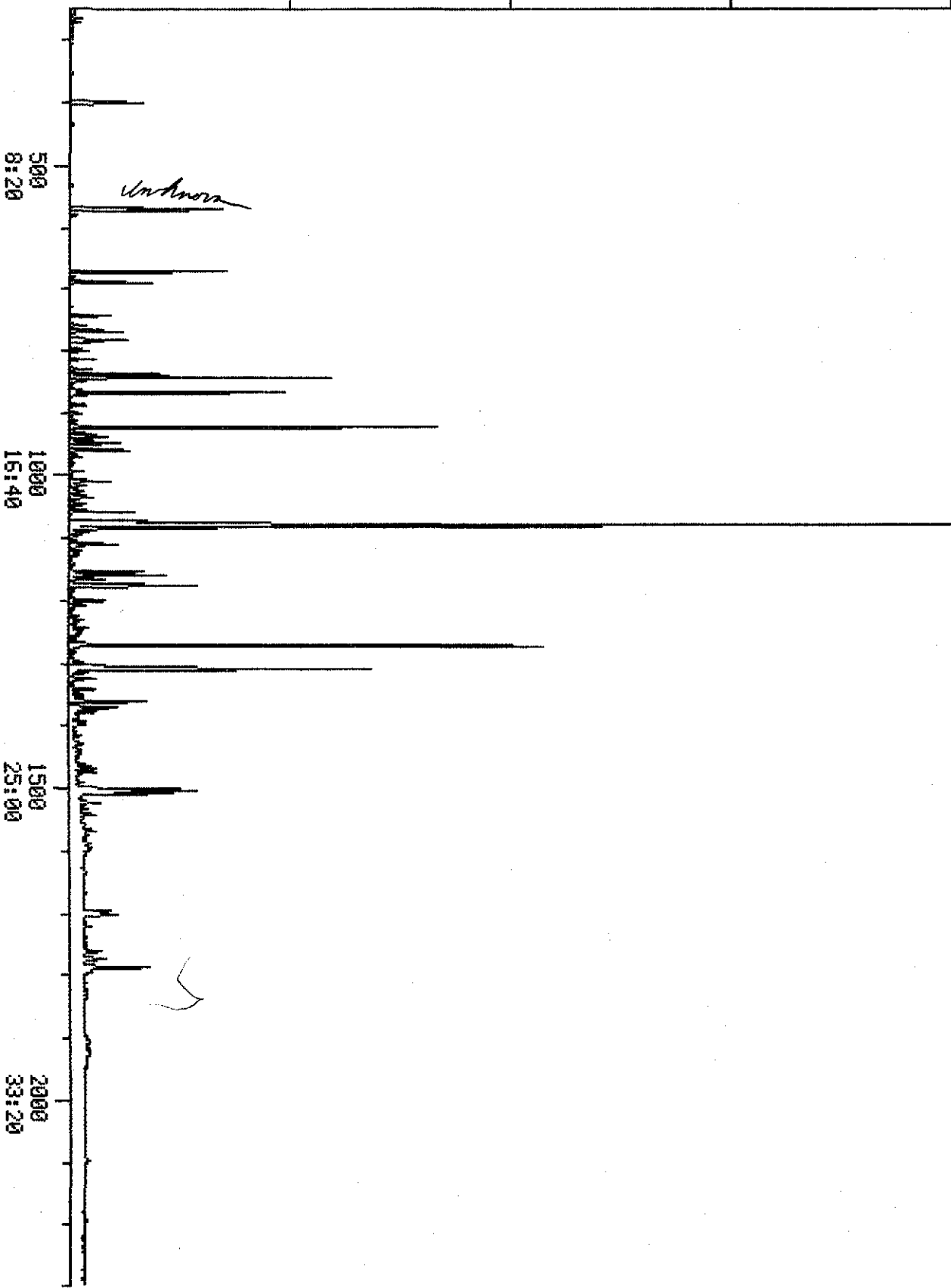


RIC
11/05/91 23:05:00
SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-02, 0.1g TO 1.0 ML
CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
RANGE: G 1,2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: 826334ABN #1
CALL: 826332ABN #2
SCANS 250 TO 2300

100.0

RIC



500
8:20

1000
16:40

1500
25:00

2000
33:20

SCAN
TIME

542720.

PROCEDURE: TCA
 DATA FILE: B26334ABN
 REFERENCE: EX11
 NAME LIST: EX
 REPORT: RTEX2

DIAGNOSTIC REPORT

11/06/91 9:02:18

INITIALIZATION OPTION: 2 PROCESSING OPTION: 3

< ---- STANDARDS ---- >				< --- PLUS UNKNOWN --- >				< - LIST NAMES - >	
PROC	USED	POSS	RMS	PROC	USED	POSS	RMS	STANDARD/UNKNOWN	
6	6	1	157	12	9	1	125	RTEX2/EX2	
2	2	1	0	14	2	1	0	RTEX1/EX3	
2	2	1	0	15	4	1	0	RTEX4/EX4	
3	3	1	0	12	4	1	61	RTEX5/EX5	
3	3	1	0	13	6	1	45	RTEX5/EX6	
4	4	1	184	13	8	4	129	RTEX7/EX7	
3	3	1	211	9	7	8	133	RTEX8/EX8	
3	3	1	211	10	9	4	249	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 29 FOUND

< COMPOUND >		< ----- SEARCH ----- >							< SAT >		< ----- CHRO ----- >		
NO	LIB	ENTRY	REF	PRED	SEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS
1	EX	1	-403	400	400	.	1	996	.	150	400	.	1
2	EX	2	-573	570	569	-1	1	995	.	136	569	.	1
3	EX	3	-843	839	839	.	1	994	.	164	839	.	1
4	EX	4	-1078	1073	1074	1	1	972	.	188	1074	.	1
5	EX	5	-1510	1503	1505	2	1	959	.	240	1505	.	1
6	EX	6	-1798	1790	1788	-2	1	996	.	264	1788	.	1
7	EX	7	-273	271	271	.	1	994	.	112	271	.	1
8	EX	8	-357	355	.	.	.	.	.	99	354	.	1
9	EX	9	-476	473	.	.	.	.	.	82	472	.	1
10	EX	10	-733	729	729	.	1	998	.	172	729	.	1
11	EX	11	-969	964	.	.	.	.	.	330	.	.	.
12	EX	12	-1332	1326	1327	1	1	996	.	244	1327	.	1
13	EX	13	-358	355	.	.	.	.	.	94	.	.	.
14	EX	14	-371	368	.	.	.	.	.	93	.	.	.
15	EX	15	-382	379	.	.	.	.	.	128	.	.	.
16	EX	16	-399	396	.	.	.	.	.	146	.	.	.
17	EX	17	-405	402	.	.	.	.	.	146	.	.	.
18	EX	18	-418	415	.	.	.	.	.	108	.	.	.
19	EX	19	-428	425	.	.	.	.	.	146	.	.	.
20	EX	20	-429	426	.	.	.	.	.	108	.	.	.
21	EX	21	-435	432	.	.	.	.	.	45	.	.	.
22	EX	22	-447	444	.	.	.	.	.	108	.	.	.
23	EX	23	-453	450	.	.	.	.	.	70	.	.	.
24	EX	24	-467	464	.	.	.	.	.	117	.	.	.
25	EX	25	-478	474	.	.	.	.	.	77	.	.	.
26	EX	26	-507	503	.	.	.	.	.	82	.	.	.
27	EX	27	-521	517	.	.	.	.	.	139	.	.	.
28	EX	28	-519	515	.	.	.	.	.	122	.	.	.
29	EX	29	-532	528	.	.	.	.	.	105	.	.	.
30	EX	30	-533	529	.	.	.	.	.	93	.	.	.
31	EX	31	-551	547	.	.	.	.	.	162	.	.	.
32	EX	32	-565	561	.	.	.	.	.	180	.	.	.
33	EX	33	-576	572	572	.	1	990	.	128	572	.	1
34	EX	34	-584	580	.	.	.	.	.	127	.	.	.
35	EX	35	-597	593	.	.	.	.	.	225	.	.	.
36	EX	36	-651	647	.	.	.	.	.	107	.	.	.
37	EX	37	-677	673	673	.	1	998	.	142	673	.	1
38	EX	38	-709	705	.	.	.	.	.	237	.	.	.
39	EX	39	-722	718	.	.	.	.	.	198	.	.	.
40	EX	40	-728	724	.	.	.	.	.	198	.	.	.
41	EX	41	-752	748	.	.	.	.	.	162	.	.	.
42	EX	42	-773	769	.	.	.	.	.	65	768	.	1
43	EX	43	-801	797	.	.	.	.	.	163	.	.	.
44	EX	44	-814	810	.	.	.	.	.	145	.	.	.

44	EX	44	-817	810					150			
45	EX	45	-820	816	815	-1	1	991	152	815		1
46	EX	46	-838	834					65			
47	EX	47	-848	844	844		1	968	154	844		1
48	EX	48	-853	849					184			
49	EX	49	-860	856					139			
50	EX	50	-872	868	868		1	1000	168	868		1
51	EX	51	-876	872					165	873		1
52	EX	52	-910	906					149			
53	EX	53	-928	924	923	-1	1	995	166	923		1
54	EX	54	-923	919					204			
55	EX	55	-937	933					138			
56	EX	82	-940	936					198			
57	EX	57	-944	941					169			
58	EX	59	-1001	998					248			
59	EX	60	-1028	1024					284			
60	EX	61	-1056	1052					266			
61	EX	62	-1082	1078	1079	1	2	996	-1	178	1079	1
62	EX	63	-1089	1085	1085		2	995		178	1085	1
63	EX	64	-1167	1163	1162	-1	1	939		149	1162	1
64	EX	65	-1276	1271	1272	1	1	990		202	1272	1
65	EX	66	-1314	1309	1309		2	998		202	1309	1
66	EX	67	-1409	1404					149			
67	EX	68	-1506	1500	1501	1	2	996		228	1501	1
68	EX	69	-1514	1508	1509	1	2	996		228	1509	1
69	EX	70	-1497	1491	1492	1	1	922		149	1492	1
70	EX	81	-1500	1494					252			
71	EX	71	-1595	1586					149			
72	EX	72	1707	1697	1698	1	2	995		252	1698	1
73	EX	73	-1712	1702	1703	1	2	993		252	1703	1
74	EX	74	-1784	1772	1775	3	1	992		252	1775	1
75	EX	75	-2118	2101	2099	-2	1	996		276	2099	1
76	EX	76	-2117	2100	2098	-2	1	998		278	2098	1
77	EX	77	-2217	2198	2197	-1	1	990		276	2197	1

DATA: 826334ABN.TI

11/05/91 23:05:00

SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-02, 0.1G TO 1.0 ML

CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

RESP. FAC. FROM AVERAGE OF WHOLE . RL

NO	NAME
1	D-4 DICHLOROBENZENE (INTERNAL STD)
2	D-8 NAPHTHALENE (INTERNAL STD)
3	D-10 ACENAPHTHENE (INTERNAL STD.)
4	D-10 PHENANTHRENE (INTERNAL STD)
5	D-12 CHRYSENE (INTERNAL STD)
6	D-12 PERLYENE (INTERNAL STD)
7	2-FLUOROPHENOL (SURR.)
8	D-5 PHENOL (SURR.)
9	D-5 NITROBENZENE (SURR.)
10	2-FLUOROBIPHENYL (SURR.)
11	2, 4, 6- TRIBROMOPHENOL (SURR.)
12	D-14 TERPHENYL (SURR.)
13	PHENOL
14	BIS(2-CHLOROETHYL)ETHER
15	2-CHLOROPHENOL
16	M-DICHLOROBENZENE
17	P-DICHLOROBENZENE
18	BENZYL ALCOHOL
19	O-DICHLOROBENZENE
20	2-METHYL PHENOL
21	BIS(2-CHLORO ISOPROPYL)ETHER
22	4-METHYL PHENOL
23	N-NITROSODIPROPYLAMINE
24	HEXACHLOROETHANE
25	NITROBENZENE
26	ISOPHORONE
27	2-NITROPHENOL
28	2, 4-DIMETHYLPHENOL
29	BENZOIC ACID
30	BIS(2-CHLOROETHOXY) METHANE
31	2, 4-DICHLOROPHENOL
32	1, 2, 4-TRICHLOROBENZENE
33	NAPHTHALENE
34	4-CHLOROANILINE
35	HEXACHLOROBUTADIENE
36	4-CHLORO-3-METHYLPHENOL
37	2-METHYLNAPHTHALENE
38	HEXACHLOROCYCLOPENTADIENE
39	2, 4, 6-TRICHLOROPHENOL
40	2, 4, 5-TRICHLOROPHENOL
41	2-CHLORONAPHTHALENE
42	2-NITROANILINE
43	DIMETHYLPHTHALATE
44	2, 6-DINITROTOULENE
45	ACENAPHTHYLENE
46	3-NITROANILINE
47	ACENAPHTHENE
48	2, 4-DINITROPHENOL
49	4-NITROPHENOL
50	DIBENZOFURAN

SCAN	TIME	AREA (PGT)	AMOUNT	NAME
400	6:40	35310.	20.000 NG/UL	D-4 DICHLOROBENZENE (INTERNAL
569	9:29	71932.	20.000 NG/UL	D-8 NAPHTHALENE (INTERNAL STD
839	13:59	34348.	20.000 NG/UL	D-10 ACENAPHTHENE (INTERNAL
1074	17:54	63514.	20.000 NG/UL	D-10 PHENANTHRENE (INTERNAL
1505	25:05	57944.	20.000 NG/UL	D-12 CHRYSENE (INTERNAL STD)
1788	29:48	56373.	20.000 NG/UL	D-12 PERLYENE (INTERNAL STD)
271	4:31	408.	0.282 NG/UL	2-FLUOROPHENOL (SURR.)
354	5:54	712.	0.443 NG/UL	D-5 PHENOL (SURR.)
472	7:52	511.	0.326 NG/UL	D-5 NITROBENZENE (SURR.)
729	12:09	1056.	0.420 NG/UL	2-FLUOROBIPHENYL (SURR.)

NA

NOT FOUND	1327	22:07	8141.	2.020 NG/UL	D-14 TERPHENYL (SURR.)
-----------	------	-------	-------	-------------	------------------------

$$\frac{24.181 \text{ ng/ul} \times 1000 \text{ ul}}{0.1 \text{ g}} = 241800 \text{ ng/g} = 242,000 \text{ mg/kg}$$

$$\frac{23.96 \times 1000}{0.1} = 239,600 = 240,000$$

$$\frac{2.686 \times 1000}{0.1} = 26,800 \approx \text{Trace} < 33,000$$

$$\frac{37.02 \times 1000}{0.1} = 370,200 = 370,000$$

$$\frac{39.63 \times 1000}{0.1} = 396,300 = 396,000$$

NOT FOUND	572	9:32	91370.	24.181 NG/UL	NAPHTHALENE
NOT FOUND	673	11:13	59876.	23.960 NG/UL	2-METHYLNAPHTHALENE
NOT FOUND	768	12:48	341.	0.379 NG/UL	2-NITROANILINE
NOT FOUND	815	13:35	8989.	2.686 NG/UL	ACENAPHTHYLENE
NOT FOUND	844	14:04	78761.	37.018 NG/UL	ACENAPHTHENE
NOT FOUND	868	14:28	120055.	39.626 NG/UL	DIBENZOFURAN

QUANTITATION REPORT

FILE: 826334ABN

DATA: 826334ABN.TI
11/05/91 23:05:00

SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SD-02, 0.1G TO 1.0 ML
CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI

FORMULA: 0 INSTRUMENT: 4500 WEIGHT: 0.000
SUBMITTED BY: OPC ANALYST: SMATHERS ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
RESP. FAC. FROM AVERAGE OF WHOLE . RL

No NAME
51 2,4-DINITROTOLUENE

- 51 2,4-DINITROTOLUENE
- 52 DIETHYLPHTHALATE
- 53 FLUORENE
- 54 4-CHLOROPHENYL PHENYL ETHER
- 55 4-NITROANILINE
- 56 4,6-DINITRO-2-METHYLPHENOL
- 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
- 58 4-BROMOPHENYL PHENYL ETHER
- 59 HEXACHLOROBENZENE
- 60 PENTACHLOROPHENOL
- 61 PHENANTHRENE
- 62 ANTHRACENE
- 63 DI-N-BUTYLPHTHALATE
- 64 FLUOROANTHENE
- 65 PYRENE
- 66 BUTYL BENZYLPHTHALATE
- 67 BENZ(A)ANTHRACENE
- 68 CHRYSENE
- 69 BIS(2-ETHYLHEXYL)PHTHALATE
- 70 3,3'-DICHLOROENZIDENE
- 71 DI-N-OCTYLPHTHALATE
- 72 BENZO(B)FLUOROANTHENE
- 73 BENZO(K)FLUOROANTHENE
- 74 BENZO(A)PYRENE
- 75 INDENO(1,2,3-CD)PYRENE
- 76 DIBENZO(A,H)ANTHRACENE
- 77 BENZO(GHI)PERYLENE

176 = 18% ∴ $\frac{712598}{.18} = 625330$
 $\frac{625330}{X} = \frac{422829}{.119}$
 $X = 176$

$\frac{176 \times 1000}{.1} = 1,760,000 \text{ mg/Kg}$
 $\frac{54.8 \times 1000}{.1} = 548,000$ 18,000,000

$\frac{22.6 \times 1000}{.1} = 226,000$

$\frac{76.8 \times 1000}{.1} = 768,000$

$\frac{48.8 \times 1000}{.1} = 488,000$

$\frac{16.7 \times 1000}{.1} = 167,000$

$\frac{16.4 \times 1000}{.1} = 164,000$

SCAN	TIME	AREA (HGT)	AMOUNT	NAME
873	14:33	321.	0.382 NG/UL	2,4-DINITROTOLUENE NF
NOT FOUND				
923	15:23	136304.	54.799 NG/UL	FLUORENE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1079	17:59	422879.	119.002 NG/UL	PHENANTHRENE <i>sd</i>
1085	18:05	81692.	22.623 NG/UL	ANTHRACENE ✓
1162	19:22	596.	0.130 NG/UL	DI-N-BUTYLPHTHALATE <i>BIC</i>
1272	21:12	297027.	76.807 NG/UL	FLUOROANTHENE
1309	21:49	215267.	48.795 NG/UL	PYRENE
NOT FOUND				
1501	25:01	64203.	16.743 NG/UL	BENZ(A)ANTHRACENE
1509	25:09	56109.	16.412 NG/UL	CHRYSENE
1492	24:52	376.	0.114 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE <i>BIC</i>
NOT FOUND				
NOT FOUND				
1698	28:18	22898.	5.807 NG/UL	BENZO(B)FLUOROANTHENE
1703	28:23	27918.	7.209 NG/UL	BENZO(K)FLUOROANTHENE
1775	29:35	21860.	6.026 NG/UL	BENZO(A)PYRENE
2099	34:59	7065.	2.066 NG/UL	INDENO(1,2,3-CD)PYRENE
2098	34:58	2315.	0.805 NG/UL	DIBENZO(A,H)ANTHRACENE
2197	36:37	5540.	1.890 NG/UL	BENZO(GHI)PERYLENE

$\frac{5.8 \times 1000}{.1} = 58,000$

$\frac{7.2 \times 1000}{.1} = 72,000$

$\frac{6.0 \times 1000}{.1} = 60,000$

TCA FINISHED, 29 FOUND
 FINISHED AT: 11/06/91 9:09:30

} *Traces*

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR SOILS

MSCL ANALYSIS NO. 826,335

MARKED Gulf State Creosote

ANALYSIS OF Soil

GS-SB-02

COMPOUNDS	MQL*	Micro g/Kg
Phenol	330	ND
bis(2-Chloroethyl)ether	330	ND
2-Chlorophenol	330	ND
1,3-Dichlorobenzene	330	ND
1,4-Dichlorobenzene	330	ND
Benzyl alcohol	330	ND
1,2-Dichlorobenzene	330	ND
2-Methylphene	330	ND
bis(2-Chloroisopropyl)ether	330	ND
4-Methylphenol	330	ND
N-Nitroso-di-n-dipropylamine	330	ND
Hexachloroethane	330	ND
Nitrobenzene	330	ND
Isophorone	330	ND
2-Nitrophenol	330	ND
2,4-Dimethylphenol	330	ND
Benzoic acid	1600	ND
bis(2-Chloroethoxy)methane	330	ND
2,4-Dichlorophenol	330	ND
1,2,4-Trichlorobenzene	330	ND
Naphthalene	330	1,900,000
4-Chloroaniline	330	ND
Hexachlorobutadiene	330	ND
4-Chloro-3-methylphenol	330	ND
2-Methylnaphthalene	330	1,400,000
Hexachlorocyclopentadiene	330	ND
2,4,6-Trichlorophenol	330	ND
2,4,5-Trichlorophenol	1600	ND
2-Chloronaphthalene	330	ND
2-Nitroaniline	1600	ND
Dimethylphthalate	330	ND
Acenaphthylene	330	Trace
2,6-Dinitrotoluene	330	ND
3-Nitroaniline	1600	ND
Acenaphthene	330	970,000

COMPOUNDS	MQL*	Micro g/Kg
2,4-Dinitrophenol	1600	ND
4-Nitrophenol	1600	ND
Dibenzofuran	330	1,000,000
2,4-Dinitrotoluene	330	ND
Diethylphthalate	330	ND
4-Chlorophenyl-phenyl ether	330	ND
Fluorene	330	1,500,000
4-Nitroaniline	1600	ND
4,6-Dinitro-2-methylphenol	1600	ND
N-nitrosodiphenylamine	330	ND
4-Bromophenyl-phenylether	330	ND
Hexachlorobenzene	330	ND
Pentachlorophenol	1600	ND
Phenanthrene *	330	3,500,000
Anthracene *	330	4,200,000
Di-n-butylphthalate	330	ND
Fluoranthene	330	1,600,000
Pyrene	330	770,000
Butylbenzylphthalate	330	ND
3,3'-Dichlorobenzidine	660	ND
Benzo(a)anthracene	330	270,000
Chrysene	330	280,000
bis(2-Ethylhexyl)phthalate	330	ND
Di-n-octylphthalate	330	ND
Benzo(b)fluoranthene	330	113,000
Benzo(k)fluoranthene	330	100,000
Benzo(a)pyrene	330	85,000
Indeno(1,2,3-cd)pyrene	330	ND
Dibenz(a,h)anthracene	330	ND
Benzo(g,h,i)perylene	330	ND

*ND = None Detected

MQL = Minimum Quantifiable Level
*Estimated Value

Multiply MQL's by 250

SURROGATES	RECOVERY (%)
2-Fluorophenol	
Phenol-d5	
Nitrobenzene-d5	
2-Fluorobipheny	
2,4,6-Tribromophenol	
p-Terphenyl-d14	

NA= Had to dilute out of Linear Range

- No peaks above 40% of internal standard were observed.
- 1 Peaks above 40% of internal standard were not identified.
- 19 Peaks above 40% internal standard, peaks appear to be PAHs not on EPA Appendix IX.
- X Additional peaks were observed but not examined.

Carl L. Alley
State Chemist

- 51 2,4-DINITROTOLUENE
- 52 DIETHYLPHTHALATE
- 53 FLUORENE
- 54 4-CHLOROPHENYL PHENYL ETHER
- 55 4-NITROANILINE
- 56 4,6-DINITRO-2-METHYLPHENOL
- 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
- 58 4-BROMOPHENYL PHENYL ETHER
- 59 HEXACHLOROBENZENE
- 60 PENTACHLOROPHENOL
- 61 PHENANTHRENE
- 62 ANTHRACENE
- 63 DI-N-BUTYLPHTHALATE
- 64 FLUOROANTHENE
- 65 PYRENE
- 66 BUTYL BENZYLPHTHALATE
- 67 BENZ(A)ANTHRACENE
- 68 CHRYSENE
- 69 BIS(2-ETHYLHEXYL)PHTHALATE
- 70 3,3'-DICHLOROBENZIDENE
- 71 DI-N-OCTYLPHTHALATE
- 72 BENZO(B)FLUOROANTHENE
- 73 BENZO(K)FLUOROANTHENE
- 74 BENZO(A)PYRENE
- 75 INDENO(1,2,3-CD)PYRENE
- 76 DIBENZO(A,H)ANTHRACENE
- 77 BENZO(GHI)PERYLENE

$59.54 \times 5000 = 1,486,500$
 $1500,000$
 $\frac{454868}{117} = 37605$
 $\frac{141.3 \times 5000}{.2} = 3532500$
 $X = 141.3$
 $\frac{3500,000}{117}$
 $\frac{92280}{176} = 524284$
 $\frac{542824}{116.5} = 37755$
 $X = 166.5$
 $\frac{166.5 \times 5000}{.2} = 4,200,000$
 $\frac{62.93 \times 5000}{12} = 1,574,250 = 1,600,000$
 $\frac{30.7 \times 5000}{.2} = 767,500 = 768,000$
 $\frac{10.8 \times 5000}{.2} = 270,000$
 $\frac{11.2 \times 5000}{12} = 280,000$

SCAN	TIME	AREA (HIGHT)	AMOUNT	NAME
873	14:33	170.	0.224 NG/UL	2,4-DINITROTOLUENE
NOT FOUND				
923	15:23	133963.	59.540 NG/UL	FLUORENE ✓
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1078	17:58	376605.	117.389 NG/UL	PHENANTHRENE ✓
1085	18:05	379755.	116.487 NG/UL	ANTHRACENE ✓
1162	19:22	343.	0.083 NG/UL	DI-N-BUTYLPHTHALATE BK
1271	21:11	219720.	62.933 NG/UL	FLUOROANTHENE ✓
1309	21:49	151578.	30.698 NG/UL	PYRENE ✓
NOT FOUND				
1501	25:01	46340.	10.798 NG/UL	BENZ(A)ANTHRACENE ✓
1508	25:08	42688.	11.156 NG/UL	CHRYSENE ✓
1491	24:51	455.	0.123 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE BK
NOT FOUND				
1589	26:29	518.	0.102 NG/UL	DI-N-OCTYLPHTHALATE BK
1697	28:17	14107.	4.447 NG/UL	BENZO(B)FLUOROANTHENE ✓
1702	28:22	12639.	4.056 NG/UL	BENZO(K)FLUOROANTHENE ✓
1774	29:34	10009.	3.429 NG/UL	BENZO(A)PYRENE
NOT FOUND				
NOT FOUND				
NOT FOUND				

$\frac{4.5 \times 5000}{.2} = 112,500$
 $\frac{4.1 \times 5000}{.2} = 102,500$
 $\frac{3.4 \times 5000}{.2} = 85,000$

TCA FINISHED, 25 FOUND
 FINISHED AT: 11/06/91 9:25:06

SCAN	TIME	AREA (PGH)	AMOUNT	NAME
399	6:39	31937.	20.000 NG/UL	D-4 DICHLOROBENZENE (INTERNAL
569	9:29	65536.	20.000 NG/UL	D-8 NAPHTH... (INTERNAL STD
839	13:59	31070.	20.000 NG/UL	D-10 ACENAPHTHENE (INTERNAL
1074	17:54	57341.	20.000 NG/UL	D-10 PHENANTHRENE (INTERNAL
1504	25:04	64853.	20.000 NG/UL	D-12 CHRYSENE (INTERNAL STD)
1788	29:48	45358.	20.000 NG/UL	D-12 PERLYENE (INTERNAL STD)
269	4:29	150.	0.115 NG/UL	2-FLUOROPHENOL (SURR.)
353	5:53	151.	0.104 NG/UL	D-5 PHENOL (SURR.)
472	7:52	155.	0.109 NG/UL	D-5 NITROBENZENE (SURR.)
730	12:10	430.	0.189 NG/UL	2-FLUOROBIPHENYL (SURR.)
NOT FOUND				
1326	22:06	7258.	1.609 NG/UL	D-14 TERPHENYL (SURR.)
355	5:55	217.	0.141 NG/UL	PHENOL

NA

NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND
NOT FOUND

465	7:45	135.	0.295 NG/UL	HEXACHLOROETHANE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				

$$\frac{75.86 \text{ ng/g} \times 5000 \text{ ml}}{.2 \text{ g}} = 1,896,500 \text{ ng/g} \approx 1,900,000$$

572	9:32	261150.	75.859 NG/UL	NAPHTHALENE
NOT FOUND				
NOT FOUND				
NOT FOUND				
673	11:13	124366.	54.623 NG/UL	2-METHYLNAPHTHALENE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				

$$\frac{54.6 \times 5000}{.2} = 1,365,000$$

769	12:49	434.	0.533 NG/UL	2-NITROANILINE
NOT FOUND				
NOT FOUND				
815	13:35	6157.	2.034 NG/UL	ACENAPHTHYLENE
NOT FOUND				
844	14:04	74379.	38.647 NG/UL	ACENAPHTHENE
NOT FOUND				
NOT FOUND				
868	14:28	114632.	41.827 NG/UL	DIBENZOFURAN

$$\frac{38.65 \times 5000}{.2} = 966,250$$

$$970,000$$

$$\frac{41.83 \times 5000}{.2} = 1,045,750$$

QUANTITATION REPORT FILE: 826335ABN

DATA: 826335ABN.TI
 11/06/91 0:39:00
 SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SB-02, 0.2G TO 5.0 ML
 CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
 FORMULA: 0 INSTRUMENT: 4500 WEIGHT: 0.000
 SUBMITTED BY: OPC ANALYST: SMATHERS ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
 RESP. FAC. FROM AVERAGE OF WHOLE . RL

No NAME

DATA: 826335ABN.TI

11/06/91 0:39:00

SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-SB-02, 0.2G TO 5.0 ML

CONDS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. NO.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

RESP. FAC. FROM AVERAGE OF WHOLE . RL

No	NAME
1	D-4 DICHLOROBENZENE (INTERNAL STD)
2	D-8 NAPHTHALENE (INTERNAL STD)
3	D-10 ACENAPHTHENE (INTERNAL STD.)
4	D-10 PHENANTHRENE (INTERNAL STD)
5	D-12 CHRYSENE (INTERNAL STD)
6	D-12 PERLYENE (INTERNAL STD)
7	2-FLUOROPHENOL (SURR.)
8	D-5 PHENOL (SURR.)
9	D-5 NITROBENZENE (SURR.)
10	2-FLUOROBIPHENYL (SURR.)
11	2, 4, 6- TRIBROMOPHENOL (SURR.)
12	D-14 TERPHENYL (SURR.)
13	PHENOL
14	BIS(2-CHLOROETHYL)ETHER
15	2-CHLOROPHENOL
16	M-DICHLOROBENZENE
17	P-DICHLOROBENZENE
18	BENZYL ALCOHOL
19	O-DICHLOROBENZENE
20	2-METHYL PHENOL
21	BIS(2-CHLORO ISOPROPYL)ETHER
22	4-METHYL PHENOL
23	N-NITROSODIPROPYLAMINE
24	HEXACHLOROETHANE
25	NITROBENZENE
26	ISOPHORONE
27	2-NITROPHENOL
28	2, 4-DIMETHYLPHENOL
29	BENZOIC ACID
30	BIS(2-CHLOROETHOXY) METHANE
31	2, 4-DICHLOROPHENOL
32	1, 2, 4-TRICHLOROBENZENE
33	NAPHTHALENE
34	4-CHLOROANILINE
35	HEXACHLOROBUTADIENE
36	4-CHLORO-3-METHYLPHENOL
37	2-METHYLNAPHTHALENE
38	HEXACHLOROCYCLOPENTADIENE
39	2, 4, 6-TRICHLOROPHENOL
40	2, 4, 5-TRICHLOROPHENOL
41	2-CHLORONAPHTHALENE
42	2-NITROANILINE
43	DIMETHYLPHTHALATE
44	2, 6-DINITROTOLUENE
45	ACENAPHTHYLENE
46	3-NITROANILINE
47	ACENAPHTHENE
48	2, 4-DINITROPHENOL
49	4-NITROPHENOL
50	DIBENZOFURAN

45	EX	45	-820	816	815	-1	1	995	152	815	1		
46	EX	46	-838	834					65				
47	EX	47	-848	844	844		1	994	154	844	1		
48	EX	48	-853	849					184				
49	EX	49	-860	856					139				
50	EX	50	-872	868	868		1	1000	168	868	1		
51	EX	51	-876	872					165	873	1		
52	EX	52	-910	906					149				
53	EX	53	-928	924	923	-1	1	996	166	923	1		
54	EX	54	-923	919					204				
55	EX	55	-937	933					138				
56	EX	82	-940	936					198				
57	EX	57	-944	941					169				
58	EX	59	-1001	997					248				
59	EX	60	-1028	1024					284				
60	EX	61	-1056	1052					266				
61	EX	62	-1082	1078	1078		2	981	-1	178	1078	1	
62	EX	63	-1089	1085	1085		2	977	-1	178	1085	1	
63	EX	64	-1167	1162	1162		1	886		149	1162	1	
64	EX	65	-1276	1270	1271	1	1	995		202	1271	1	
65	EX	66	-1314	1309	1309		1	997		202	1309	1	
66	EX	67	-1409	1403					149				
67	EX	68	-1506	1500	1501	1	2	997		228	1501	1	
68	EX	69	-1514	1508	1508		2	998		228	1508	1	
69	EX	70	-1497	1491	1491		1	925		149	1491	1	
70	EX	81	-1500	1494					252				
71	EX	71	-1595	1587					149	1589		1	
72	EX	72	1707	1698	1698		2	994		252	1697	-1	1
73	EX	73	-1712	1703	1702	-1	2	992		252	1702		1
74	EX	74	-1784	1774	1774		1	989		252	1774		1
75	EX	75	-2118	2105					276				
76	EX	76	-2117	2104					278				
77	EX	77	-2217	2203					276				

PROCEDURE: TCA
 DATA FILE: B26335ABN
 REFERENCE: EX11
 NAME LIST: EX
 REPORT: RTEX2

DIAGNOSTIC REPORT

11/06/91 9:17:51

INITIALIZATION OPTION: 2 PROCESSING OPTION: 3

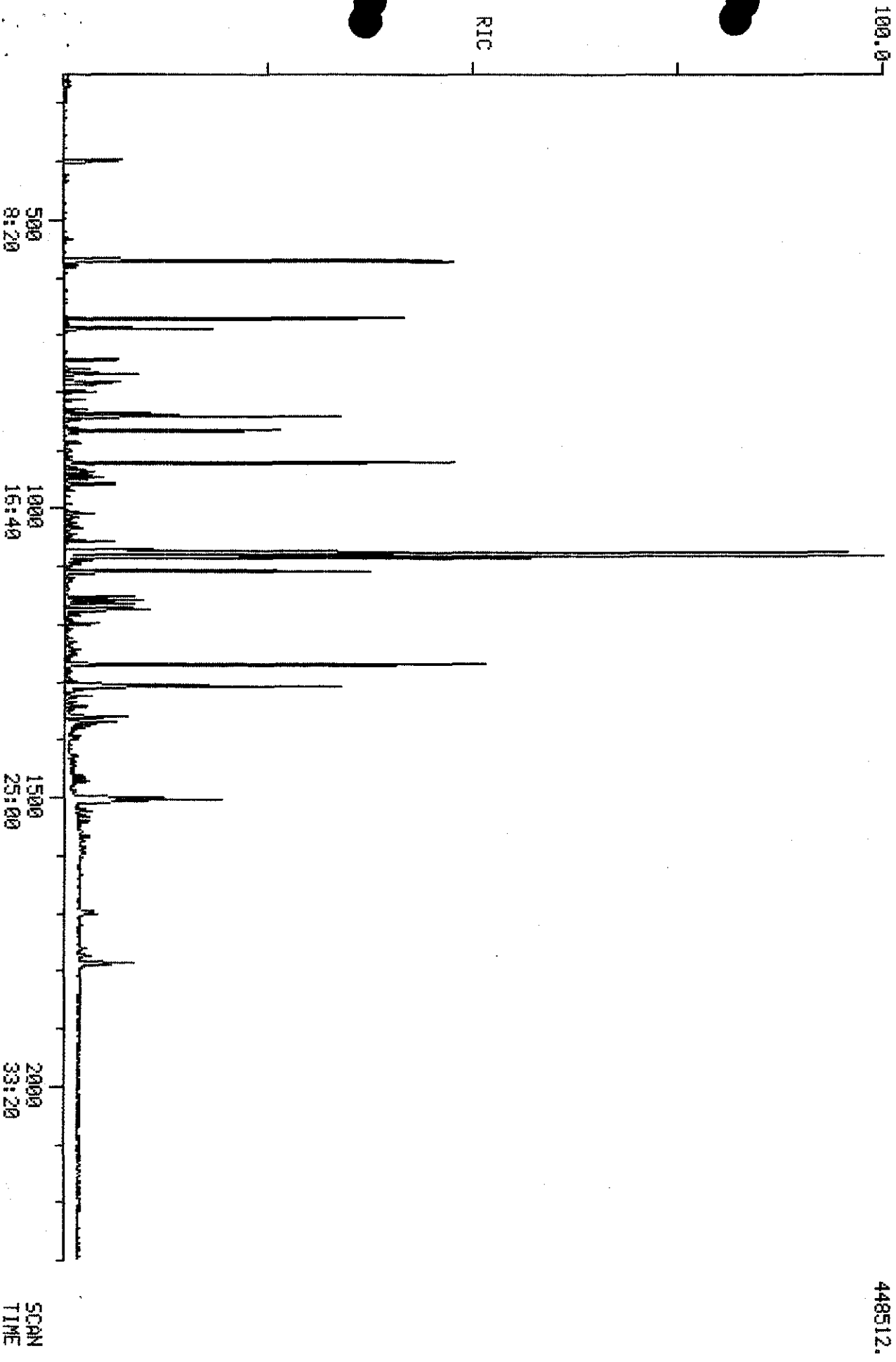
< ---- STANDARDS ---- >				>< --- PLUS UNKNOWN --- ><				>< - LIST NAMES - >	
PROC	USED	POSS	RMS	PROC	USED	POSS	RMS	STANDARD/UNKNOWN	
6	6	1	144	12	8	1	130	RTEX2/EX2	
2	2	1	0	14	2	1	0	RTEX1/EX3	
2	2	1	0	15	4	1	54	RTEX4/EX4	
3	3	1	0	12	4	1	61	RTEX5/EX5	
3	3	1	0	13	6	1	45	RTEX5/EX6	
4	4	1	134	13	8	4	86	RTEX7/EX7	
3	3	1	130	9	7	4	101	RTEX8/EX8	
3	3	1	130	10	6	4	84	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 25 FOUND

< COMPOUND >		SEARCH							>< SAT ><		>< CHRO ><		
NO	LIB ENTRY	REF	PRED	SEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS	
1	EX	1	-403	400	399	-1	1	997	150	399	.	1	
2	EX	2	-573	569	569	.	1	995	136	569	.	1	
3	EX	3	-843	838	839	1	1	997	164	839	.	1	
4	EX	4	-1078	1073	1074	1	1	979	188	1074	.	1	
5	EX	5	-1510	1503	1504	1	1	952	240	1504	.	1	
6	EX	6	-1798	1790	1788	-2	1	990	264	1788	.	1	
7	EX	7	-273	270	269	-1	1	1000	112	269	.	1	
8	EX	8	-357	354	.	.	.	.	99	353	.	1
9	EX	9	-476	472	.	.	.	.	82	472	.	1
10	EX	10	-733	729	.	.	.	.	172	730	.	1
11	EX	11	-969	964	.	.	.	.	330	.	.	1
12	EX	12	-1332	1326	1326	.	1	990	244	1326	.	1	
13	EX	13	-358	354	.	.	.	.	94	355	.	1
14	EX	14	-371	367	.	.	.	.	93	.	.	1
15	EX	15	-382	378	.	.	.	.	128	.	.	1
16	EX	16	-399	395	.	.	.	.	146	.	.	1
17	EX	17	-405	401	.	.	.	.	146	.	.	1
18	EX	18	-418	414	.	.	.	.	108	.	.	1
19	EX	19	-428	424	.	.	.	.	146	.	.	1
20	EX	20	-429	425	.	.	.	.	108	.	.	1
21	EX	21	-435	431	.	.	.	.	45	.	.	1
22	EX	22	-447	443	.	.	.	.	108	.	.	1
23	EX	23	-453	449	.	.	.	.	70	.	.	1
24	EX	24	-467	463	.	.	.	.	117	465	.	1
25	EX	25	-478	475	.	.	.	.	77	.	.	1
26	EX	26	-507	504	.	.	.	.	82	.	.	1
27	EX	27	-521	518	.	.	.	.	139	.	.	1
28	EX	28	-519	516	.	.	.	.	122	.	.	1
29	EX	29	-532	529	.	.	.	.	105	.	.	1
30	EX	30	-533	530	.	.	.	.	93	.	.	1
31	EX	31	-551	547	.	.	.	.	162	.	.	1
32	EX	32	-565	561	.	.	.	.	180	.	.	1
33	EX	33	-576	572	573	1	1	995	128	572	-1	1	
34	EX	34	-584	580	.	.	.	.	127	.	.	1
35	EX	35	-597	593	.	.	.	.	225	.	.	1
36	EX	36	-651	647	.	.	.	.	107	.	.	1
37	EX	37	-677	673	673	.	1	997	142	673	.	1	
38	EX	38	-709	705	.	.	.	.	237	.	.	1
39	EX	39	-722	718	.	.	.	.	198	.	.	1
40	EX	40	-728	724	.	.	.	.	198	.	.	1
41	EX	41	-752	748	.	.	.	.	162	.	.	1
42	EX	42	-773	769	.	.	.	.	65	769	.	1
43	EX	43	-801	797	.	.	.	.	163	.	.	1
44	EX	44	-811	810	.	.	.	.	145	.	.	1

RIC 11/06/91 0:39:00 DATA: 826333ABN #1 SCANS 250 TO 2300
CALLI: 826333ABN #2
SAMPLE: GULF STATES CRESOTE SOIL MARKED GS-5B-02, 0.2G TO 5.0 ML
CONDOS.: DESC 1M, EI MODE, 1400 EM VOLTS, RESEK, 24 PSI
RANGE: G 1.2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

448512.





CHAIN OF CUSTODY RECORD

MSD 9859199	PROJECT NAME/LOCATION Gulf State Geosote / Hattiesburg, MS	PROJECT LEADER Jim Harbace / Michael Slack	REMARKS * METALS ANALYSIS - SEE ATTACHED PAGE	LAB USE ONLY							
ESD SAMPLE TYPES 1. SURFACE WATER 2. GROUND WATER 3. POTABLE WATER 4. WASTEWATER 5. LEACHATE 11. OTHER TRIP BLANK		SAMPLER MICHAEL SLACK KEN WHITTEN JIM HARBACE MARK WALTERS/Mark. Walters									
STATION NO.	DATE	TIME	STATION LOCATION/DESCRIPTION	TOTAL CONTAINERS	CIRCLE/ADD parameters desired. List no. of containers submitted.	TAG NO./REMARKS	ANALYSIS	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
GS-PW-01	10/15/91	2:50 PM	Public Well - Hall Street (Water Dept.)	7	2 2 1 1 1			10/18/91			D.A. Dallar
GS-TW-01	10/16/91	11:50 AM	BACKGROUND TEMPORARY WELL - PINE STREET & RYAN MOTOR	7	2 2 1 1 1			6:54 PM			J.A. Dallar
GS-SB-01	10/16/91	3:50	BACKGROUND SUBSURFACE SOIL - PINE STREET & RYAN MOTOR	4	1 1 1 (1)						
GS-SD-01	10/16/91	5:00 PM	BACKGROUND SEDIMENT - GORDONS CREEK TRAILER PARK	4	1 1 1 (1)						
GS-SD-02	10/16/91	5:20 PM	DOWN GRADIENT - GORDONS CREEK SEDIMENT - EAST OF DITCH	4	1 1 1 (1)						
GS-TW-02	10/17/91	10:05 AM	DOWN GRADIENT TEMPORARY WELL	7	2 2 1 1 1						
GS-SB-02	10/17/91	11:30 AM	SUBSURFACE SOIL - ON-SITE BETWEEN THE TWO DITCHES	4	1 1 1 (1)						
TRIP BLANK			TRIP BLANK FROM MSU LAB	2	2						
										RECEIVED BY: (PRINT) RECEIVED BY: (SIGN)	
										RECEIVED BY: (PRINT) RECEIVED BY: (SIGN)	
										RECEIVED BY: (PRINT) RECEIVED BY: (SIGN)	
										RECEIVED BY: (PRINT) RECEIVED BY: (SIGN)	
										RECEIVED BY: (PRINT) RECEIVED BY: (SIGN)	
										RECEIVED BY: (PRINT) RECEIVED BY: (SIGN)	

DISTRIBUTION: White and Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy is returned to samplers; Pink copy retained by samplers.

4 Ice Chest



CHAIN OF CUSTODY RECORD

MSD		PROJECT LEADER		REMARKS		LAB USE ONLY									
PROJECT NAME/LOCATION				PROJECT LEADER				REMARKS				LAB USE ONLY			
ESD SAMPLE TYPES		SAMPLER		STATION LOCATION/DESCRIPTION		ANALYSIS		TAG NO./REMARKS		LAB USE ONLY		LAB USE ONLY			
1. SURFACE WATER	4. SEDIMENT	7. SLUDGE	10. FISH	1. SURFACE WATER	4. SEDIMENT	7. SLUDGE	10. FISH	1. SURFACE WATER	4. SEDIMENT	7. SLUDGE	10. FISH	1. SURFACE WATER	4. SEDIMENT		
2. GROUND WATER	5. LEACHATE	8. WASTE	11. OTHER	2. GROUND WATER	5. LEACHATE	8. WASTE	11. OTHER	2. GROUND WATER	5. LEACHATE	8. WASTE	11. OTHER	2. GROUND WATER	5. LEACHATE		
3. POTABLE WATER	6. AIR	9. AIR		3. POTABLE WATER	6. AIR	9. AIR		3. POTABLE WATER	6. AIR	9. AIR		3. POTABLE WATER	6. AIR		
STATION NO.	DATE	TIME	COMP	SAMPLE TYPE	STATION LOCATION/DESCRIPTION	TOTAL CONTAINERS	DATA TO: CIRCLE/ADD parameters desired. List no. of containers submitted.	ANALYSIS	TAG NO./REMARKS	LAB USE ONLY	LAB USE ONLY	LAB USE ONLY	LAB USE ONLY		
1	10/19/90	10:00	✓	1	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
2	10/19/90	10:00	✓	2	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
3	10/19/90	10:00	✓	3	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
4	10/19/90	10:00	✓	4	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
5	10/19/90	10:00	✓	5	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
6	10/19/90	10:00	✓	6	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
7	10/19/90	10:00	✓	7	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
8	10/19/90	10:00	✓	8	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
9	10/19/90	10:00	✓	9	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
10	10/19/90	10:00	✓	10	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
11	10/19/90	10:00	✓	11	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
12	10/19/90	10:00	✓	12	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
13	10/19/90	10:00	✓	13	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
14	10/19/90	10:00	✓	14	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
15	10/19/90	10:00	✓	15	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
16	10/19/90	10:00	✓	16	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
17	10/19/90	10:00	✓	17	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
18	10/19/90	10:00	✓	18	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
19	10/19/90	10:00	✓	19	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
20	10/19/90	10:00	✓	20	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
21	10/19/90	10:00	✓	21	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
22	10/19/90	10:00	✓	22	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
23	10/19/90	10:00	✓	23	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
24	10/19/90	10:00	✓	24	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
25	10/19/90	10:00	✓	25	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
26	10/19/90	10:00	✓	26	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
27	10/19/90	10:00	✓	27	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
28	10/19/90	10:00	✓	28	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
29	10/19/90	10:00	✓	29	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
30	10/19/90	10:00	✓	30	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
31	10/19/90	10:00	✓	31	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
32	10/19/90	10:00	✓	32	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
33	10/19/90	10:00	✓	33	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
34	10/19/90	10:00	✓	34	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
35	10/19/90	10:00	✓	35	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
36	10/19/90	10:00	✓	36	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
37	10/19/90	10:00	✓	37	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
38	10/19/90	10:00	✓	38	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
39	10/19/90	10:00	✓	39	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
40	10/19/90	10:00	✓	40	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
41	10/19/90	10:00	✓	41	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
42	10/19/90	10:00	✓	42	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
43	10/19/90	10:00	✓	43	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
44	10/19/90	10:00	✓	44	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
45	10/19/90	10:00	✓	45	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
46	10/19/90	10:00	✓	46	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
47	10/19/90	10:00	✓	47	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
48	10/19/90	10:00	✓	48	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
49	10/19/90	10:00	✓	49	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						
50	10/19/90	10:00	✓	50	INDUSTRIAL WASTE	1	VOA	VOA	10/19/90						

DISTRIBUTION: White and Yellow copies accompany sample shipment to laboratory; Yellow copy retained by laboratory. White copy is returned to samplers; Pink copy retained by samplers.

MISSISSIPPI STATE UNIVERSITY

MISSISSIPPI
STATE CHEMICAL LABORATORY

BOX CR - MISSISSIPPI STATE, MISSISSIPPI 39762

TELEPHONE (601) 325-3324

DR. EARL G. ALLEY
State ChemistDR. LARRY G. LANE
Director, IAS Division

November 13, 1991

Analysis No. 826,336-338

Analysis of Water

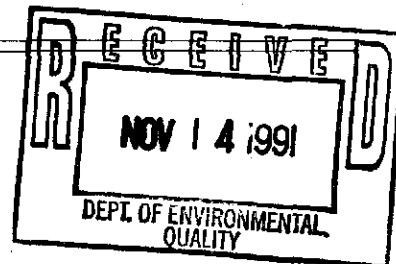
Marked: Gulf State Creosote, Hattiesburg

Received on 10-21-91

from MS Office of Pollution Control
ATTN: Jim Hardage

Address P.O. Box 10385 Jackson, MS 39209

RESULTS:

MSCL NO.MS DEQ-OPC Identification

826,336

GS-PW-01, Public Well-Hall Street (Water Dept.)

826,337

GS-TW-01, Background Temporary Well, Pine Street &
Ryan Motors

826,338

GS-TW-02, Downgradient Temporary Well, Near Trailer Park

Results from our gc/mass spec analyses of the above water samples for semivolatile organic compounds on the Target Compound List are presented in attached reports.

Analytical Costs

3 ABNs By gc/ms @ \$400 = \$1200

State Chemist

PLEASE GIVE NUMBER WHEN REFERRING TO THIS ANALYSIS

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR WATERS

MSCL ANALYSIS NO. 826,336

MARKED Gulf State

RECEIVED
JAN 15 1992
 Dept. of Environmental Quality
 Bureau of Pollution Control

ANALYSIS OF Water

GS-PW-01

COMPOUNDS	MQL*	Micro g/L
Phenol	10	ND
bis(2-Chloroethyl)ether	10	ND
2-Chlorophenol	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Benzyl alcohol	20	ND
1,2-Dichlorobenzene	10	ND
2-Methylphene	10	ND
bis(2-Chloroisopropyl)ether	10	ND
4-Methylphenol	10	ND
N-Nitroso-di-n-dipropylamine	10	ND
Hexachloroethane	10	ND
Nitrobenzene	10	ND
Isophorone	10	ND
2-Nitrophenol	10	ND
2,4-Dimethylphenol	10	ND
Benzoic acid	20	ND
bis(2-Chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND
1,2,4-Trichlorobenzene	10	ND
Naphthalene	10	ND
4-Chloroaniline	20	ND
Hexachlorobutadiene	10	ND
4-Chloro-3-methylphenol	20	ND
2-Methylnaphthalene	10	ND
Hexachlorocyclopentadiene	10	ND
2,4,6-Trichlorophenol	10	ND
2,4,5-Trichlorophenol	10	ND
2-Chloronaphthalene	10	ND
2-Nitroaniline	50	ND
Dimethylphthalate	10	ND
Acenaphthylene	10	ND
2,6-Dinitrotoluene	10	ND
3-Nitroaniline	50	ND
Acenaphthene	10	ND

COMPOUNDS	MQL*	Micro g/L
2,4-Dinitrophenol	50	ND
4-Nitrophenol	50	ND
Dibenzofuran	10	ND
2,4-Dinitrotoluene	10	ND
Diethylphthalate	10	ND
4-Chlorophenyl-phenyl ether	10	ND
Fluorene	10	ND
4-Nitroaniline	50	ND
4,6-Dinitro-2-methylphenol	50	ND
N-nitrosodiphenylamine	10	ND
4-Bromophenyl-phenylether	10	ND
Hexachlorobenzene	10	ND
Pentachlorophenol	50	ND
Phenanthrene	10	ND
Anthracene	10	ND
Di-n-butylphthalate	10	ND
Fluoranthene	10	ND
Pyrene	10	ND
Butylbenzylphthalate	10	ND
3,3'-Dichlorobenzidine	20	ND
Benzo(a)anthracene	10	ND
Chrysene	10	ND
bis(2-Ethylhexyl)phthalate	10	ND
Di-n-octylphthalate	10	ND
Benzo(b)fluoranthene	10	ND
Benzo(k)fluoranthene	10	ND
Benzo(a)pyrene	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Dibenz(a,h)anthracene	10	ND
Benzo(g,h,i)perylene	10	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	53
Phenol-d5	33
Nitrobenzene-d5	99
2-Fluorobipheny	98
2,4,6-Tribromophenol	115
p-Terphenyl-d14	104

Multiply MQL's by _____

Replaces attached sheet per 1-14-92 telecon w/ Dr. Larry Lane. jff

- _____ No peaks above 40% of internal standard were observed.
- 4 Peaks above 40% of internal standard were not identified.
- 2 Peaks above 40% internal standard not on EPA Appendix IX. Appear to be substituted chlorinated benzenes at an estimated total concentration of 10 µg/L.

Carl D. Alley
 State Chemist

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR WATERS

MSCL ANALYSIS NO. 826,336

MARKED Gulf State Creosote

ANALYSIS OF Water

GS-PW-01

COMPOUNDS	MQL*	Micro g/L
Phenol	10	ND
bis(2-Chloroethyl)ether	10	ND
2-Chlorophenol	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Benzyl alcohol	20	ND
1,2-Dichlorobenzene	10	ND
2-Methylphene	10	ND
bis(2-Chloroisopropyl)ether	10	ND
4-Methylphenol	10	ND
N-Nitroso-di-n-dipropylamine	10	ND
Hexachloroethane	10	ND
Nitrobenzene	10	ND
Isophorone	10	ND
2-Nitrophenol	10	ND
2,4-Dimethylphenol	10	ND
Benzoic acid	20	ND
bis(2-Chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND
1,2,4-Trichlorobenzene	10	ND
Naphthalene	10	ND
4-Chloroaniline	20	ND
Hexachlorobutadiene	10	ND
4-Chloro-3-methylphenol	20	ND
2-Methylnaphthalene	10	ND
Hexachlorocyclopentadiene	10	ND
2,4,6-Trichlorophenol	10	ND
2,4,5-Trichlorophenol	10	ND
2-Chloronaphthalene	10	ND
2-Nitroaniline	50	ND
Dimethylphthalate	10	ND
Acenaphthylene	10	ND
2,6-Dinitrotoluene	10	ND
3-Nitroaniline	50	ND
Acenaphthene	10	ND

COMPOUNDS	MQL*	Micro g/L
2,4-Dinitrophenol	50	ND
4-Nitrophenol	50	ND
Dibenzofuran	10	ND
2,4-Dinitrotoluene	10	ND
Diethylphthalate	10	ND
4-Chlorophenyl-phenyl ether	10	ND
Fluorene	10	ND
4-Nitroaniline	50	ND
4,6-Dinitro-2-methylphenol	50	ND
N-nitrosodiphenylamine	10	ND
4-Bromophenyl-phenylether	10	ND
Hexachlorobenzene	10	ND
Pentachlorophenol	50	ND
Phenanthrene	10	ND
Anthracene	10	ND
Di-n-butylphthalate	10	ND
Fluoranthene	10	ND
Pyrene	10	ND
Butylbenzylphthalate	10	ND
3,3'-Dichlorobenzidine	20	ND
Benzo(a)anthracene	10	ND
Chrysene	10	ND
bis(2-Ethylhexyl)phthalate	10	ND
Di-n-octylphthalate	10	ND
Benzo(b)fluoranthene	10	ND
Benzo(k)fluoranthene	10	ND
Benzo(a)pyrene	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Dibenz(a,h)anthracene	10	ND
Benzo(g,h,i)perylene	10	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	53
Phenol-d5	33
Nitrobenzene-d5	99
2-Fluorobipheny	98
2,4,6-Tribromophenol	115
p-Terphenyl-d14	104

Multiply MQL's by _____

_____ No peaks above 40% of internal standard were observed.

4 _____ Peaks above 40% of internal standard were not identified.

2 _____ Peaks above 40% internal standard not on EPA Appendix IX.

_____ Additional peaks were observed but not examined.

Earl D. Alley

State Chemist

LIBRARY SEARCH
 11/04/91 15:21:00 + 9:53
 SAMPLE: A WATER FROM GULF STATES CRESOTE MARKED GS-PM-01, 900 ML TO 0.9 M
 CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI
 ENHANCED (S 158 2N 0T)

DATA: 826336ABN # 593
 CALL: 826336ABN # 2
 BASE M/Z: 119
 RIC: 9775.

1164
 SAMPLE

C9.H11.O1
 M WT 1164
 B PK 119
 RANK 8469
 # 1
 PUR 921

BENZENE, (CHLOROMETHYL)ETHYL-

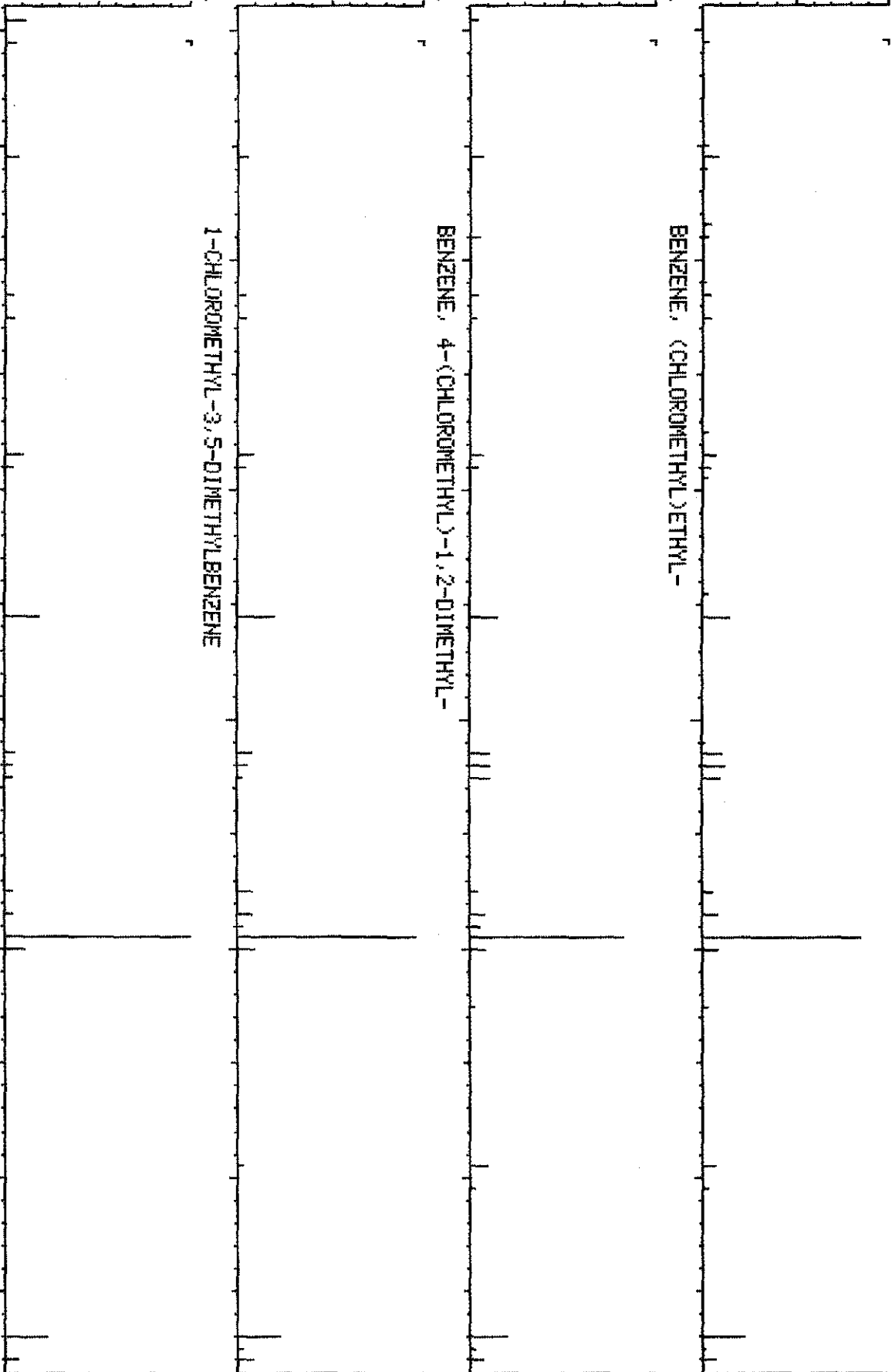
C9.H11.O1
 M WT 1164
 B PK 119
 RANK 8460
 # 2
 PUR 879

BENZENE, 4-(CHLOROMETHYL)-1,2-DIMETHYL-

C9.H11.O1
 M WT 1164
 B PK 119
 RANK 8467
 # 3
 PUR 852

1-CHLOROMETHYL-3,5-DIMETHYLBENZENE

M/Z
 40
 60
 80
 100
 120
 140



- 51 2,4-DINITROPHENOL
- 52 DIETHYLPHTHALATE
- 53 FLUORENE
- 54 4-CHLOROPHENYL PHENYL ETHER
- 55 4-NITROANILINE
- 56 4,6-DINITRO-2-METHYLPHENOL
- 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
- 58 4-BROMOPHENYL PHENYL ETHER
- 59 HEXACHLOROBENZENE
- 60 PENTACHLOROPHENOL
- 61 PHENANTHRENE
- 62 ANTHRACENE
- 63 DI-N-BUTYLPHTHALATE
- 64 FLUOROANTHENE
- 65 PYRENE
- 66 BUTYL BENZYLPHTHALATE
- 67 BENZ(A)ANTHRACENE
- 68 CHRYSENE
- 69 BIS(2-ETHYLHEXYL)PHTHALATE
- 70 3,3'-DICHLOROBENZIDENE
- 71 DI-N-OCTYLPHTHALATE
- 72 BENZO(B)FLUOROANTHENE
- 73 BENZO(K)FLUOROANTHENE
- 74 BENZO(A)PYRENE
- 75 INDENO(1,2,3-CD)PYRENE
- 76 DIBENZO(A,H)ANTHRACENE
- 77 BENZO(GHI)PERYLENE

SCAN	TIME	AREA (HGHT)	AMOUNT	NAME
NOT FOUND				
907	15:07	177.	0.112 NG/UL	DIETHYLPHTHALATE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1163	19:23	1170.	0.408 NG/UL	DI-N-BUTYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1493	24:53	43378.	24.204 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE <i>BK</i>
NOT FOUND				
1588	26:28	149.	0.047 NG/UL	DI-N-OCTYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				

TCA FINISHED, 14 FOUND
 FINISHED AT: 11/04/91 22:00:54

DATA: 826336ABN.TI

11/04/91 15:21:00

SAMPLE: A WATER FROM GULF STATES CRESOTE MARKED GS-PW-01, 900 ML TO 0.9 M

CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

RESP. FAC. FROM AVERAGE OF WHOLE . RL

NO	NAME
1	D-4 DICHLOROBENZENE (INTERNAL STD)
2	D-8 NAPHTHALENE (INTERNAL STD)
3	D-10 ACENAPHTHENE (INTERNAL STD.)
4	D-10 PHENANTHRENE (INTERNAL STD)
5	D-12 CHRYSENE (INTERNAL STD)
6	D-12 PERLYENE (INTERNAL STD)
7	2-FLUOROPHENOL (SURR.)
8	D-5 PHENOL (SURR.)
9	D-5 NITROBENZENE (SURR.)
10	2-FLUOROBIPHENYL (SURR.)
11	2, 4, 6- TRIBROMOPHENOL (SURR.)
12	D-14 TERPHENYL (SURR.)
13	PHENOL
14	BIS(2-CHLOROETHYL)ETHER
15	2-CHLOROPHENOL
16	M-DICHLOROBENZENE
17	P-DICHLOROBENZENE
18	BENZYL ALCOHOL
19	O-DICHLOROBENZENE
20	2-METHYL PHENOL
21	BIS(2-CHLORO ISOPROPYL)ETHER
22	4-METHYL PHENOL
23	N-NITROSODIPROPYLAMINE
24	HEXACHLOROETHANE
25	NITROBENZENE
26	ISOPHORONE
27	2-NITROPHENOL
28	2, 4-DIMETHYLPHENOL
29	BENZOIC ACID
30	BIS(2-CHLOROETHOXY) METHANE
31	2, 4-DICHLOROPHENOL
32	1, 2, 4-TRICHLOROBENZENE
33	NAPHTHALENE
34	4-CHLOROANILINE
35	HEXACHLOROBUTADIENE
36	4-CHLORO-3-METHYLPHENOL
37	2-METHYLNAPHTHALENE
38	HEXACHLOROCYCLOPENTADIENE
39	2, 4, 6-TRICHLOROPHENOL
40	2, 4, 5-TRICHLOROPHENOL
41	2-CHLORONAPHTHALENE
42	2-NITROANILINE
43	DIMETHYLPHTHALATE
44	2, 6-DINITROTOULENE
45	ACENAPHTHYLENE
46	3-NITROANILINE
47	ACENAPHTHENE
48	2, 4-DINITROPHENOL
49	4-NITROPHENOL
50	DIBENZOFURAN

45	EX	45	-820	817					152			
46	EX	46	-838	835					65			
47	EX	47	-848	845					154			
48	EX	48	-853	850					184			
49	EX	49	-860	857					139			
50	EX	50	-872	869					168			
51	EX	51	-876	873					165			
52	EX	52	-910	907					149	907		1
53	EX	53	-928	925					166			
54	EX	54	-923	920					204			
55	EX	55	-937	934					138			
56	EX	82	-940	937					198			
57	EX	57	-944	941					169			
58	EX	59	-1001	998					248			
59	EX	60	-1028	1025					284			
60	EX	61	-1056	1053					266			
61	EX	62	-1082	1079					178			
62	EX	63	-1089	1086					178			
63	EX	64	-1167	1163	1164	1	1	950	149	1163	-1	1
64	EX	65	-1276	1272					202			
65	EX	66	-1314	1310					202			
66	EX	67	-1409	1405					149			
67	EX	68	-1506	1501					228			
68	EX	69	-1514	1509					228			
69	EX	70	-1497	1492	1493	1	1	997	149	1493		1
70	EX	81	-1500	1495					252			
71	EX	71	-1595	1590					149	1588		1
72	EX	72	-1707	1701					252			
73	EX	73	-1712	1706					252			
74	EX	74	-1784	1778					252			
75	EX	75	-2118	2110					276			
76	EX	76	-2117	2109					278			
77	EX	77	-2217	2208					276			

PROCEDURE: TCA
 DATA FILE: B26336ABN
 REFERENCE: EX11
 NAME LIST: EX INITIALIZATION OPTION: 2
 REPORT: RTEX2

DIAGNOSTIC REPORT

11/04/91 21:53:21

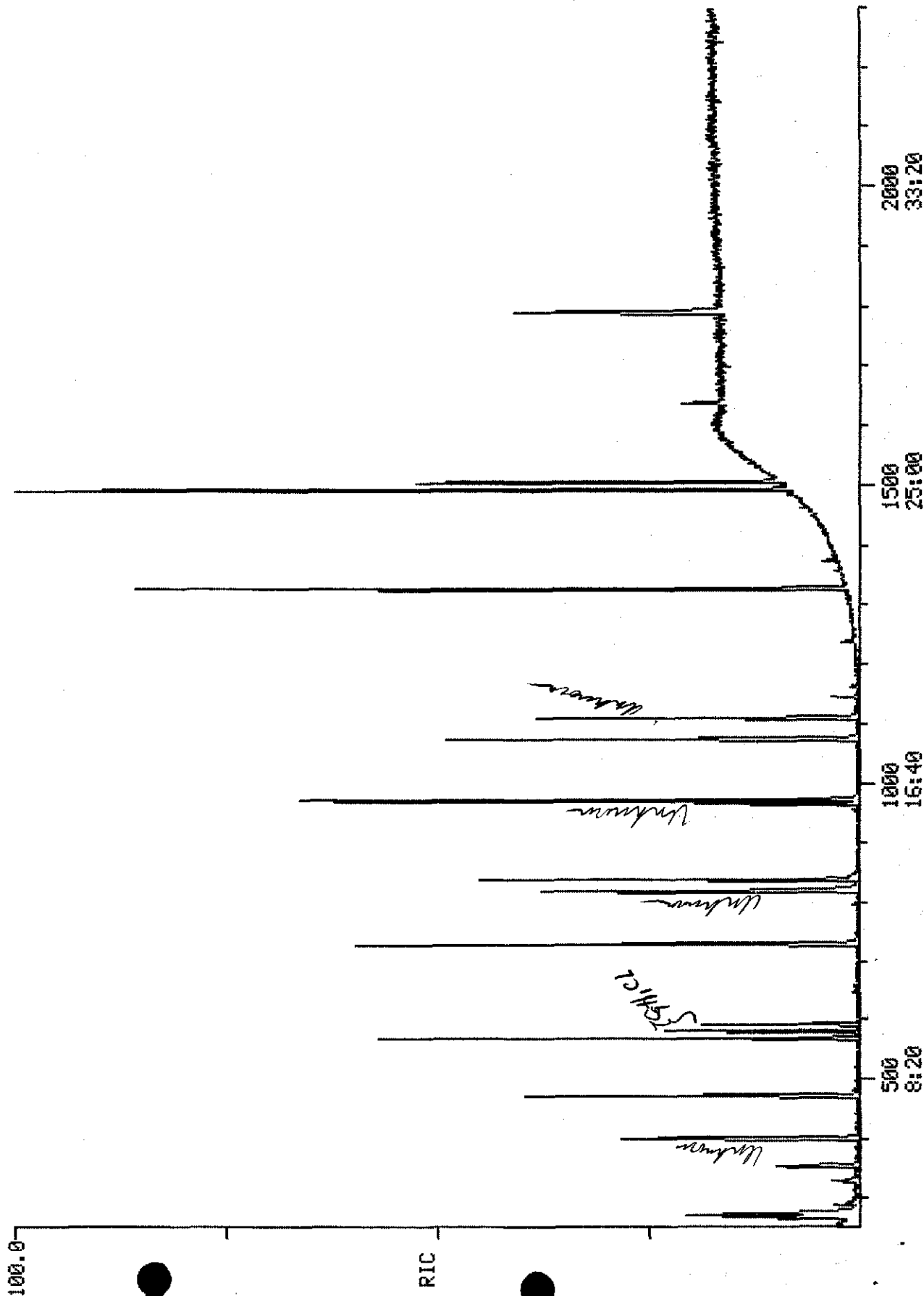
< ---- STANDARDS ---- >				--- PLUS UNKNOWN --- >				< - LIST NAMES - >	
PROC	USED	POSS	RMS	PROC	USED	POSS	RMS	STANDARD/UNKNOWN	
6	6	1	104	12	12	2	78	RTEX2/EX2	
2	2	1	0	14	2	1	0	RTEX1/EX3	
2	2	1	0	15	2	1	0	RTEX4/EX4	
3	3	1	0	12	3	1	0	RTEX5/EX5	
3	3	1	0	13	3	1	0	RTEX5/EX6	
4	4	1	105	13	5	1	93	RTEX7/EX7	
3	3	1	114	9	4	1	96	RTEX8/EX8	
3	3	1	114	10	3	1	114	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 14 FOUND

< COMPOUND >			----- SEARCH -----					>< SAT ><		----- CHRO ----- >			
NO	LIB	ENTRY	REF	PRED	SEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS
1	EX	1	-403	401	400	-1	1	991	.	150	400	.	1
2	EX	2	-573	570	570	.	1	994	.	136	570	.	1
3	EX	3	-843	840	840	.	1	995	.	164	840	.	1
4	EX	4	-1078	1074	1075	1	1	973	.	188	1075	.	1
5	EX	5	-1510	1505	1506	1	1	950	.	240	1506	.	1
6	EX	6	-1798	1792	1791	-1	1	994	.	264	1791	.	1
7	EX	7	-273	271	272	1	2	999	.	112	272	.	1
8	EX	8	-357	355	355	.	1	984	.	99	355	.	1
9	EX	9	-476	474	473	-1	1	991	.	82	473	.	1
10	EX	10	-733	730	730	.	1	999	.	172	730	.	1
11	EX	11	-969	965	966	1	1	983	.	330	966	.	1
12	EX	12	-1332	1328	1328	.	1	990	.	244	1328	.	1
13	EX	13	-358	355	.	.	.	.	.	94	.	.	.
14	EX	14	-371	368	.	.	.	.	.	93	.	.	.
15	EX	15	-382	379	.	.	.	.	.	128	.	.	.
16	EX	16	-399	396	.	.	.	.	.	146	.	.	.
17	EX	17	-405	402	.	.	.	.	.	146	.	.	.
18	EX	18	-418	415	.	.	.	.	.	108	.	.	.
19	EX	19	-428	425	.	.	.	.	.	146	.	.	.
20	EX	20	-429	426	.	.	.	.	.	108	.	.	.
21	EX	21	-435	432	.	.	.	.	.	45	.	.	.
22	EX	22	-447	444	.	.	.	.	.	108	.	.	.
23	EX	23	-453	450	.	.	.	.	.	70	.	.	.
24	EX	24	-467	464	.	.	.	.	.	117	.	.	.
25	EX	25	-478	475	.	.	.	.	.	77	.	.	.
26	EX	26	-507	504	.	.	.	.	.	82	.	.	.
27	EX	27	-521	518	.	.	.	.	.	139	.	.	.
28	EX	28	-519	516	.	.	.	.	.	122	.	.	.
29	EX	29	-532	529	.	.	.	.	.	105	.	.	.
30	EX	30	-533	530	.	.	.	.	.	93	.	.	.
31	EX	31	-551	548	.	.	.	.	.	162	.	.	.
32	EX	32	-565	562	.	.	.	.	.	180	.	.	.
33	EX	33	-576	573	.	.	.	.	.	128	.	.	.
34	EX	34	-584	581	.	.	.	.	.	127	.	.	.
35	EX	35	-597	594	.	.	.	.	.	225	.	.	.
36	EX	36	-651	648	.	.	.	.	.	107	.	.	.
37	EX	37	-677	674	.	.	.	.	.	142	.	.	.
38	EX	38	-709	706	.	.	.	.	.	237	.	.	.
39	EX	39	-722	719	.	.	.	.	.	198	.	.	.
40	EX	40	-728	725	.	.	.	.	.	198	.	.	.
41	EX	41	-752	749	.	.	.	.	.	162	.	.	.
42	EX	42	-773	770	.	.	.	.	.	65	.	.	.
43	EX	43	-801	798	.	.	.	.	.	163	.	.	.
44	EX	44	-814	811	.	.	.	.	.	145	.	.	.

RIC 11/04/91 15:21:00 DATA: 826336ABN #1 SCANS 250 TO 2300
CALI: 102891ABNBK #2
SAMPLE: A WATER FROM GULF STATES CRESCOTE MARKED GS-PW-01, 900 ML TO 0.9 M
CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI
RANGE: G 1.2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

71040.



JAN 15 1992 JH

Dept. of Environmental Quality
Bureau of Pollution Control

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR WATERS

MSCL ANALYSIS NO. 826,337

MARKED Gulf State Creosote

ANALYSIS OF Water

GS-TW-01

COMPOUNDS	MQL*	Micro g/L
Phenol	10	ND
bis(2-Chloroethyl)ether	10	ND
2-Chlorophenol	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Benzyl alcohol	20	ND
1,2-Dichlorobenzene	10	ND
2-Methylphene	10	ND
bis(2-Chloroisopropyl)ether	10	ND
4-Methylphenol	10	ND
N-Nitroso-di-n-dipropylamine	10	ND
Hexachloroethane	10	ND
Nitrobenzene	10	ND
Isophorone	10	ND
2-Nitrophenol	10	ND
2,4-Dimethylphenol	10	ND
Benzoic acid	20	ND
bis(2-Chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND
1,2,4-Trichlorobenzene	10	ND
Naphthalene	10	ND
4-Chloroaniline	20	ND
Hexachlorobutadiene	10	ND
4-Chloro-3-methylphenol	20	ND
2-Methylnaphthalene	10	ND
Hexachlorocyclopentadiene	10	ND
2,4,6-Trichlorophenol	10	ND
2,4,5-Trichlorophenol	10	ND
2-Chloronaphthalene	10	ND
2-Nitroaniline	50	ND
Dimethylphthalate	10	ND
Acenaphthylene	10	ND
2,6-Dinitrotoluene	10	ND
3-Nitroaniline	50	ND
Acenaphthene	10	ND

COMPOUNDS	MQL*	Micro g/L
2,4-Dinitrophenol	50	ND
4-Nitrophenol	50	ND
Dibenzofuran	10	ND
2,4-Dinitrotoluene	10	ND
Diethylphthalate	10	ND
4-Chlorophenyl-phenyl ether	10	ND
Fluorene	10	ND
4-Nitroaniline	50	ND
4,6-Dinitro-2-methylphenol	50	ND
N-nitrosodiphenylamine	10	ND
4-Bromophenyl-phenylether	10	ND
Hexachlorobenzene	10	ND
Pentachlorophenol	50	ND
Phenanthrene	10	ND
Anthracene	10	ND
Di-n-butylphthalate	10	ND
Fluoranthene	10	ND
Pyrene	10	ND
Butylbenzylphthalate	10	ND
3,3'-Dichlorobenzidine	20	ND
Benzo(a)anthracene	10	ND
Chrysene	10	ND
bis(2-Ethylhexyl) phthalate	10	ND
Di-n-octylphthalate	10	ND
Benzo(b)fluoranthene	10	ND
Benzo(k)fluoranthene	10	ND
Benzo(a)pyrene	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Dibenz(a,h)anthracene	10	ND
Benzo(g,h,i)perylene	10	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	38
Phenol-d5	22
Nitrobenzene-d5	78
2-Fluorobipheny	78
2,4,6-Tribromophenol	114
p-Terphenyl-d14	116

Multiply MQL's by _____

*Replaces attached sheet per
1-14-92 telecon w/Dr. Larry
Lane. JH*

No peaks above 40% of internal standard were observed.

1 Peaks above 40% of internal standard were not identified.

3 Peaks above 40% internal standard not on EPA Appendix IX. Appear to be fatty acids at a total estimated concentration of 50 µg/L.

Carl L. Alley

State Chemist

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR WATERS

MSCL ANALYSIS NO. 826,337

MARKED Gulf State Creosote

ANALYSIS OF Water

GS-TW-01

COMPOUNDS	MQL*	Micro g/L
Phenol	10	ND
bis(2-Chloroethyl)ether	10	ND
2-Chlorophenol	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Benzyl alcohol	20	ND
1,2-Dichlorobenzene	10	ND
2-Methylphene	10	ND
bis(2-Chloroisopropyl)ether	10	ND
4-Methylphenol	10	ND
N-Nitroso-di-n-dipropylamine	10	ND
Hexachloroethane	10	ND
Nitrobenzene	10	ND
Isophorone	10	ND
2-Nitrophenol	10	ND
2,4-Dimethylphenol	10	ND
Benzoic acid	20	ND
bis(2-Chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND
1,2,4-Trichlorobenzene	10	ND
Naphthalene	10	ND
4-Chloroaniline	20	ND
Hexachlorobutadiene	10	ND
4-Chloro-3-methylphenol	20	ND
2-Methylnaphthalene	10	ND
Hexachlorocyclopentadiene	10	ND
2,4,6-Trichlorophenol	10	ND
2,4,5-Trichlorophenol	10	ND
2-Chloronaphthalene	10	ND
2-Nitroaniline	50	ND
Dimethylphthalate	10	ND
Acenaphthylene	10	ND
2,6-Dinitrotoluene	10	ND
3-Nitroaniline	50	ND
Acenaphthene	10	ND

COMPOUNDS	MQL*	Micro g/L
2,4-Dinitrophenol	50	ND
4-Nitrophenol	50	ND
Dibenzofuran	10	ND
2,4-Dinitrotoluene	10	ND
Diethylphthalate	10	ND
4-Chlorophenyl-phenyl ether	10	ND
Fluorene	10	ND
4-Nitroaniline	50	ND
4,6-Dinitro-2-methylphenol	50	ND
N-nitrosodiphenylamine	10	ND
4-Bromophenyl-phenylether	10	ND
Hexachlorobenzene	10	ND
Pentachlorophenol	50	ND
Phenanthrene	10	ND
Anthracene	10	ND
Di-n-butylphthalate	10	ND
Fluoranthene	10	ND
Pyrene	10	ND
Butylbenzylphthalate	10	ND
3,3'-Dichlorobenzidine	20	ND
Benzo(a)anthracene	10	ND
Chrysene	10	ND
bis(2-Ethylhexyl)phthalate	10	ND
Di-n-octylphthalate	10	ND
Benzo(b)fluoranthene	10	ND
Benzo(k)fluoranthene	10	ND
Benzo(a)pyrene	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Dibenz(a,h)anthracene	10	ND
Benzo(g,h,i)perylene	10	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	38
Phenol-d5	22
Nitrobenzene-d5	78
2-Fluorobipheny	78
2,4,6-Tribromophenol	114
p-Terphenyl-d14	116

Multiply MQL's by _____

- _____ No peaks above 40% of internal standard were observed.
- 1 Peaks above 40% of internal standard were not identified.
- 3 Peaks above 40% internal standard not on EPA Appendix IX.
- _____ Additional peaks were observed but not examined.

Carl H. Alley

State Chemist

- 51 2,4-DINITROPHENOL
 52 DIETHYLPHTHALATE
 53 FLUORENE
 54 4-CHLOROPHENYL PHENYL ETHER
 55 4-NITROANILINE
 56 4,6-DINITRO-2-METHYLPHENOL
 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
 58 4-BROMOPHENYL PHENYL ETHER
 59 HEXACHLOROBENZENE
 60 PENTACHLOROPHENOL
 61 PHENANTHRENE
 62 ANTHRACENE
 63 DI-N-BUTYLPHTHALATE
 64 FLUOROANTHENE
 65 PYRENE
 66 BUTYL BENZYLPHTHALATE
 67 BENZ(A)ANTHRACENE
 68 CHRYSENE
 69 BIS(2-ETHYLHEXYL)PHTHALATE
 70 3,3'-DICHLOROBENZIDENE
 71 DI-N-OCTYLPHTHALATE
 72 BENZO(B)FLUOROANTHENE
 73 BENZO(K)FLUOROANTHENE
 74 BENZO(A)PYRENE
 75 INDENO(1,2,3-CD)PYRENE
 76 DIBENZO(A,H)ANTHRACENE
 77 BENZO(GHI)PERYLENE

SCAN	TIME	AREA (HGHT)	AMOUNT	NAME
NOT FOUND				
906	15:06	638.	0.375 NG/UL	DIETHYLPHTHALATE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1163	19:23	2348.	0.637 NG/UL	DI-N-BUTYLPHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
1405	23:25	754.	0.549 NG/UL	BUTYL BENZYLPHTHALATE
NOT FOUND				
NOT FOUND				
1493	24:53	2976.	1.514 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				

TCA FINISHED, 16 FOUND
 FINISHED AT: 11/04/91 22:09:18

SCAN	TIME	AREA (AUG 1)	AMOUNT	NAME
399	6:39	22122.	20.000 NG/UL	D-4 DICHLOROBENZENE (INTERNA
569	9:29	46043.	20.000 NG/UL	D-8 NAPHTHALENE (INTERNAL STD
839	13:59	24145.	20.000 NG/UL	D-10 ACENAPHTHENE (INTERNAL
1074	17:54	51330.	20.000 NG/UL	D-10 PHENANTHRENE (INTERNAL
1505	25:05	34392.	20.000 NG/UL	D-12 CHRYSENE (INTERNAL STD)
1791	29:51	28099.	20.000 NG/UL	D-12 PERLYENE (INTERNAL STD)
271	4:31	8707.	9.363 NG/UL	2-FLUOROPHENOL (SURR.) 38
354	5:54	5657.	5.437 NG/UL	D-5 PHENOL (SURR.) 22
472	7:52	19347.	19.429 NG/UL	D-5 NITROBENZENE (SURR.) 78
729	12:09	34817.	19.537 NG/UL	2-FLUOROBIPHENYL (SURR.) 78
965	16:05	5572.	28.442 NG/UL	2,4,6- TRIBROMOPHENOL (SURR.) 114
1328	22:08	71559.	29.125 NG/UL	D-14 TERPHENYL (SURR.) 116
355	5:55	334.	0.300 NG/UL	PHENOL OK

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

429 7:09 309. 0.191 NG/UL BIS(2-CHLORO ISOPROPYL) ETHER

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

523 8:43 447. 0.715 NG/UL BENZOIC ACID

NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND
 NOT FOUND

QUANTITATION REPORT FILE: 826337ABN

DATA: 826337ABN.TI
 11/04/91 16:21:00
 SAMPLE: GULF STATES CRESOTE WATER MARKED GS-TW-01, 1000ML TO 1.0 ML
 CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI
 FORMULA: 0 INSTRUMENT: 4500 WEIGHT: 0.000
 SUBMITTED BY: OPC ANALYST: SMATHERS ACCT. No.: IAS

AMOUNT=AREA * REF AMNT / (REF AREA * RESP FACT)
 RESP. FAC. FROM AVERAGE OF ... HOLE . RL

DATA: 826337ABN.TI

11/04/91 16:21:00

SAMPLE: GULF STATES CRESOTE WATER MARKED GS-TW-01, 1000ML TO 1.0 ML

CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

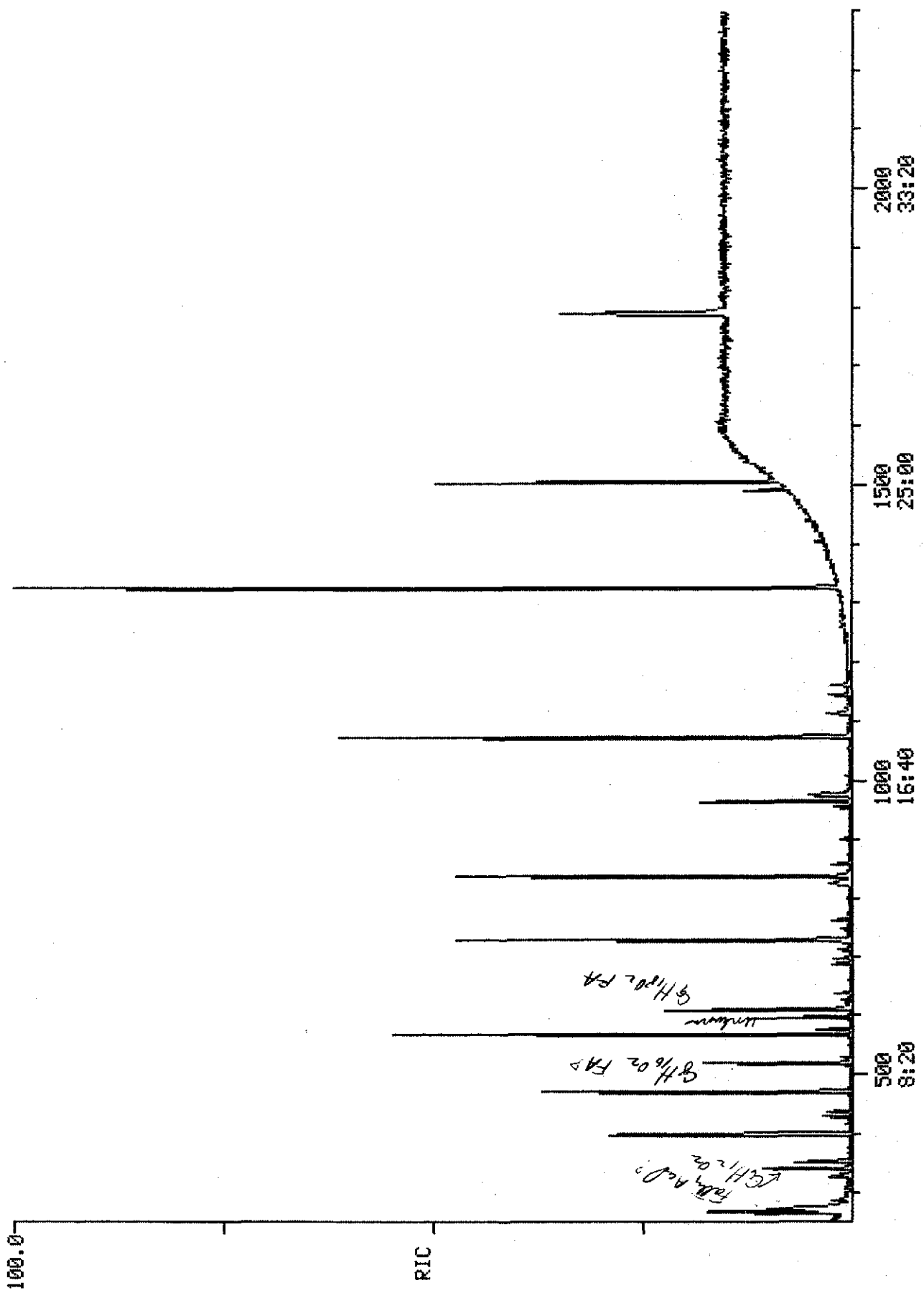
RESP. FAC. FROM AVERAGE OF WHOLE . RL

No	NAME
1	D-4 DICHLOROBENZENE (INTERNAL STD)
2	D-8 NAPHTHALENE (INTERNAL STD)
3	D-10 ACENAPHTHENE (INTERNAL STD.)
4	D-10 PHENANTHRENE (INTERNAL STD)
5	D-12 CHRYSENE (INTERNAL STD)
6	D-12 PERLYENE (INTERNAL STD)
7	2-FLUOROPHENOL (SURR.)
8	D-5 PHENOL (SURR.)
9	D-5 NITROBENZENE (SURR.)
10	2-FLUOROBIPHENYL (SURR.)
11	2, 4, 6- TRIBROMOPHENOL (SURR.)
12	D-14 TERPHENYL (SURR.)
13	PHENOL
14	BIS(2-CHLOROETHYL)ETHER
15	2-CHLOROPHENOL
16	M-DICHLOROBENZENE
17	P-DICHLOROBENZENE
18	BENZYL ALCOHOL
19	O-DICHLOROBENZENE
20	2-METHYL PHENOL
21	BIS(2-CHLORO ISOPROPYL)ETHER
22	4-METHYL PHENOL
23	N-NITROSODIPROPYLAMINE
24	HEXACHLOROETHANE
25	NITROBENZENE
26	ISOPHORONE
27	2-NITROPHENOL
28	2, 4-DIMETHYLPHENOL
29	BENZOIC ACID
30	BIS(2-CHLOROETHOXY) METHANE
31	2, 4-DICHLOROPHENOL
32	1, 2, 4-TRICHLOROBENZENE
33	NAPHTHALENE
34	4-CHLOROANILINE
35	HEXACHLOROBUTADIENE
36	4-CHLORO-3-METHYLPHENOL
37	2-METHYLNAPHTHALENE
38	HEXACHLOROCYCLOPENTADIENE
39	2, 4, 6-TRICHLOROPHENOL
40	2, 4, 5-TRICHLOROPHENOL
41	2-CHLORONAPHTHALENE
42	2-NITROANILINE
43	DIMETHYLPHTHALATE
44	2, 6-DINITROTOULENE
45	ACENAPHTHYLENE
46	3-NITROANILINE
47	ACENAPHTHENE
48	2, 4-DINITROPHENOL
49	4-NITROPHENOL
50	DIBENZOFURAN

44	EX	44	-814	810	.	.	.	.	.	.	180	.	.	.	.	.	.	.
45	EX	45	-820	816	.	.	.	.	.	.	152	.	.	.	.	.	.	.
46	EX	46	-838	834	.	.	.	.	.	.	65	.	.	.	.	.	.	.
47	EX	47	-848	844	.	.	.	.	.	.	154	.	.	.	.	.	.	.
48	EX	48	-853	849	.	.	.	.	.	.	184	.	.	.	.	.	.	.
49	EX	49	-860	856	.	.	.	.	.	.	139	.	.	.	.	.	.	.
50	EX	50	-872	868	.	.	.	.	.	.	168	.	.	.	.	.	.	.
51	EX	51	-876	872	.	.	.	.	.	.	165	.	.	.	.	.	.	.
52	EX	52	-910	906	.	.	.	.	.	.	149	906	.	.	.	.	.	1
53	EX	53	-928	924	.	.	.	.	.	.	166	.	.	.	.	.	.	.
54	EX	54	-923	919	.	.	.	.	.	.	204	.	.	.	.	.	.	.
55	EX	55	-937	933	.	.	.	.	.	.	138	.	.	.	.	.	.	.
56	EX	82	-940	936	.	.	.	.	.	.	198	.	.	.	.	.	.	.
57	EX	57	-944	940	.	.	.	.	.	.	169	.	.	.	.	.	.	.
58	EX	59	-1001	997	.	.	.	.	.	.	248	.	.	.	.	.	.	.
59	EX	60	-1028	1024	.	.	.	.	.	.	284	.	.	.	.	.	.	.
60	EX	61	-1056	1052	.	.	.	.	.	.	266	.	.	.	.	.	.	.
61	EX	62	-1082	1078	.	.	.	.	.	.	178	.	.	.	.	.	.	.
62	EX	63	-1089	1085	.	.	.	.	.	.	178	.	.	.	.	.	.	.
63	EX	64	-1167	1163	1163	.	.	1	957	.	149	1163	.	.	.	.	.	1
64	EX	65	-1276	1271	.	.	.	.	.	.	202	.	.	.	.	.	.	.
65	EX	66	-1314	1310	.	.	.	.	.	.	202	.	.	.	.	.	.	.
66	EX	67	-1409	1405	1405	.	.	1	993	.	149	1405	.	.	.	.	.	1
67	EX	68	-1506	1501	.	.	.	.	.	.	228	.	.	.	.	.	.	.
68	EX	69	-1514	1509	.	.	.	.	.	.	228	.	.	.	.	.	.	.
69	EX	70	-1497	1492	1493	.	1	1	991	.	149	1493	.	.	.	.	.	1
70	EX	81	-1500	1495	.	.	.	.	.	.	252	.	.	.	.	.	.	.
71	EX	71	-1595	1589	.	.	.	.	.	.	149	.	.	.	.	.	.	.
72	EX	72	1707	1701	.	.	.	.	.	.	252	.	.	.	.	.	.	.
73	EX	73	-1712	1706	.	.	.	.	.	.	252	.	.	.	.	.	.	.
74	EX	74	-1784	1778	.	.	.	.	.	.	252	.	.	.	.	.	.	.
75	EX	75	-2118	2110	.	.	.	.	.	.	276	.	.	.	.	.	.	.
76	EX	76	-2117	2109	.	.	.	.	.	.	278	.	.	.	.	.	.	.
77	EX	77	-2217	2209	.	.	.	.	.	.	276	.	.	.	.	.	.	.

RIC 11/04/91 16:21:00 DATA: 826337ABN #1 SCANS 250 TO 2300
 CALI: 826337ABN #2
 SAMPLE: GULF STATES CRESOTE WATER MARKED GS-TW-01, 1000ML TO 1.0 ML
 CONDS.: DESC IM, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI
 RANGE: G 1,2300 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

79232.



SCAN TIME

PROCEDURE: TCA
 DATA FILE: B26337ABN
 REFERENCE: EX11
 NAME LIST: EX
 REPORT: RTEX2

DIAGNOSTIC REPORT

11/04/91 22:01:45

INITIALIZATION OPTION: 2 PROCESSING OPTION: 3

< ---- STANDARDS ---- >				>< --- PLUS UNKNOWN --- ><				>< - LIST NAMES - >	
PROC	USED	FOSS	RMS	PROC	USED	FOSS	RMS	STANDARD/UNKNOWN	
6	6	1	99	12	12	2	80	RTEX2/EX2	
2	2	1	0	14	2	1	0	RTEX1/EX3	
2	2	1	0	15	3	1	391	RTEX4/EX4	
3	3	1	0	12	3	1	0	RTEX5/EX5	
3	3	1	0	13	3	1	0	RTEX5/EX6	
4	4	1	119	13	5	1	99	RTEX7/EX7	
3	3	1	146	9	5	1	105	RTEX8/EX8	
3	3	1	146	10	3	1	146	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 16 FOUND

< COMPOUND ><			SEARCH					>< SAT ><		CHRO			
NO	LIB	ENTRY	REF	PRED	GEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS
1	EX	1	-403	399	399	.	1	989	.	150	399	.	1
2	EX	2	-573	569	569	.	1	994	.	136	569	.	1
3	EX	3	-843	839	839	.	1	997	.	164	839	.	1
4	EX	4	-1078	1073	1074	1	1	965	.	188	1074	.	1
5	EX	5	-1510	1505	1506	1	1	964	.	240	1505	-1	1
6	EX	6	-1798	1792	1791	-1	1	993	.	264	1791	.	1
7	EX	7	-273	270	271	1	2	998	.	112	271	.	1
8	EX	8	-357	354	354	.	1	981	.	99	354	.	1
9	EX	9	-476	473	472	-1	1	996	.	82	472	.	1
10	EX	10	-733	729	729	.	1	999	.	172	729	.	1
11	EX	11	-969	965	965	.	1	987	.	330	965	.	1
12	EX	12	-1332	1327	1328	1	1	996	.	244	1328	.	1
13	EX	13	-358	354	.	.	.	.	.	94	355	.	1
14	EX	14	-371	367	.	.	.	.	.	93	.	.	.
15	EX	15	-382	378	.	.	.	.	.	128	.	.	.
16	EX	16	-399	395	.	.	.	.	.	146	.	.	.
17	EX	17	-405	401	.	.	.	.	.	146	.	.	.
18	EX	18	-418	414	.	.	.	.	.	108	.	.	.
19	EX	19	-428	424	.	.	.	.	.	146	.	.	.
20	EX	20	-429	425	.	.	.	.	.	108	.	.	.
21	EX	21	-435	431	.	.	.	.	.	45	429	.	1
22	EX	22	-447	443	.	.	.	.	.	108	.	.	.
23	EX	23	-453	449	.	.	.	.	.	70	.	.	.
24	EX	24	-467	463	.	.	.	.	.	117	.	.	.
25	EX	25	-478	470	.	.	.	.	.	77	.	.	.
26	EX	26	-507	499	.	.	.	.	.	82	.	.	.
27	EX	27	-521	513	.	.	.	.	.	139	.	.	.
28	EX	28	-519	511	.	.	.	.	.	122	.	.	.
29	EX	29	-532	525	522	-3	1	991	.	105	523	1	1
30	EX	30	-533	526	.	.	.	.	.	93	.	.	.
31	EX	31	-551	544	.	.	.	.	.	162	.	.	.
32	EX	32	-565	558	.	.	.	.	.	180	.	.	.
33	EX	33	-576	569	.	.	.	.	.	128	.	.	.
34	EX	34	-584	577	.	.	.	.	.	127	.	.	.
35	EX	35	-597	590	.	.	.	.	.	225	.	.	.
36	EX	36	-651	645	.	.	.	.	.	107	.	.	.
37	EX	37	-677	671	.	.	.	.	.	142	.	.	.
38	EX	38	-709	705	.	.	.	.	.	237	.	.	.
39	EX	39	-722	718	.	.	.	.	.	198	.	.	.
40	EX	40	-728	724	.	.	.	.	.	198	.	.	.
41	EX	41	-752	748	.	.	.	.	.	162	.	.	.
42	EX	42	-773	769	.	.	.	.	.	65	.	.	.
43	EX	43	-801	797	.	.	.	.	.	163	.	.	.
44	EX	44	-814	810	.	.	.	.	.	145	.	.	.

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR WATERS

RECEIVED

JAN 15 1992

Dept. of Environmental Quality
State Water Control

MSCL ANALYSIS NO. 826,338

MARKED Gulf State

ANALYSIS OF Water

GS-TW-02

COMPOUNDS

COMPOUNDS	MQL*	Micro g/L
Phenol	10	ND
bis(2-Chloroethyl)ether	10	ND
2-Chlorophenol	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Benzyl alcohol	20	ND
1,2-Dichlorobenzene	10	ND
2-Methylphene	10	ND
bis(2-Chloroisopropyl)ether	10	ND
4-Methylphenol	10	ND
N-Nitroso-di-n-dipropylamine	10	ND
Hexachloroethane	10	ND
Nitrobenzene	10	ND
Isophorone	10	ND
2-Nitrophenol	10	ND
2,4-Dimethylphenol	10	ND
Benzoic acid	20	ND
bis(2-Chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND
1,2,4-Trichlorobenzene	10	ND
Naphthalene	10	ND
4-Chloroaniline	20	ND
Hexachlorobutadiene	10	ND
4-Chloro-3-methylphenol	20	ND
2-Methylnaphthalene	10	ND
Hexachlorocyclopentadiene	10	ND
2,4,6-Trichlorophenol	10	ND
2,4,5-Trichlorophenol	10	ND
2-Chloronaphthalene	10	ND
2-Nitroaniline	50	ND
Dimethylphthalate	10	ND
Acenaphthylene	10	ND
2,6-Dinitrotoluene	10	ND
3-Nitroaniline	50	ND
Acenaphthene	10	ND

COMPOUNDS

COMPOUNDS	MQL*	Micro g/L
2,4-Dinitrophenol	50	ND
4-Nitrophenol	50	ND
Dibenzofuran	10	ND
2,4-Dinitrotoluene	10	ND
Diethylphthalate	10	ND
4-Chlorophenyl-phenyl ether	10	ND
Fluorene	10	ND
4-Nitroaniline	50	ND
4,6-Dinitro-2-methylphenol	50	ND
N-nitrosodiphenylamine	10	ND
4-Bromophenyl-phenylether	10	ND
Hexachlorobenzene	10	ND
Pentachlorophenol	50	ND
Phenanthrene	10	ND
Anthracene	10	ND
Di-n-butylphthalate	10	ND
Fluoranthene	10	ND
Pyrene	10	ND
Butylbenzylphthalate	10	ND
3,3'-Dichlorobenzidine	20	ND
Benzo(a)anthracene	10	ND
Chrysene	10	ND
bis(2-Ethylhexyl)phthalate	10	ND
Di-n-octylphthalate	10	ND
Benzo(b)fluoranthene	10	ND
Benzo(k)fluoranthene	10	ND
Benzo(a)pyrene	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Dibenz(a,h)anthracene	10	ND
Benzo(g,h,i)perylene	10	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	43
Phenol-d5	28
Nitrobenzene-d5	85
2-Fluorobipheny	82
2,4,6-Tribromophenol	126
p-Terphenyl-d14	100

Multiply MQL's by _____

Replaces attached sheet per
1-14-92 telecom w/ Dr. Larry
Lane. JH

No peaks above 40% of internal standard were observed.

17 Peaks above 40% of internal standard were not identified.

2 Peaks above 40% internal standard not on EPA Appendix IX.

Appear to be fatty acids at a total estimated concentration of 125 µg/L.

Carol L. Alley

State Chemist

TARGET COMPOUND LIST

SEMIVOLATILES DATA SHEET FOR WATERS

MSCL ANALYSIS NO. 826,338

MARKED Gulf State Creosote

ANALYSIS OF Water

GS-TW-02

COMPOUNDS	MQL*	Micro g/L
Phenol	10	ND
bis(2-Chloroethyl)ether	10	ND
2-Chlorophenol	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
Benzyl alcohol	20	ND
1,2-Dichlorobenzene	10	ND
2-Methylphene	10	ND
bis(2-Chloroisopropyl)ether	10	ND
4-Methylphenol	10	ND
N-Nitroso-di-n-dipropylamine	10	ND
Hexachloroethane	10	ND
Nitrobenzene	10	ND
Isophorone	10	ND
2-Nitrophenol	10	ND
2,4-Dimethylphenol	10	ND
Benzoic acid	20	ND
bis(2-Chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND
1,2,4-Trichlorobenzene	10	ND
Naphthalene	10	ND
4-Chloroaniline	20	ND
Hexachlorobutadiene	10	ND
4-Chloro-3-methylphenol	20	ND
2-Methylnaphthalene	10	ND
Hexachlorocyclopentadiene	10	ND
2,4,6-Trichlorophenol	10	ND
2,4,5-Trichlorophenol	10	ND
2-Chloronaphthalene	10	ND
2-Nitroaniline	50	ND
Dimethylphthalate	10	ND
Acenaphthylene	10	ND
2,6-Dinitrotoluene	10	ND
3-Nitroaniline	50	ND
Acenaphthene	10	ND

COMPOUNDS	MQL*	Micro g/L
2,4-Dinitrophenol	50	ND
4-Nitrophenol	50	ND
Dibenzofuran	10	ND
2,4-Dinitrotoluene	10	ND
Diethylphthalate	10	ND
4-Chlorophenyl-phenyl ether	10	ND
Fluorene	10	ND
4-Nitroaniline	50	ND
4,6-Dinitro-2-methylphenol	50	ND
N-nitrosodiphenylamine	10	ND
4-Bromophenyl-phenylether	10	ND
Hexachlorobenzene	10	ND
Pentachlorophenol	50	ND
Phenanthrene	10	ND
Anthracene	10	ND
Di-n-butylphthalate	10	ND
Fluoranthene	10	ND
Pyrene	10	ND
Butylbenzylphthalate	10	ND
3,3'-Dichlorobenzidine	20	ND
Benzo(a)anthracene	10	ND
Chrysene	10	ND
bis(2-Ethylhexyl)phthalate	10	ND
Di-n-octylphthalate	10	ND
Benzo(b)fluoranthene	10	ND
Benzo(k)fluoranthene	10	ND
Benzo(a)pyrene	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Dibenz(a,h)anthracene	10	ND
Benzo(g,h,i)perylene	10	ND

*ND = None Detected

MQL = Minimum Quantifiable Level

SURROGATES	RECOVERY (%)
2-Fluorophenol	43
Phenol-d5	28
Nitrobenzene-d5	85
2-Fluorobipheny	82
2,4,6-Tribromophenol	126
p-Terphenyl-d14	100

Multiply MQL's by _____

- _____ No peaks above 40% of internal standard were observed.
- 17 Peaks above 40% of internal standard were not identified.
- 2 Peaks above 40% internal standard not on EPA Appendix IX.
- _____ Additional peaks were observed but not examined.

Carl S. Alley

 State Chemist

- 51 2,4-DINITROTOLOUENE
- 52 DIETHYLPHTHALATE
- 53 FLUORENE
- 54 4-CHLOROPHENYL PHENYL ETHER
- 55 4-NITROANILINE
- 56 4,6-DINITRO-2-METHYLPHENOL
- 57 N-NITROSO DIPHENYL AMINE (DIPHENYL AMINE)
- 58 4-BROMOPHENYL PHENYL ETHER
- 59 HEXACHLOROBENZENE
- 60 PENTACHLOROPHENOL
- 61 PHENANTHRENE
- 62 ANTHRACENE
- 63 DI-N-BUTYLPHTHALATE
- 64 FLUOROANTHENE
- 65 PYRENE
- 66 BUTYL BENZYLPHTHALATE
- 67 BENZO(A)ANTHRACENE
- 68 CHRYSENE
- 69 BIS(2-ETHYLHEXYL)PHTHALATE
- 70 3,3'-DICHLOROBENZIDENE
- 71 DI-N-OCTYLPHTHALATE
- 72 BENZO(B)FLUOROANTHENE
- 73 BENZO(K)FLUOROANTHENE
- 74 BENZO(A)PYRENE
- 75 INDENO(1,2,3-CD)PYRENE
- 76 DIBENZO(A,H)ANTHRACENE
- 77 BENZO(GHI)PERYLENE

SCAN	TIME	AREA (HGT)	AMOUNT	NAME
NOT FOUND				
905	15:05	2709.	1.444 NG/UL	DIETHYLPHTHALATE
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
NOT FOUND				
1077	17:57	196.	0.062 NG/UL	PHENANTHRENE
NOT FOUND				
1162	19:22	5114.	1.261 NG/UL	DI-N-BUTYLPHTHALATE <i>BK(0143)</i>
NOT FOUND				
NOT FOUND				
1405	23:25	3398.	1.827 NG/UL	BUTYL BENZYLPHTHALATE
NOT FOUND				
NOT FOUND				
1492	24:52	14950.	5.614 NG/UL	BIS(2-ETHYLHEXYL)PHTHALATE <i>BK</i>
NOT FOUND				
NOT FOUND				
NOT FOUND				
1704	28:24	246.	0.085 NG/UL	BENZO(K)FLUOROANTHENE
1778	29:38	355.	0.131 NG/UL	BENZO(A)PYRENE
NOT FOUND				
NOT FOUND				
NOT FOUND				

TCA FINISHED, 21 FOUND
 FINISHED AT: 11/04/91 22:18:03

DATA: 826338ABN.TI

11/04/91 17:33:00

SAMPLE: GULF STATES CRESTOE WATER MARKED GS-TW-02, 1000 ML TO 1.0 ML

CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI

FORMULA: 0

INSTRUMENT: 4500

WEIGHT: 0.000

SUBMITTED BY: OPC

ANALYST: SMATHERS

ACCT. No.: IAS

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

RESP. FAC. FROM AVERAGE OF WHOLE .RL

No	NAME
1	D-4 DICHLOROBENZENE (INTERNAL STD)
2	D-8 NAPHTHALENE (INTERNAL STD)
3	D-10 ACENAPHTHENE (INTERNAL STD.)
4	D-10 PHENANTHRENE (INTERNAL STD)
5	D-12 CHRYSENE (INTERNAL STD)
6	D-12 PERLYENE (INTERNAL STD)
7	2-FLUOROPHENOL (SURR.)
8	D-5 PHENOL (SURR.)
9	D-5 NITROBENZENE (SURR.)
10	2-FLUOROBIPHENYL (SURR.)
11	2, 4, 6- TRIBROMOPHENOL (SURR.)
12	D-14 TERPHEHYL (SURR.)
13	PHENOL
14	BIS(2-CHLOROETHYL)ETHER
15	2-CHLOROPHENOL
16	M-DICHLOROBENZENE
17	P-DICHLOROBENZENE
18	BENZYL ALCOHOL
19	O-DICHLOROBENZENE
20	2-METHYL PHENOL
21	BIS(2-CHLORO ISOPROPYL)ETHER
22	4-METHYL PHENOL
23	N-NITROSODIPROPYLAMINE
24	HEXACHLOROETHANE
25	NITROBENZENE
26	ISOPHORONE
27	2-NITROPHENOL
28	2, 4-DIMETHYLPHENOL
29	BENZOIC ACID
30	BIS(2-CHLOROETHOXY) METHANE
31	2, 4-DICHLOROPHENOL
32	1, 2, 4-TRICHLOROBENZENE
33	NAPHTHALENE
34	4-CHLOROANILINE
35	HEXACHLOROBUTADIENE
36	4-CHLORO-3-METHYLPHENOL
37	2-METHYLNAPHTHALENE
38	HEXACHLOROCYCLOPENTADIENE
39	2, 4, 6-TRICHLOROPHENOL
40	2, 4, 5-TRICHLOROPHENOL
41	2-CHLORONAPHTHALENE
42	2-NITROANILINE
43	DIMETHYLPHTHALATE
44	2, 6-DINITROTOLUENE
45	ACENAPHTHYLENE
46	3-NITROANILINE
47	ACENAPHTHENE
48	2, 4-DINITROPHENOL
49	4-NITROPHENOL
50	DIBENZOFURAN

44	EX	44	-814	810	.	.	.	.	.	183	.	.	.
45	EX	45	-820	816	.	.	.	.	.	152	.	.	.
46	EX	46	-838	834	.	.	.	.	.	65	.	.	.
47	EX	47	-848	845	.	.	.	.	.	154	.	.	.
48	EX	48	-853	850	.	.	.	.	.	184	.	.	.
49	EX	49	-860	857	864	7	1	964	.	139	864	.	1
50	EX	50	-872	869	.	.	.	.	.	168	.	.	.
51	EX	51	-876	873	.	.	.	.	.	165	.	.	.
52	EX	52	-910	907	905	-2	1	959	.	149	905	.	1
53	EX	53	-928	925	.	.	.	.	.	166	.	.	.
54	EX	54	-923	920	.	.	.	.	.	204	.	.	.
55	EX	55	-937	934	.	.	.	.	.	138	.	.	.
56	EX	82	-940	937	.	.	.	.	.	198	.	.	.
57	EX	57	-944	940	.	.	.	.	.	169	.	.	.
58	EX	59	-1001	996	.	.	.	.	.	248	.	.	.
59	EX	60	-1028	1023	.	.	.	.	.	284	.	.	.
60	EX	61	-1056	1051	.	.	.	.	.	266	.	.	.
61	EX	62	-1082	1077	.	.	.	.	.	178	1077	.	1
62	EX	63	-1089	1084	.	.	.	.	.	178	.	.	.
63	EX	64	-1167	1162	1162	.	1	996	.	149	1162	.	1
64	EX	65	-1276	1271	.	.	.	.	.	202	.	.	.
65	EX	66	-1314	1310	.	.	.	.	.	202	.	.	.
66	EX	67	-1409	1404	1405	1	3	996	.	149	1405	.	1
67	EX	68	-1506	1501	.	.	.	.	.	228	.	.	.
68	EX	69	-1514	1509	.	.	.	.	.	228	.	.	.
69	EX	70	-1497	1492	1492	.	2	999	.	149	1492	.	1
70	EX	81	-1500	1495	.	.	.	.	.	252	.	.	.
71	EX	71	-1595	1589	1590	1	4	937	.	149	.	.	.
72	EX	72	1707	1701	.	.	.	.	.	252	.	.	.
73	EX	73	-1712	1706	.	.	.	.	.	252	1704	.	1
74	EX	74	-1784	1778	.	.	.	.	.	252	1778	.	2
75	EX	75	-2118	2110	.	.	.	.	.	276	.	.	.
76	EX	76	-2117	2109	.	.	.	.	.	278	.	.	.
77	EX	77	-2217	2209	.	.	.	.	.	276	.	.	.

PROCEDURE: TCA
 DATA FILE: B26338ASN
 REFERENCE: EX11
 NAME LIST: EX
 REPORT: RTEX2

DIAGNOSTIC REPORT

11/04/91 22:10:13

< ---- STANDARDS ---- >				>< --- PLUS UNKNOWN --- ><				>< - LIST NAMES - >	
PROC	USED	POSS	RMS	PROC	USED	POSS	RMS	STANDARD/UNKNOWN	
6	6	1	76	12	12	2	66	RTEX2/EX2	
2	2	1	0	14	4	1	48	RTEX1/EX3	
2	2	1	0	15	3	1	401	RTEX4/EX4	
3	3	1	82	12	3	1	82	RTEX5/EX5	
3	3	1	82	13	5	1	443	RTEX5/EX6	
4	4	1	102	13	5	1	83	RTEX7/EX7	
3	3	1	65	9	5	6	68	RTEX8/EX8	
3	3	1	65	10	4	4	69	RTEX8/EX9	

77 COMPOUNDS PROCESSED, 21 FOUND

< COMPOUND ><			SEARCH					>< SAT ><		>< CHRO ><			
NO	LIB	ENTRY	REF	PRED	SEL	DELTA	PEAKS	FIT	PEAKS	M/Z	TOP	DELTA	PEAKS
1	EX	1	-403	399	399	.	1	990	.	150	399	.	1
2	EX	2	-573	569	569	.	1	995	.	136	569	.	1
3	EX	3	-843	839	838	-1	1	996	.	164	838	.	1
4	EX	4	-1078	1073	1074	1	1	981	.	188	1073	-1	1
5	EX	5	-1510	1504	1505	1	1	958	.	240	1505	.	1
6	EX	6	-1798	1792	1791	-1	1	994	.	264	1791	.	1
7	EX	7	-273	270	271	1	2	998	.	112	271	.	1
8	EX	8	-357	354	354	.	1	983	.	99	354	.	1
9	EX	9	-476	473	472	-1	1	999	.	82	472	.	1
10	EX	10	-733	729	729	.	1	998	.	172	729	.	1
11	EX	11	-969	964	964	.	1	965	.	330	964	.	1
12	EX	12	-1332	1327	1327	.	1	991	.	244	1327	.	1
13	EX	13	-358	355	355	.	1	999	.	94	355	.	1
14	EX	14	-371	368	.	.	.	.	.	93	.	.	.
15	EX	15	-382	378	.	.	.	.	.	128	.	.	.
16	EX	16	-399	395	.	.	.	.	.	146	.	.	.
17	EX	17	-405	401	.	.	.	.	.	146	.	.	.
18	EX	18	-418	414	.	.	.	.	.	108	.	.	.
19	EX	19	-428	424	.	.	.	.	.	146	.	.	.
20	EX	20	-429	425	.	.	.	.	.	108	.	.	.
21	EX	21	-435	431	.	.	.	.	.	45	.	.	.
22	EX	22	-447	443	443	.	1	907	.	108	444	1	1
23	EX	23	-453	449	.	.	.	.	.	70	.	.	.
24	EX	24	-467	463	.	.	.	.	.	117	.	.	.
25	EX	25	-478	470	.	.	.	.	.	77	.	.	.
26	EX	26	-507	499	.	.	.	.	.	82	.	.	.
27	EX	27	-521	514	.	.	.	.	.	139	.	.	.
28	EX	28	-519	512	.	.	.	.	.	122	.	.	.
29	EX	29	-532	525	522	-3	1	988	.	105	522	.	1
30	EX	30	-533	526	.	.	.	.	.	93	.	.	.
31	EX	31	-551	544	.	.	.	.	.	162	.	.	.
32	EX	32	-565	558	.	.	.	.	.	180	.	.	.
33	EX	33	-576	569	.	.	.	.	.	128	.	.	.
34	EX	34	-584	577	.	.	.	.	.	127	.	.	.
35	EX	35	-597	590	.	.	.	.	.	225	.	.	.
36	EX	36	-651	645	.	.	.	.	.	107	.	.	.
37	EX	37	-677	671	.	.	.	.	.	142	.	.	.
38	EX	38	-709	705	.	.	.	.	.	237	.	.	.
39	EX	39	-722	718	.	.	.	.	.	198	.	.	.
40	EX	40	-728	724	.	.	.	.	.	198	.	.	.
41	EX	41	-752	748	.	.	.	.	.	162	.	.	.
42	EX	42	-773	769	.	.	.	.	.	65	.	.	.
43	EX	43	-801	797	.	.	.	.	.	163	.	.	.
44	EX	44	-811	810	.	.	.	.	.	145	.	.	.

RIC

11/04/91 17:33:00

SAMPLE: GULF STATES CRESTOE WATER MARKED GS-TW-02, 1000 ML TO 1.0 ML

CONDS.: DESC 1M, EI MODE, 1350 EM VOLTS, RESEK, 24 PSI

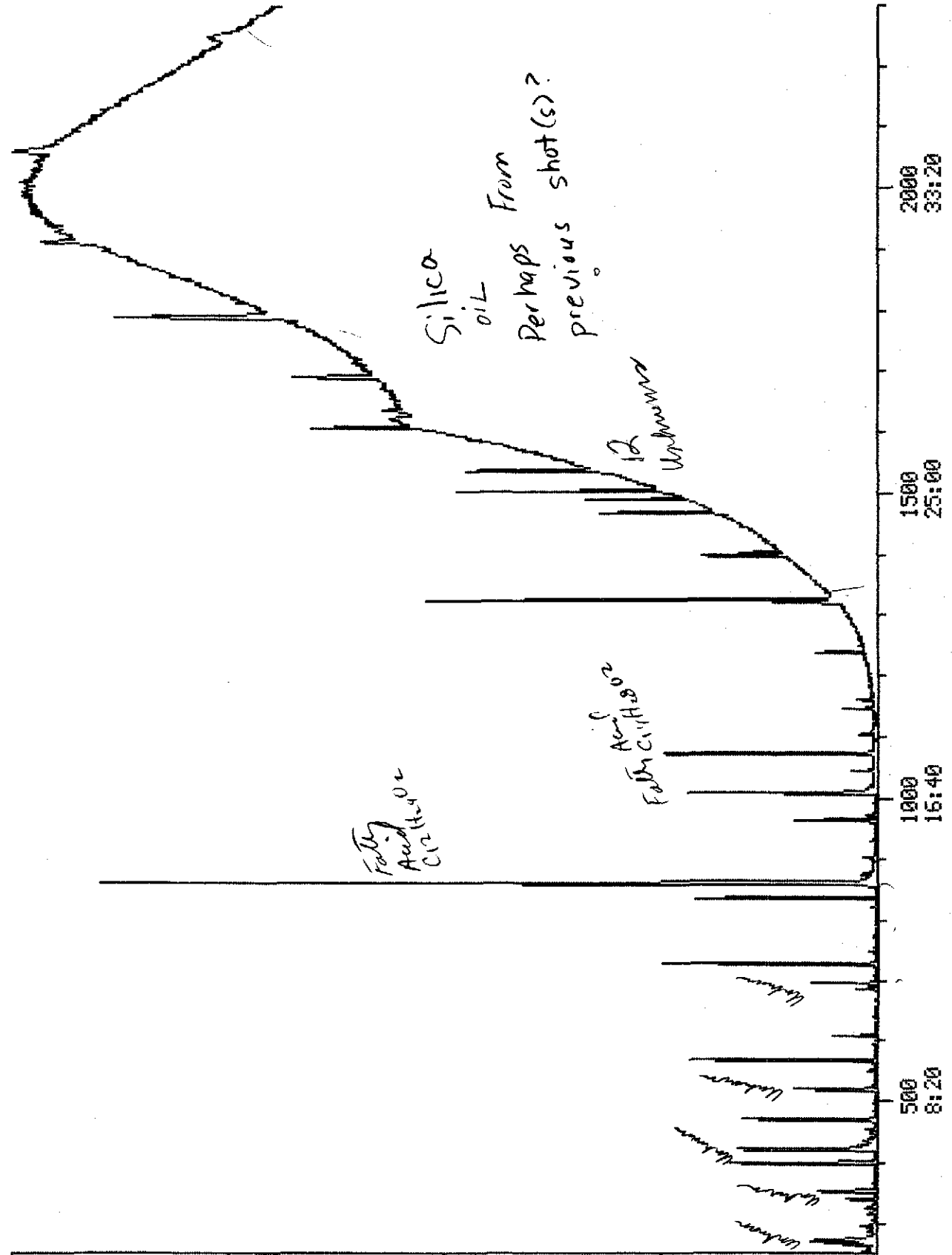
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SCANS 250 TO 2300

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CALI: 826337ABN #2

100.0



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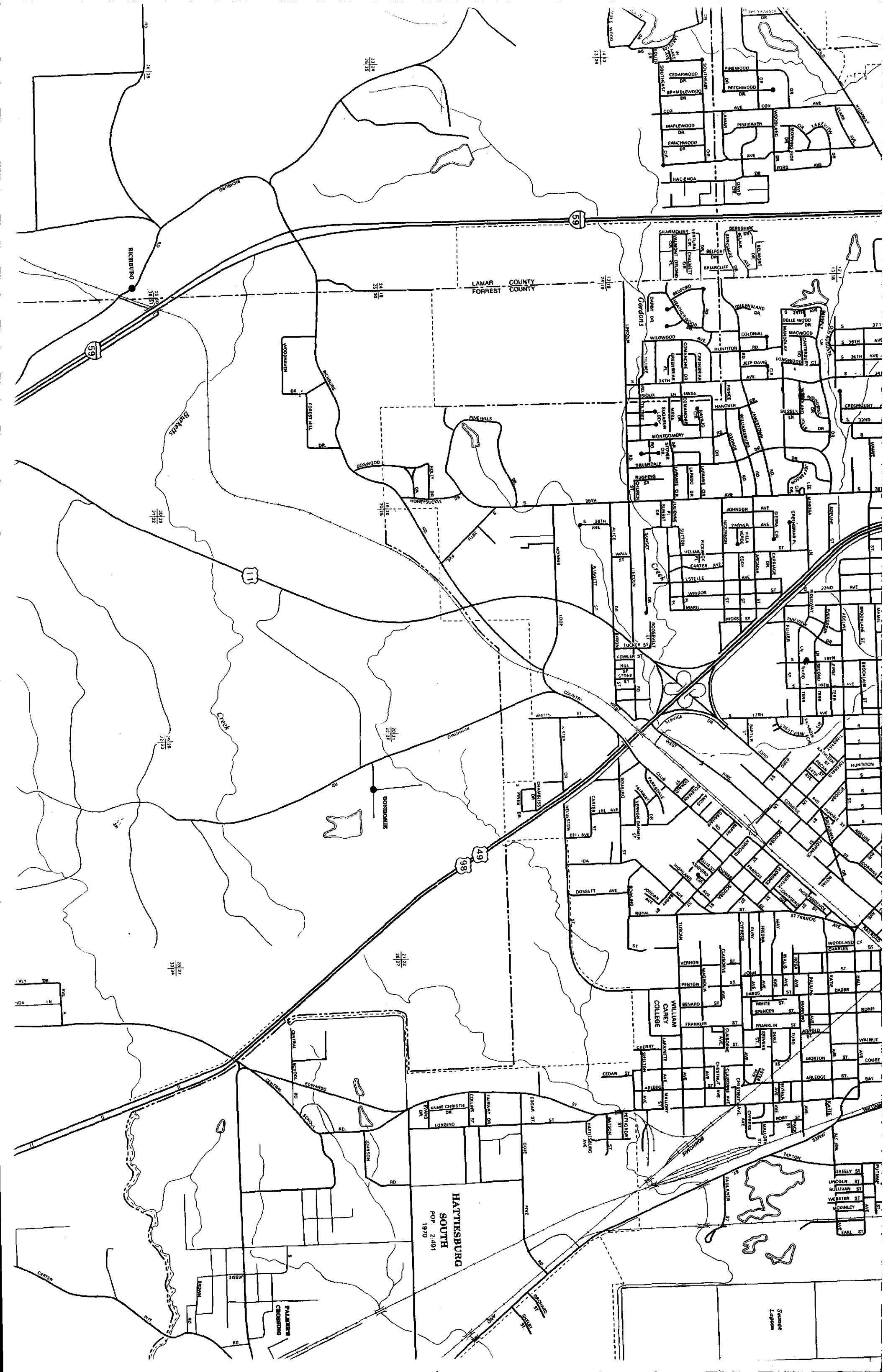
1000
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SCAN
TIME

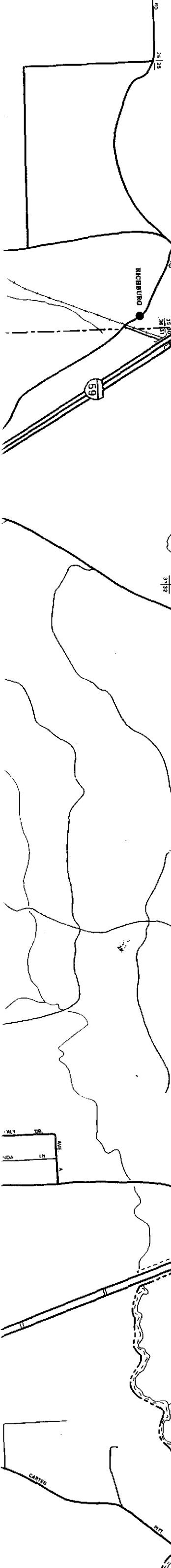
208895.



LAMAR COUNTY
FORREST COUNTY

HATTIESBURG
SOUTH
POP. 2,491
1970

Swamp
Logan



0 1 2 3 4 5
MILES

0 100 200 300 400 500
FEET

A
PRELIMINARY ASSESSMENT (PA)
REPORT FOR
GULF STATE CREOSOTE
HATTIESBURG, MISSISSIPPI
MSD985967199

PREPARED FOR:

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Site Investigation and Support Branch
Waste Management Division - Region IV
Environmental Protection Agency
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PREPARED BY:

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REVIEWED AND EDITED BY:

Jim Hardage (BPC)

March 6, 1990

This Preliminary Assessment (PA) Report includes:

1. Introduction
2. Background
3. Site Description
4. Sampling History
5. Waste Description/Containment
6. Geology/Hydrology
7. The Aquifer of Concern
8. Precipitation
9. Surface Water
10. Sensitive Environments
11. Conclusions and Recommendations
12. Appendix
 - (a) HRS II Checklist
 - (b) References (1 to 16)

Introduction

The following report is a preliminary assessment (PA) of the Gulf State Creosote site in Hattiesburg, Mississippi.

County Code: 035

Congressional District: 05

Coordinates: Latitude 31° 18' 50"
Longitude 89° 18' 50"

Location: NW 1/4 SW 1/4 S16 T4N R13W

Directions to Site: The Gulf State Creosote site may be reached by traveling south on Highway 49 through the City of Hattiesburg. Take the Highway 11 exit and travel east to northeast for approximately 0.6 to one mile. Turn right onto Timothy Lane and continue for two blocks. Turn right onto Pine Street. The Gulf State Creosote site is adjacent to the road on the right and left sides.

Background

In August of 1989, Richard Ball of the Mississippi Bureau of Pollution Control (BPC) investigated the site due to reports from the Corps of Engineers, Mobile District, indicating creosote in borings along Gordans Creek. A title search of county records revealed a creosote plant was in operation along Gordans Creek from around 1900 to 1960. The Gulf States Creosoting Company operated on the site from the mid 1930's to the late 1950's. The last operator of record was American Creosote (Reference 4).

Site Description

The Gulf State Creosote site is approximately 84 acres in size, about 1/2 of a mile long and 1/4 of a mile wide. The site is located along Gordans Creek, which flows through the site in a north northeasterly direction. A railroad borders the site to the southeast.

The site at one time, during the creosote operating years, consisted of buildings, structures, tanks, boilers, machinery, and equipment. Today the site consists of vacant lots, automobile dealers, and other small businesses (References 4 and 5).

The site is located on the south side of the City of Hattiesburg and is surrounded by residential areas, schools, and small businesses. The site is located on 16th section land with the Hattiesburg School District as trustee (References 4 and 5).

Sampling History

Currently, EPA emergency response personnel and the BPC are conducting a sampling investigation of the site.

Waste Description/Containment

According to site visits in 1989 by the BPC and EPA emergency response personnel, creosote was discovered leeching into Gordans Creek. The waste was observed to be unconsolidated with no diversion or containment system present.

The hazardous substance of concern is creosote which is moderately toxic and highly persistent. The areal extent of contamination is not known at this time; therefore, a maximum waste quantity is assumed. The physical state of the hazardous substance at the time of disposal was a liquid and/or sludge.

Geology/Hydrology

The stratigraphic units below the site in descending order are as follows: Hattiesburg Formation and the Catahoula Sandstone, Vicksburg Group (Undifferentiated) and the Yazoo Clay (Reference 2).

Fresh-water aquifers in the study are mostly beds of sand or zones of sandy beds. The beds dip gently to the southwest and contain fresh water as much as 40 miles from the outcrops (Reference 2).

Prediction of aquifer thickness and lithology is difficult because of the lenticular bedding of most units. Lithologic changes occur in short distances and individual sands, which are, regular and thicken or thin in short distances, are difficult to trace, especially along the dip of the beds (Reference 2).

At Hattiesburg, the Hattiesburg Formation consists of thick beds of massive clays - 150 or 200 feet thick - which contain some lime but very little sand. Geophysical logs of nearby wells to the east of the site indicate a clay layer that occurs approximately 30 feet above sea level. The clay layer ranges from 110 to 180 feet in thickness and is overlain by and grades upward into alternating fine-grained silty sands and clays. The clay layer is underlain by interbedded sands and clays. The sands increase in prominence and become gravelly toward the base. A geohydrologic section to the west of the site (within the three-mile radius) indicates numerous silty sands and clay lenses underlying the land surface with sands increasing in prominence approximately 100 feet below sea level. There is no uniform clay layer present, i.e., the clay layer mentioned above is not continuous over the three-mile radius

(References 2, 6, and 8). Four Forrest County aquifer tests of the Hattiesburg Formation show hydraulic conductivities ranging from 96 to 180 ft/d (Reference 11).

Separating the Hattiesburg from the underlying Catahoula is extremely difficult. To avoid confusion both of these units are referred as the Miocene Aquifer System. The aquifer system is composed of numerous interbedded layers of sand and clay (sand beds in the Miocene are characteristically lens-shaped or wedge-shaped). Because of the interbedded nature, the formations cannot be reliably separated and correlated either on the surface or in the subsurface.

Recharge to the Miocene Aquifer is from rainfall directly on the outcrop and leakage between aquifer units of the Miocene Aquifer System. Ten Forrest County aquifer tests of the Catahoula Sandstone, which is the lower unit of the Miocene Aquifer System, show hydraulic conductivities ranging from 18 to 170 ft/d. Hydraulic conductivities average 95 ft/d for the Miocene Aquifer System. Lithologic data indicates that the Miocene Aquifer System extends to a depth in excess of 1000 feet below sea level with the base of fresh water occurring approximately 800 feet below sea level (References 3, 10, and 11).

Underlying the Miocene Aquifer is the Vicksburg Group (Undifferentiated) which is generally composed of limestone beds alternating with thin beds of limy sand and clay. The clay formations effectively isolate the overlying Miocene Aquifer System (References 2 and 10).

The Aquifer of Concern

The Hattiesburg Formation and the Catahoula Sandstone are considered as a single hydraulic unit, referred to as the Miocene Aquifer System. These aquifers constitute the aquifer of concern (AOC).

The first water bearing unit of the AOC occurs in the surficial aquifer (Hattiesburg Formation) at a depth of approximately 15 feet below the land surface. The unsaturated zone consists primarily of silty sands and silty clays and has an average hydraulic conductivity of approximately 1×10^{-5} cm/s (References 1, 6, 7, and 13).

U.S.G.S. identifies the following public water supply wells in the AOC within the three-mile radius of the site:

Four (4) wells for the City of Hattiesburg identified as #D004, #D005, #D006, and #D007 on the U.S.G.S. water wells printout. There are seven (7) additional City of Hattiesburg wells which are located between the three and four-mile radius from the site. According to the Mississippi State Department of Health, Division of Water Supply, the water from all the City of Hattiesburg wells (11) is mixed into one distribution system.

Two (2) wells for the Central Water Association identified as #D045 and #D046 on the U.S.G.S. water wells printout.

Two (2) wells for the Palmers Crossing Water Association identified as #D042 and #D044 on the U.S.G.S. water wells printout.

The City of Hattiesburg wells, the Central Water Association wells, and the Palmers Crossing Water Association wells supply an estimated population of approximately 58,121 (References 7 and 14). These wells are screened from approximately 330 feet below the land surface to a maximum depth of approximately 650 feet.

There are also numerous domestic private wells occurring in both units of the AOC within the three-mile radius. No other drinking water source is presently available (References 7 and 14).

The nearest well in the AOC is a private well located approximately 3400 feet southeast of the site. The well is located and identified as U.S.G.S. #D106 on the topographic map and the water wells printout. The well is screened at a depth of approximately 667 feet below the land surface (Reference 7).

Precipitation

The climate of southeastern Mississippi is humid and semitropical. Average annual rainfall is approximately 60 inches. Average annual runoff from the numerous streams in the area is approximately 20 inches. The remainder of the precipitation seeps into the ground or is dissipated by evapotranspiration (Reference 2).

The mean annual lake evaporation for the area is approximately 46 inches. The net annual precipitation of the area is about 14 inches. The one-year, twenty-four-hour rainfall is approximately 4 inches (References 1 and 2).

Surface Water

The Gulf State Creosote site is located adjacent to Gordons Creek which is the nearest perennial downslope surface water (i.e., the site is in surface water). Gordons Creek flows in a north northeasterly direction before entering the Leaf River approximately 4.5 stream miles from the site. The three-mile migration pathway begins and ends in Gordons Creek (Reference 5).

The site and surrounding area is relatively flat with a slight gradient to the west southwest. The surface elevation of the site is approximately 180 feet above mean sea level (Reference 5).

According to the Mississippi Bureau of Land and Water Resources, there is one surface water intake located along the three-mile migration pathway. The water is used for domestic purposes with the intake located approximately 2.25 stream miles from the site. Gordons Creek is generally used for recreational purposes such as fishing and swimming (References 5 and 12).

Environmental Concerns

There are no critical habitats of federal endangered species or national wildlife refuges within one mile of the site along the surface water migration pathway (Reference 15).

Topographic maps of the Gulf State Creosote site and the surrounding area indicate no wetlands along the migration pathway (Reference 5).

Conclusions and Recommendations

EPA Region IV is planning a removal action at this site. The Bureau recommends that a site screening investigation be performed after the EPA removal action is completed.

REFERENCES

1. EPA HRS Guidance Manual.
2. Water for Industrial Development in Forrest, Greene, Jones, Perry, and Wayne Counties, Mississippi, Water Resources Division, U.S. Geological Survey, 1966, pp. 2,3, 38-43.
3. A Preliminary Assessment Reassessment (PAR) Report for Hercules, Incorporated, Hattiesburg, Mississippi, prepared by Michael T. Slack, Mississippi BPC, December 15, 1989.
4. Information on Gulf State Creosote Site, from Mississippi BPC, Hazardous Waste Division (HWD) Files.
5. Topographic Maps of the Gulf State Creosote Site: Hattiesburg SW, Mississippi Quadrangle 7.5 Minute Series; Hattiesburg, Mississippi Quadrangle 7.5 Minute Series; Carterville, Mississippi Quadrangle 7.5 Minute Series.
6. Forrest County Mineral Resources, Mississippi State Geological Survey, Bulletin 44, Mississippi University, 1941, p. 24.
7. Printout from U.S. Geological Survey Data Base of all Water Wells within a Three-mile Radius and Four-mile Radius of the Gulf State Creosote Site, Hattiesburg, Mississippi.
8. Geophysical Logs of Water Wells Near the Gulf State Creosote Site, Hattiesburg, Mississippi, from the Mississippi Bureau of Geology, #D-1, #D-4, #D-7, #D-12.
9. Shows, Thad N., Water Resources of Mississippi, Bulletin 113, Mississippi Geological, Economic, and Topographic Survey, Jackson, Mississippi, 1970, pp. 107, 114, and 115.
10. Gandl, L.A., Characterization of Aquifers Designated as Potential Drinking - Water Sources in Mississippi, U.S. Geological Survey, Water Resources Investigations, Open-File Report 81-550, Jackson, Mississippi, 1982, pp. 15, 17-20.
11. Results of Aquifer Tests in Mississippi, U.S. Geological Survey - Water Resources Division, Bulletin 71-2, 1971, pp. 10 and 22.
12. Information on Surface Water Use from the Mississippi Bureau of Land and Water Resources, Jackson, Mississippi.
13. Field Log of Borings, Gordons Creek, Hattiesburg, Mississippi, July 27, 1989.
14. Information on Public Water Supply Wells in Hattiesburg, Mississippi, from Water Supply Division, Mississippi State Department of Health.

15. U.S. Fish and Wildlife Service, Vicksburg Office, Species List, and U.S. Fish and Wildlife Service, Jackson Office, Topographic Maps Indicating Sensitive Environments.
16. Integrated Risk Information System (IRIS).

PA-1:lr

INSPECTION HEALTH AND SAFETY CHECKLIST

SITE NAME: Gulf State Caboose

FPA ID#: MSD985967199

LOCATION: SW side of HARRISBURG, MS

PHONE (if any): _____

PERSONNEL LOG

* NAME/SIGNATURE	DATE OF LAST		SITE VISIT DATE(S)	INSPECTION TYPE	SUPERVISOR'S SIGNATURE OF APPROVAL AND DATE	COMMENTS/ PLAN REVISION DATE
	SAFETY TRAINING/ FIT TEST					
* <u>Jim Harbage</u>	<u>9/91</u>		<u>Oct 28 - 31, 1991</u>	<u>SI - Phase II</u>		
<u>Ken Whitten</u>	<u>9/91</u>					
<u>Mark Walters</u>	<u>1/91</u>					
<u>Michael Suck</u>	<u>9/91</u>					
<u>Mr Archie McKenzie</u>	<u>Office</u>					
<u>Scott Mullen</u>	<u>of Geology</u>					
_____	_____					
_____	_____					
_____	_____					

Place an asterisk (*) before the name of the MDEQ person who will be responsible for protection and safety of all MDEQ personnel during the site visit.

GENERAL INFORMATION

SITE NAME: GULF STATE CREOSOTE CONTACT (if any): _____

DIRECTIONS TO SITE: (Attach map) TRAVEL SOUTH ON HWY 49 THROUGH THE CITY OF HATTIESBURG. TAKE THE HWY 11 EXIT AND TRAVEL EAST TO NORTHEAST FOR

APPROXIMATELY 0.6 TO ONE MILE. TURN RIGHT ONTO TIMOTHY LANE AND CONTINUE FOR TWO BLOCKS. TURN RIGHT ONTO PINE STREET. THE GULF STATE CREOSOTE SITE IS ADJACENT TO THE ROAD ON THE RIGHT AND LEFT SIDES.

SPECIAL ACCESS REQUIREMENTS: _____

EMERGENCY INFORMATION

AMBULANCE: _____ TELEPHONE: 911 OR 264-5211

HOSPITAL: FORREST GENERAL HOSPITAL (SEE MAP) ^{400 SOUTH 28TH AVE.} TELEPHONE: 288-7000

POLICE: _____ TELEPHONE: 911

FIRE DEPARTMENT: _____ TELEPHONE: 911

INFORMATION SOURCES

PART A _____	PA <u>X</u>	CONTINGENCY PLAN _____
PART B _____	SI _____	CLOSURE PLAN _____
SPOC _____	NPDES _____	EPA _____
CERCLA <u>X</u>	OTHER _____	

SITE DESCRIPTION

THE GULF STATE CREOSOTE SITE IS APPROXIMATELY 84 ACRES IN SIZE, ABOUT 1/2 OF A MILE LONG AND 1/4 OF A MILE WIDE. THE SITE IS LOCATED ALONG GORDONS CREEK, WHICH FLOWS THROUGH THE SITE IN A NORTH NORTHEASTERLY DIRECTION. A RAILROAD BORDERS THE SITE TO THE SOUTHEAST. THE SITE AT ONE TIME, DURING THE CREOSOTE OPERATING YEARS, CONSISTED OF BUILDINGS, STRUCTURES, TANKS, BOILERS, MACHINERY, AND EQUIPMENT. TODAY THE SITE CONSISTS OF VACANT LOTS, AUTOMOBILE DEALERS, A LARGE WOODED AREA, AND SMALL BUSINESSES.

PREVIOUS RELEASES/ACCIDENTS OR COMPLAINTS:

	(Corrected? Yes/No)
AIR <u>UNKNOWN</u>	<u> </u>
SOIL <u>POSSIBLE CONTAMINATED SOILS</u>	<u>NO</u>
SURFACE WATER <u>POSSIBLE RELEASE TO SURFACE WATER</u>	<u>NO</u>
INDUSTRIAL ACCIDENTS <u>UNKNOWN</u>	<u> </u>
COMPLAINTS <u>UNKNOWN</u>	<u> </u>

HEALTH AND SAFETY HAZARDS

Briefly indicate hazard type. Attach additional pages if necessary.

EXPLOSION/OXYGEN DEFICIENCY HAZARDS: NONE (Circle if applicable)

RADIATION HAZARDS: NONE (Circle if applicable)

TOXIC HAZARDS: Avoid direct contact with soil, sediment, surface water, and groundwater. NONE (Circle if applicable)

Briefly summarize chemicals on site: Add attachment if necessary. Indicate if these exist in a controlled state. CREOSOTE OPERATION FROM AROUND 1900 TO 1960. CREOSOTE EXISTS IN A UNCONTROLLED STATE.

UNUSUAL PHYSICAL HAZARDS: NONE (Circle if applicable)

UNUSUAL BIOLOGICAL HAZARDS: NONE (Circle if applicable)

CHECK IF PROBLEM EXPECTED: NOISE HEAT STRESS X COLD STRESS

OVERALL HAZARD RATING: (Circle One)

- VERY HIGH
(LEVEL A)
(ASSISTANCE NECESSARY)
- HIGH
(LEVEL B)
(ASSISTANCE NECESSARY)
- MEDIUM
(LEVEL C)
(MONITORING REQUIRED)
- LOW
(LEVEL D)

PERSONNEL PROTECTIVE EQUIPMENT

(List equipment needed in addition to safety glasses, hard hat, and steel toed boots)

Check if
Needed

Needed throughout entire site?
(If no, list area(s) or task(s)
where needed)

HEAD AND EYE:

FACE SHIELD _____
GOGGLES _____ X
NOISE _____ X
PROTECTION _____
OTHER _____

MAY BE NEEDED DURING INSTALLATION
OF TEMPORARY MONITORING WELLS

RESPIRATORY:

TYPE

APR _____ X _____ Full Face Respirator
APR CART- _____
RIDGE _____
ESCAPE MASK _____ X _____ 5 MINUTE SUPPLY
OTHER _____

CLOTHING:

TYVEK _____ X _____
COVERALL _____
SARANEX _____
COVERALL _____
COTTON _____
COVERALL _____
SPLASH SUIT _____
OVERBOOTS _____
RAIN GEAR _____
OTHER _____

MISCELLANEOUS:

LEVEL A OR B NEEDED?

LEVEL A _____
LEVEL B _____

CONTRACTOR OR EPA?

AREAS/TASKS WHERE NEEDED

AIR MONITORING TYPE

TOXIC H₂S _____
EXPLOSIVE/ _____
OXYGEN _____
RADIATION _____
NONE _____

CONDUCTED BY:

FACILITY _____
ESD _____

AREAS/TASKS WHERE NEEDED

SAMPLING LOCATIONS

CONTRACTOR _____
OTHER STATE OF MS _____

"WHEREAS, The stockholders of this Corporation in their annual meeting assembled on the 15th day of February, 1933, at which time the corporate name of this Company was the GULF STATES CREOSOTING COMPANY, by proper resolution approved the sale of the creosoting plants of this Corporation to the GULF STATES CREOSOTING COMPANY, a Delaware corporation, and authorized and empowered this Board of Directors to provide for the form of transfer for said properties; and

WHEREAS, It now appears that practically all details in the consummation of the said transaction have been worked out to the mutual satisfaction of both parties:

NOW, THEREFORE, BE IT RESOLVED, That H. S. Hagerty, the Vice President, and T. C. Hannah, the Secretary, of this Corporation be, and they are hereby, authorized, empowered and directed to execute the proper and necessary deeds of conveyance, or other papers, for the purpose of conveying to and vesting in the GULF STATES CREOSOTING COMPANY, a Delaware corporation, the creosoting plants and other properties of this Company, and particularly the creosoting plants located at Slidell, Louisiana, Hattiesburg, Natchitoches and Jackson, Mississippi, Birmingham, Alabama, and Brunswick, Georgia; also the railroad and railroad right of way at Jackson, Mississippi, and the oil storage tank at Chalmette, Louisiana, together with the inventories and any other properties embraced and included in this transaction."

I hereby certify that the above and foregoing is a true and exact copy of the resolution passed at a regularly convened and held meeting of the Board of Directors of The Gulf States Liquidating Company on March 13, 1933, at which a quorum and majority of the said Board was present and participating.

This the 18th day of March, 1933.

T. C. Hannah
Secretary

(SEAL)

Recording fee \$4.95



Mrs. Ed. C. Corley
To () Deed
Mrs. Gertrude C. Smith
STATE OF MISSISSIPPI
FORREST COUNTY.

Filed for Record at 2 o'clock P. M. Mar. 23, 1933
Recorded March 25, 1933.
Ethel Baylis, Clerk

For and in consideration of the sum of \$250.00 and other valuable consideration heretofore and now paid and assumed, the receipt of which is hereby acknowledged, I hereby sell, convey and warrant to Mrs. Gertrude C. Smith, the following described lands situated and being in Forrest County, State of Mississippi;

All of Lot 15 - and 20 feet off West side Lot 14 Block 21, according to Hattiesburg Heights second survey, as per plat of said survey of record in office of Chancery Clerk of said County.

This land constitutes no part of my homestead.

Witness my signature this the 24th day of March 1933.

Mrs. Ed. C. Corley

STATE OF MISSISSIPPI
FORREST COUNTY.

Personally appeared before me the undersigned authority, in and for said county and State, Mrs. Ed. C. Corley, who acknowledged that she signed and delivered the above and foregoing deed on the day and date therein mentioned as her act and deed and for the

being duly sworn, says that the notice, a true copy of which is attached, appeared in the issues of said newspaper as follows:

Date 3-10, 1933

Number words 1000
Published 1 Times

Printer's Fee \$20.00
Making Proof .50
Total \$20.50

(Signed) Thos. St. John, Publisher.

Sworn to and subscribed before me this 10 day of March 1933.

(Seal)

F. Delsing,
Notary Public.
My Commission Expires April 12, 1934.

Recording fee \$3.20

THE GULF STATES LIQUIDATING COMPANY

Filed for record 9 o'clock A.M. March 24, 1933,

TO () DEED

Recorded March 24, 1933,

THE GULF STATES CREOSOTING COMPANY

Ethel Baylis, Clerk.

STATE OF MISSISSIPPI: :

COUNTY OF FORREST : :

For and in consideration of the sum of -----FORTY THOUSAND & NO/100 (\$40,000.00) DOLLARS ----- cash in hand paid, the receipt of which is hereby acknowledged, the undersigned THE GULF STATES LIQUIDATING COMPANY, a Mississippi corporation, does hereby grant, bargain, sell, convey and warrant unto the GULF STATES CREOSOTING COMPANY, a Delaware corporation, the following described property lying and being situated in the City of Hattiesburg, Forrest County, Mississippi, to-wit:

All of Block 75 of the D. D. McInnis Third Survey of the City of Hattiesburg, excepting, however, the following described parcels of land:

Except that parcel of land described as beginning at the Northwest corner of said Block 75 and run Eastward along the Southern boundary line of Florence Street a distance of 200 feet, thence at right angles to last named course Southward a distance of 150 feet, thence at right angles to the last named course Westward a distance of 200 feet to Thirty Second Avenue; thence Northward along the East boundary line of Thirty Second Avenue a distance of 150 feet to the point of beginning; and

Except also that part of land described as beginning at the Northeast corner of said Block 75 and run Southward along the West boundary line of West Pine Street 75 feet; thence at right angles to the last named course Westward 180 feet; thence at right angles to the last named course Northward 75 feet to Florence Street; thence at right angles to the last named course Eastward 180 feet to point of beginning; and

Except that parcel of land described as a part of said Block 75 beginning at the point of intersection of the Northwest line of Pine Street with the Southwest line of Florence Street and run thence Southwest along the Northwest line of Pine Street 75 feet to the point of beginning, and thence run Southwest along the Northwest line of Pine Street, 75 feet, thence run Northwest at right angles to Pine Street 180 feet, thence run Northeast parallel with Pine Street 75 feet and thence run Southeast 180 feet to the point of beginning; and

All of Lot 1 of Block 74 of the D. D. McInnis Third Addition to the City of Hattiesburg, and

All of Lot 2 of the Davis & Johnson Subdivision of Block 74 of the D. D. McInnis Third Addition to the City of Hattiesburg; and

Beginning at the Northwesterly corner of Block 72 of the original D. D. McInnis Third Survey of the City of Hattiesburg, the same being the point of intersection of the Southeastern boundary line of Thirty Second Avenue with the Southwesterly boundary line of the unincorporated area lying between Blocks 72 and 74 of the said D. D. McInnis Third Survey, at the point of beginning, and run thence in a Southwesterly direction along the boundary line of Thirty Second Avenue 550 feet, more or less, to the East prong of Gordon's Creek, thence in a Southerly direction along and following the meanderings of Gordon's Creek 450 feet, more or less, thence run East 380 feet, more or less, to the Eastern boundary line of Lewin Avenue or Pine Street, thence run in a Northeastly direction along the Western boundary line of Lewin Avenue or Pine Street 710 feet, more or less, to the Easterly corner of said Block 72 of said D. D. McInnis Third Survey, and thence run Northwest along the Northeast boundary line of said Block 72 to the point of beginning; the same containing 10 acres of land, more or less.

All of Blocks 11, 12 and 13 of the Hicks Subdivision of the D. D. McInnis Survey of Section 16, Township 4 North, Range 13 West, and

All of Blocks 14, 15, 16, 17, 18 and 19 of the Hicks Subdivision of the D. D. McInnis Survey of Section 16, Township 4 North, Range 13 West.

All of the above described land located in and being a part of Section 16, Township 4 North, Range 13 West, in the City of Hattiesburg, Forrest County, Mississippi, and lying West of the right of way of the E. R.R. right of way through said section.

Said property is being described as:

Beginning at the intersection of the Western boundary of Florence Street with the Southern boundary of Thirty Second Avenue, run thence South 44 degrees and 53 minutes West along the boundary of Thirty Second Avenue a distance of 150 feet to a concrete monument at the point of beginning.

Thence run South 44 degrees and 53 minutes West which is along the southerly boundary of Thirty Second Avenue for a distance of 2697.2 feet to a concrete monument, thence continue on the above mentioned course a distance of 14 feet to the center of Gordon's Creek a distance of 14 feet; thence South 84 degrees and 36 minutes East along center of Gordon's Creek a distance of 14 feet; thence South 56 degrees and 22 minutes East along center of Gordon's Creek a distance of 15.81 feet; thence South 4 degrees and 15 minutes East along the center of Gordon's Creek a distance of 18.02 feet, thence South 14 degrees and 56 minutes West along the center of Gordon's Creek a distance of 41.04 feet; thence South 4 degrees and 15 minutes East along the center of Gordon's Creek a distance of 18.02 feet; thence South 4 degrees and 30 minutes East along the center of Gordon's Creek a distance of 17.46 feet; thence South 75 degrees and 32 minutes East along the center of Gordon's Creek a distance of 89.02 feet, thence South 59 degrees and 44 minutes East along the center of Gordon's Creek a distance of 17.46 feet; thence South 7 degrees and 30 minutes East along the center of Gordon's Creek a distance of 16.49 feet; thence South 0 degrees and 56 minutes East along the center of Gordon's Creek a distance of 30.24 feet; thence South 10 degrees and 18 minutes East along the center of Gordon's Creek a distance of 12.94 feet; thence South 19 degrees and 41 minutes East along the center of Gordon's Creek a distance of 12.94 feet; thence West 38 feet to a concrete monument; thence continue on a distance of 809.83 feet to a concrete monument located on the West boundary of Section 16, Township 4 North, Range 13 West, thence South 1773.09 feet to a concrete monument which is the intersection of the West boundary line of Section 16 with the westerly right of way line of the New Orleans and Northeastern Railroad; thence run South 44 degrees and 53 minutes East along the Northwesterly right of

way line of the New Orleans & Northeastern Railroad a distance of 4219.45 feet to a concrete monument, thence North 45 degrees and 07 minutes West a distance of 483 feet to a concrete monument which is on the Northwesterly boundary of West Pine Street; thence North 44 degrees and 53 minutes East along the Northwesterly boundary of West Pine Street a distance of 611.21 feet to a concrete monument, thence North 45 degrees and 07 minutes West a distance of 400 feet to point of beginning.

All of said property being located in Section 16, Township 4 North, Range 13 West, in Forrest County, State of Mississippi, and containing 84.43 acres, more or less.

The interest hereby conveyed is the unexpired portion of a lease on said land for 99 years made on July 3, 1854.

There is located on the above described property a creosoting plant consisting of buildings, structures, tanks, boilers, machinery and equipment, and this conveyance embraces and includes not only the above described lands, but any and all buildings, improvements, tanks, machinery and equipment going to and making up the said creosoting plant.

The grantor herein warrants the payment of all taxes on the above described land up to and including the year 1932. The grantee herein assumes and agrees to pay the taxes for the year 1933.

The Gulf States Liquidating Company is a corporation created and existing under and by virtue of the Laws of the State of Mississippi and was originally incorporated under the name of the Hattiesburg Creosoting Company, which name by proper amendment to its Charter of Incorporation was changed to the Gulf States Creosoting Company, and which name has been recently changed by proper Amendment to its Charter of Incorporation to The Gulf States Liquidating Company.

Witness the signature and corporate seal of The Gulf States Liquidating Company hereto affixed by its duly constituted and authorized officers on this the 20th day of March, A. D., 1933.

THE GULF STATES LIQUIDATING COMPANY,

By H. S. Hagerty
Vice President

(SEAL)

ATTEST:

T. C. Hannah
Secretary

WITNESSES:

A. D. Katz

Basel C. Kraus

STATE OF MISSISSIPPI,

COUNTY OF FORREST,

CITY OF HATTIESBURG.

Personally came and appeared before me, the undersigned authority in and for said state, county and city, H. S. Hagerty, Vice President, and T. C. Hannah, Secretary, of The Gulf States Liquidating Company, a Mississippi corporation, who acknowledged that they signed, sealed, executed and delivered the foregoing and attached conveyance on the day and year therein mentioned for and on behalf of, and as the voluntary act and deed of, said Corporation.

Given under my hand and seal of office on this the 20 day of March, 1933.

Mrs. Ila Rester
Notary Public

My Commission Expires May 8, 1936

(SEAL)

A
PRELIMINARY ASSESSMENT (PA)
REPORT FOR
GULF STATE CREOSOTE
HATTIESBURG, MISSISSIPPI
MSD985967199

PREPARED FOR:

Brian Farrier
Site Investigation and Support Branch
Waste Management Division - Region IV
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, GA 30365

PREPARED BY:

Michael Slack
Hazardous Waste Division
Mississippi Bureau of Pollution Control (BPC)
P.O. Box 10385
Jackson, Mississippi 39289-0385

REVIEWED AND EDITED BY:

Jim Hardage (BPC)

March 6, 1990

This Preliminary Assessment (PA) Report includes:

1. Introduction
2. Background
3. Site Description
4. Sampling History
5. Waste Description/Containment
6. Geology/Hydrology
7. The Aquifer of Concern
8. Precipitation
9. Surface Water
10. Sensitive Environments
11. Conclusions and Recommendations
12. Appendix
 - (a) HRS II Checklist
 - (b) References (1 to 16)

Introduction

The following report is a preliminary assessment (PA) of the Gulf State Creosote site in Hattiesburg, Mississippi.

County Code: 035

Congressional District: 05

Coordinates: Latitude 31° 18' 50"
Longitude 89° 18' 50"

Location: NW 1/4 SW 1/4 S16 T4N R13W

Directions to Site: The Gulf State Creosote site may be reached by traveling south on Highway 49 through the City of Hattiesburg. Take the Highway 11 exit and travel east to northeast for approximately 0.6 to one mile. Turn right onto Timothy Lane and continue for two blocks. Turn right onto Pine Street. The Gulf State Creosote site is adjacent to the road on the right and left sides.

Background

In August of 1989, Richard Ball of the Mississippi Bureau of Pollution Control (BPC) investigated the site due to reports from the Corps of Engineers, Mobile District, indicating creosote in borings along Gordans Creek. A title search of county records revealed a creosote plant was in operation along Gordans Creek from around 1900 to 1960. The Gulf States Creosoting Company operated on the site from the mid 1930's to the late 1950's. The last operator of record was American Creosote (Reference 4).

Site Description

The Gulf State Creosote site is approximately 84 acres in size, about 1/2 of a mile long and 1/4 of a mile wide. The site is located along Gordans Creek, which flows through the site in a north northeasterly direction. A railroad borders the site to the southeast.

The site at one time, during the creosote operating years, consisted of buildings, structures, tanks, boilers, machinery, and equipment. Today the site consists of vacant lots, automobile dealers, and other small businesses (References 4 and 5).

The site is located on the south side of the City of Hattiesburg and is surrounded by residential areas, schools, and small businesses. The site is located on 16th section land with the Hattiesburg School District as trustee (References 4 and 5).

Sampling History

Currently, EPA emergency response personnel and the BPC are conducting a sampling investigation of the site.

Waste Description/Containment

According to site visits in 1989 by the BPC and EPA emergency response personnel, creosote was discovered leeching into Gordans Creek. The waste was observed to be unconsolidated with no diversion or containment system present.

The hazardous substance of concern is creosote which is moderately toxic and highly persistent. The areal extent of contamination is not known at this time; therefore, a maximum waste quantity is assumed. The physical state of the hazardous substance at the time of disposal was a liquid and/or sludge.

Geology/Hydrology

The stratigraphic units below the site in descending order are as follows: Hattiesburg Formation and the Catahoula Sandstone, Vicksburg Group (Undifferentiated) and the Yazoo Clay (Reference 2).

Fresh-water aquifers in the study are mostly beds of sand or zones of sandy beds. The beds dip gently to the southwest and contain fresh water as much as 40 miles from the outcrops (Reference 2).

Prediction of aquifer thickness and lithology is difficult because of the lenticular bedding of most units. Lithologic changes occur in short distances and individual sands, which are, regular and thicken or thin in short distances, are difficult to trace, especially along the dip of the beds (Reference 2).

At Hattiesburg, the Hattiesburg Formation consists of thick beds of massive clays - 150 or 200 feet thick - which contain some lime but very little sand. Geophysical logs of nearby wells to the east of the site indicate a clay layer that occurs approximately 30 feet above sea level. The clay layer ranges from 110 to 180 feet in thickness and is overlain by and grades upward into alternating fine-grained silty sands and clays. The clay layer is underlain by interbedded sands and clays. The sands increase in prominence and become gravelly toward the base. A geohydrologic section to the west of the site (within the three-mile radius) indicates numerous silty sands and clay lenses underlying the land surface with sands increasing in prominence approximately 100 feet below sea level. There is no uniform clay layer present, i.e., the clay layer mentioned above is not continuous over the three-mile radius.

(References 2, 6, and 8). Four Forrest County aquifer tests of the Hattiesburg Formation show hydraulic conductivities ranging from 96 to 180 ft/d (Reference 11).

Separating the Hattiesburg from the underlying Catahoula is extremely difficult. To avoid confusion both of these units are referred as the Miocene Aquifer System. The aquifer system is composed of numerous interbedded layers of sand and clay (sand beds in the Miocene are characteristically lens-shaped or wedge-shaped). Because of the interbedded nature, the formations cannot be reliably separated and correlated either on the surface or in the subsurface.

Recharge to the Miocene Aquifer is from rainfall directly on the outcrop and leakage between aquifer units of the Miocene Aquifer System. Ten Forrest County aquifer tests of the Catahoula Sandstone, which is the lower unit of the Miocene Aquifer System, show hydraulic conductivities ranging from 18 to 170 ft/d. Hydraulic conductivities average 95 ft/d for the Miocene Aquifer System. Lithologic data indicates that the Miocene Aquifer System extends to a depth in excess of 1000 feet below sea level with the base of fresh water occurring approximately 800 feet below sea level (References 3, 10, and 11).

Underlying the Miocene Aquifer is the Vicksburg Group (Undifferentiated) which is generally composed of limestone beds alternating with thin beds of limy sand and clay. The clay formations effectively isolate the overlying Miocene Aquifer System (References 2 and 10).

The Aquifer of Concern

The Hattiesburg Formation and the Catahoula Sandstone are considered as a single hydraulic unit, referred to as the Miocene Aquifer System. These aquifers constitute the aquifer of concern (AOC).

The first water bearing unit of the AOC occurs in the surficial aquifer (Hattiesburg Formation) at a depth of approximately 15 feet below the land surface. The unsaturated zone consists primarily of silty sands and silty clays and has an average hydraulic conductivity of approximately 1×10^{-5} cm/s (References 1, 6, 7, and 13).

U.S.G.S. identifies the following public water supply wells in the AOC within the three-mile radius of the site:

Four (4) wells for the City of Hattiesburg identified as #D004, #D005, #D006, and #D007 on the U.S.G.S. water wells printout. There are seven (7) additional City of Hattiesburg wells which are located between the three and four-mile radius from the site. According to the Mississippi State Department of Health, Division of Water Supply, the water from all the City of Hattiesburg wells (11) is mixed into one distribution system.

Two (2) wells for the Central Water Association identified as #D045 and #D046 on the U.S.G.S. water wells printout.

Two (2) wells for the Palmers Crossing Water Association identified as #D042 and #D044 on the U.S.G.S. water wells printout.

The City of Hattiesburg wells, the Central Water Association wells, and the Palmers Crossing Water Association wells supply an estimated population of approximately 58,121 (References 7 and 14). These wells are screened from approximately 330 feet below the land surface to a maximum depth of approximately 650 feet.

There are also numerous domestic private wells occurring in both units of the AOC within the three-mile radius. No other drinking water source is presently available (References 7 and 14).

The nearest well in the AOC is a private well located approximately 3400 feet southeast of the site. The well is located and identified as U.S.G.S. #D106 on the topographic map and the water wells printout. The well is screened at a depth of approximately 667 feet below the land surface (Reference 7).

Precipitation

The climate of southeastern Mississippi is humid and semitropical. Average annual rainfall is approximately 60 inches. Average annual runoff from the numerous streams in the area is approximately 20 inches. The remainder of the precipitation seeps into the ground or is dissipated by evapotranspiration (Reference 2).

The mean annual lake evaporation for the area is approximately 46 inches. The net annual precipitation of the area is about 14 inches. The one-year, twenty-four-hour rainfall is approximately 4 inches (References 1 and 2).

Surface Water

The Gulf State Creosote site is located adjacent to Gordons Creek which is the nearest perennial downslope surface water (i.e., the site is in surface water). Gordons Creek flows in a north northeasterly direction before entering the Leaf River approximately 4.5 stream miles from the site. The three-mile migration pathway begins and ends in Gordons Creek (Reference 5).

The site and surrounding area is relatively flat with a slight gradient to the west southwest. The surface elevation of the site is approximately 180 feet above mean sea level (Reference 5).

According to the Mississippi Bureau of Land and Water Resources, there is one surface water intake located along the three-mile migration pathway. The water is used for domestic purposes with the intake located approximately 2.25 stream miles from the site. Gordons Creek is generally used for recreational purposes such as fishing and swimming (References 5 and 12).

Environmental Concerns

There are no critical habitats of federal endangered species or national wildlife refuges within one mile of the site along the surface water migration pathway (Reference 15).

Topographic maps of the Gulf State Creosote site and the surrounding area indicate no wetlands along the migration pathway (Reference 5).

Conclusions and Recommendations

EPA Region IV is planning a removal action at this site. The Bureau recommends that a site screening investigation be performed after the EPA removal action is completed.

REFERENCES

1. EPA HRS Guidance Manual.
2. Water for Industrial Development in Forrest, Greene, Jones, Perry, and Wayne Counties, Mississippi, Water Resources Division, U.S. Geological Survey, 1966, pp. 2,3, 38-43.
3. A Preliminary Assessment Reassessment (PAR) Report for Hercules, Incorporated, Hattiesburg, Mississippi, prepared by Michael T. Slack, Mississippi BPC, December 15, 1989.
4. Information on Gulf State Creosote Site, from Mississippi BPC, Hazardous Waste Division (HWD) Files.
5. Topographic Maps of the Gulf State Creosote Site: Hattiesburg SW, Mississippi Quadrangle 7.5 Minute Series; Hattiesburg, Mississippi Quadrangle 7.5 Minute Series; Carterville, Mississippi Quadrangle 7.5 Minute Series.
6. Forrest County Mineral Resources, Mississippi State Geological Survey, Bulletin 44, Mississippi University, 1941, p. 24.
7. Printout from U.S. Geological Survey Data Base of all Water Wells within a Three-mile Radius and Four-mile Radius of the Gulf State Creosote Site, Hattiesburg, Mississippi.
8. Geophysical Logs of Water Wells Near the Gulf State Creosote Site, Hattiesburg, Mississippi, from the Mississippi Bureau of Geology, #D-1, #D-4, #D-7, #D-12.
9. Shows, Thad N., Water Resources of Mississippi, Bulletin 113, Mississippi Geological, Economic, and Topographic Survey, Jackson, Mississippi, 1970, pp. 107, 114, and 115.
10. Gandl, L.A., Characterization of Aquifers Designated as Potential Drinking - Water Sources in Mississippi, U.S. Geological Survey, Water Resources Investigations, Open-File Report 81-550, Jackson, Mississippi, 1982, pp. 15, 17-20.
11. Results of Aquifer Tests in Mississippi, U.S. Geological Survey - Water Resources Division, Bulletin 71-2, 1971, pp. 10 and 22.
12. Information on Surface Water Use from the Mississippi Bureau of Land and Water Resources, Jackson, Mississippi.
13. Field Log of Borings, Gordons Creek, Hattiesburg, Mississippi, July 27, 1989.
14. Information on Public Water Supply Wells in Hattiesburg, Mississippi, from Water Supply Division, Mississippi State Department of Health.

15. U.S. Fish and Wildlife Service, Vicksburg Office, Species List, and U.S. Fish and Wildlife Service, Jackson Office, Topographic Maps Indicating Sensitive Environments.
16. Integrated Risk Information System (IRIS).

PA-1:lr

THIS FILE IS CLOSED
THE MATERIAL ENCLOSED IN THIS
FILE BEGINS ON:

DATE: August 7, 1989

AND ENDS ON:

DATE: September 11, 1997

THERE IS MORE RECENT
INFORMATION IN
THE NEXT FILE ON THIS SITE

ADAMS AND REESE

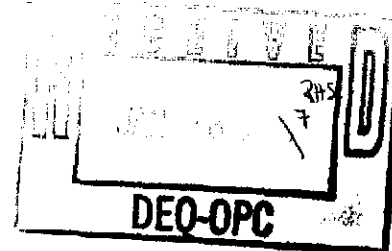
Registered Limited Liability Partnership
Attorneys and Counselors at Law

4500 ONE SHELL SQUARE
NEW ORLEANS, LOUISIANA 70139

Telephone: (504) 581-3234
Facsimile: (504) 566-0210
Internet: info@arlaw.com

January 7, 1997

GLEN M. PILIE
(504) 585-0260
pilieg@arlaw.com



NEW ORLEANS
BATON ROUGE
MOBILE
HOUSTON
WASHINGTON, D.C.

FILE COPY

Mr. Russell Smith
Uncontrolled Sites Section Supervisor
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289

Federal Express

Re: Former Gulf States Creosoting Site Hattiesburg, Mississippi
Site Investigation Work Plan
Our File: 298-240

Dear Mr. Smith:

Enclosed please find two copies of a proposed Site Investigation Work Plan for the former Gulf States Creosoting Site located on Sixteenth Section Property in Hattiesburg, Mississippi. This proposed Site Investigation Work Plan is being submitted on behalf of Kerr-McGee Chemical Corporation. Concurrent with submission of the Work Plan, Kerr-McGee submits its application for review of the Work Plan pursuant to the Uncontrolled Site Voluntary Evaluation Program. A copy of the application form is attached. Also submitted with this correspondence is an Agreed Order executed by Kerr-McGee and a check in the amount of \$6,500.00 payable to the Mississippi Department of Environmental Quality in accordance with the provisions of the Agreed Order. The Agreed Order is submitted in duplicate originals and I would appreciate your returning an executed original to me once signed by the appropriate representative for MDEQ. I am also providing a duplicate of this transmittal letter with a space for your signature to acknowledge receipt of these materials.

If you have any questions, do not hesitate to contact me.

Very truly yours,

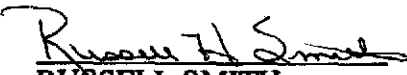
ADAMS AND REESE

BY:


GLEN M. PILIE

Attorney for:
Kerr-McGee Chemical Corporation

RECEIVED BY:


RUSSELL SMITH
Mississippi Department of
Environmental Quality

GMP/js

become effective forty-five days after the date of the written notice to Kerr-McGee. If Kerr-McGee determines to discontinue its participation in the Program for the site after a change by MDEQ in the per hour and analytical cost schedule, Kerr-McGee may terminate its participation in the program as it stated in paragraph 10, below. MDEQ will send an invoice to Kerr-McGee on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by Kerr-McGee, and Kerr-McGee will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.

(c) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee an advance of the total to be paid to MDEQ pursuant to subsection 34(b) of this agreement in the amount of \$6,000.00. This amount will be deposited into the Fund to be used by MDEQ as payment of partial payment for the project costs charged to Kerr-McGee in the first and last invoices sent by MDEQ to Kerr-McGee. MDEQ will credit one-half of this amount against the total first invoice amount billed to Kerr-McGee. If a credit balance exists for Kerr-McGee after deducting the first invoice amount from the first one half of the deposited amount, the remainder of the first one half of the deposited amount will be deducted from the second invoice amount, as so on, until the first one half of the deposited amount is exhausted. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the first one half of the deposited amount. At the completion of MDEQ's involvement with the project, the remaining one half of this amount will be credited against the final invoice sent by MDEQ to Kerr-McGee. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the second one half of the deposited amount. Any deposited amount remaining after payment in full of the last project invoice will be refunded to Kerr-McGee.

5. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.

6. Kerr-McGee will obtain on behalf of MDEQ access to the site to be evaluated pursuant to this Agreed Order. Since the site is owned or operated by a third party, Kerr-McGee will provide to MDEQ a copy of a document assuring MDEQ site access for the remainder of MDEQ's activities under this Order. In the event access is not received by Kerr-McGee on a voluntary basis, Kerr-McGee will seek relief from the appropriate authority.

7. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against Kerr-McGee. This agreement does not represent the settlement or release of any liability of Kerr-McGee for any action, inaction or property condition. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site. By entering into this Agreement Kerr-McGee admits no liability whatsoever for conditions at the site and specifically denies any such liability.

8. If any part of any amount invoiced to Kerr-McGee by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to 25 percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. § 17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the non paying party.

9. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if

**Uncontrolled Site Voluntary Evaluation Program §17-17-54
Application Form**

FILE COPY

Facility or Site Data

Site Name	Gulf States Creosote				
Owner of Site	Hattiesburg School District				
Address of Site (Street)	See Work Plan				
City of Site	Hattiesburg	State	Mississippi	Zip	
County	Forrest				
Contact Person for Site	JB Van Slyke, Jr.	Phone	(601) 544-7514	Fax	(601) 545-2335
Mailing Address	P. O. Box 1506				
City	Hattiesburg	State	Mississippi	Zip	39403
Soil Contaminant	See Work Plan	Surface Water Contaminant	See Work Plan		
Ground Water Contaminant	See Work Plan	Air Contaminant	None		
Latitude (Field Verified)*	See Work Plan		Longitude (Field Verified)*	See Work Plan	

*Location of Highest Concentration of Contamination

Party Assuming Responsibility for MDEQ Oversight Costs

Name	Kerr-McGee Chemical Corporation				
Address (Street and P.O. Box)	123 Robert S. Kerr St.				
City	Oklahoma City	State	Oklahoma	Zip	73102
Contact Person	Keith Watson	Phone	(405) 270-3747	Fax	(405) 270-6039
Relationship to Site, (i.e., Owner, Lessee, Potential Buyer, Seller)	Defendant USDC S.D. Miss Case #2:96cv323PG				

Financial Contact (for Payment of MDEQ Invoice)

Firm	Kerr-McGee Chemical Corporation				
Address for Invoice	123 Robert S. Kerr St.				
City	Oklahoma City	State	Oklahoma	Zip	73102
Contact Person	Keith Watson	Phone	(405) 270-3747	Fax	(405) 270-6039

Environmental Consultant

Firm	Michael Pisani & Associates, Inc.				
Address	1100 Poydras Centre, Suite 1430 Energy Centre				
City	New Orleans	State	Louisiana	Zip	70163
Contact Person	Mike Pisani	Phone	(504) 582-2468	Fax	(504) 582-2470

Legal Counsel

Firm's Name	Adams and Reese				
Address	4500 One Shell Square				
City	New Orleans	State	Louisiana	Zip	70139
Contact Attorney	Glen Pilie'	Phone	(504) 585-0260	Fax	(504) 566-0210

Please Print or Type Responses

Form Revision Date 9/20/96



KERR-McGEE CHEMICAL CORPORATION

A SUBSIDIARY OF KERR-McGEE CORPORATION
KERR McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

CHECK NO. 842568

TO CITIBANK DELAWARE
ONE PENN'S WAY
NEW CASTLE, DE 19720

62-20
311

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND ON WHITE PAPER - THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

VOID AFTER 6 MONTHS

DATE
01-03-97

CHECK NO.
842568

NET AMOUNT
6,500.00

PAY

SIX THOUSAND FIVE HUNDRED AND 00/100 DOLLARS

TO THE ORDER OF MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
P.O. BOX 10385
JACKSON, MS 39289

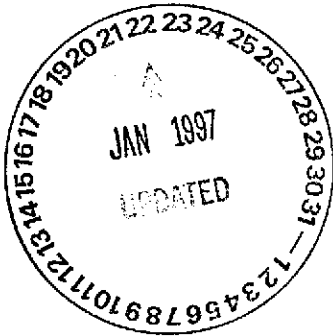
KERR-McGEE CHEMICAL CORPORATION
DISBURSING ACCOUNT

BY John M. Rank
VICE PRESIDENT & TREASURER

⑈00842568⑈ ⑆031100209⑆

38711342⑈

#3381-97

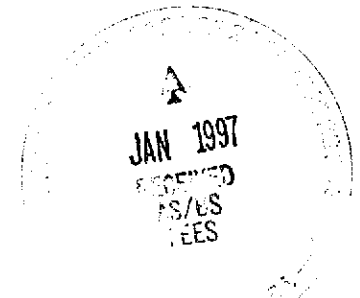


MISCELLANEOUS

Payment amount correct; please deposit check.

Please hold check until further notice.

Division # 4047
Fund # 3494 / 3493
PV # _____
Date: _____
Exp. Code _____
Revenue Code 41980
Grant Year _____



JB
Signature

1/22/97
Date

Roll - this is my only
comment - looks good.

Document 2

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of Kerr-McGee Chemical Corporation

Order No. _____

P. O. Box 25861

Oklahoma City, OK 73125

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department Environmental Quality ("MDEQ") and (Kerr-McGee Chemical Corporation), ("Kerr-McGee") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. Kerr-McGee has been sued by various individuals, corporations and the Hattiesburg School District with regard to alleged chemical contamination on the Sixteenth Section Property located in Hattiesburg, Mississippi. Kerr-McGee is alleged to be the successor in interest to a former operator of a creosote plant which was located on a portion of the Sixteenth Section Property. Kerr-McGee asserts it has never owned any interests in the Sixteenth Section Property. Kerr-McGee asserts it has never operated any creosote plant or other facility on the Sixteenth Section Property. Kerr-McGee asserts it has never generated and/or disposed of any material on the Sixteenth Section Property. While Kerr-McGee asserts it has no legal or equitable interest in the property, it is interested in a proper characterization of the site. Kerr-McGee denies any liability whatsoever for any materials which may have come to be located on or under the Sixteenth Section Property. ~~By entering this agreement, neither the Commission nor MDEQ asserts any position regarding any liability of Kerr-McGee for contamination on said property.~~ OR WAIVES

2. MDEQ has reason to believe that conditions may exist on the Sixteenth Section Property which may warrant oversight by MDEQ. Specifically, Kerr-McGee, while denying any and all liability for any materials which may have become located on the property, has requested MDEQ's oversight of certain scientific and technical investigations it intends to conduct on the property. Kerr-McGee has transmitted a Work Plan to MDEQ to conduct a site characterization study on the property or portions thereof.

3. MDEQ considers the site to be an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. By this Agreement MDEQ accepts Kerr-McGee's request for participation in the Program.

4. Kerr-McGee agrees to the following terms and conditions of participation in the Program:

- (a) Kerr-McGee will pay to MDEQ simultaneously with the

execution of this document by Kerr-McGee a non-refundable Program application fee of \$500.00.

(b) Kerr-McGee will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site in connection with Kerr-McGee's site investigation. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$75.00 per hour for each hour of MDEQ project officer time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by Kerr-McGee, plus MDEQ's actual cost (above and beyond project officer time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, attached to this order as Appendix 1. MDEQ reserves the right to increase or decrease the per hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify Kerr-McGee in writing of the new cost schedule, and the new cost schedule will become effective forty-five days after the date of the written notice to Kerr-McGee. If Kerr-McGee determines to discontinue its participation in the Program for the site after a change by MDEQ in the per hour and analytical cost schedule, Kerr-McGee may terminate its participation in the program as it stated in paragraph 9~~10~~, below. MDEQ will send an invoice to Kerr-McGee on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by Kerr-McGee, and Kerr-McGee will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.

(c) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee an advance of the total to be paid to MDEQ pursuant to subsection 3~~4~~(b) of this agreement in the amount of \$~~6000.00~~. This amount will be deposited into the Fund to be used by MDEQ as payment of partial payment for the project costs charged to Kerr-McGee in the first and last invoices sent by MDEQ to Kerr-McGee. MDEQ will credit one-half of this amount against the total first invoice amount billed to Kerr-McGee. If a credit balance exists for Kerr-McGee after deducting the first invoice amount from the first ~~one-half~~ of the deposited amount, the remainder of the first ~~one-half~~ of the deposited amount will be deducted from the second invoice amount, as so on, until the first ~~one-half~~ of the deposited amount is exhausted. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the first ~~one-half~~ of the deposited amount. At the completion of MDEQ's involvement with the project, the remaining ~~one-half~~ of this amount will be credited against the final invoice

sent by MDEQ to Kerr-McGee. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the second ~~one-half~~ ~~one-half~~ of the deposited amount. Any deposited amount remaining after payment in full of the last project invoice will be refunded to Kerr-McGee.

5. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.

6. Kerr-McGee will obtain on behalf of MDEQ access to the site to be evaluated pursuant to this Agreed Order. Since the site is owned or operated by a third party, Kerr-McGee will provide to MDEQ a copy of a document assuring MDEQ site access for the remainder of MDEQ's activities under this Order. In the event access is not received by Kerr-McGee on a voluntary basis, Kerr-McGee will seek relief from the appropriate authority.

7. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against Kerr-McGee. This agreement does not represent the settlement or release of any liability of Kerr-McGee for any action, inaction or property condition. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site. By entering into this Agreement Kerr-McGee admits no liability whatsoever for conditions at the site and specifically denies any such liability.

8. If any part of any amount invoiced to Kerr-McGee by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to 25 percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. § 17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the non paying party.

9. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if Kerr-McGee fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. § 17-17-54 (Supp. 1996); (3) any rule or regulation

promulgated by the Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

10. Either Kerr-McGee or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to Kerr-McGee an invoice for all work accomplished prior to the effective date of termination for which Kerr-McGee previously has not remitted payment. Kerr-McGee will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

SO AGREED AND ORDERED, this the _____ day of _____, 1996.

J. I. Palmer, Jr.
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the _____ day of _____, 1996.

BY: _____

TITLE: _____
[COMPANY] Kerr-McGee Chemical Corporation

~~001 State Create Kerr-McGee VEP Data W/RECORDS and Russell's Region (Signed) 01/05/96~~

STATE OF _____

COUNTY or PARISH OF _____

PERSONALLY appeared before me, the undersigned authority in and
for the jurisdiction aforesaid, the within named _____
who first being duly sworn, did state upon his/her oath and acknowledge to me
that he/she is the _____ of [COMPANY] and is authorized by
that Corporation to sign this Agreement and to enter this Agreement on behalf of
[COMPANY].

SWORN TO AND SUBSCRIBED BEFORE ME, this the _____ day
of _____, 1996.

NOTARY PUBLIC

MY COMMISSION EXPIRES _____

Agreed Order: Kerr-McGee
Page Number 1

~~23. The site is~~ MDEQ considers the site to be an uncontrolled site within the purview of Miss. Code Ann. § 17-17-54~~§ 17-17-54. Kerr-McGee desires to submit~~ By this site Agreement MDEQ accepts Kerr-McGee's request for participation in the Program.—

By this agreement, MDEQ accepts the site for participation in the Program.

~~34.~~ Kerr-McGee agrees to the following terms and conditions of participation in the Program:

— (a) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee a non-refundable Program application fee of -\$500.00

— (b) Kerr-McGee will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site ~~in connection with Kerr-McGee site investigation~~. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$75.00 per hour for each hour of MDEQ project officer time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by Kerr-McGee, plus MDEQ's actual ~~costs~~ cost (above and beyond project officer time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, attached to this order as Appendix 1. MDEQ reserves the right to increase or decrease the per hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify Kerr-McGee in writing of the new cost schedule, and the new cost schedule will become effective forty-five days after the date of the written notice to Kerr-McGee. If Kerr-McGee determines to discontinue its participation in the Program for the site after a change by MDEQ in the per hour and analytical cost schedule, Kerr-McGee may terminate its participation in the program as is stated in paragraph 9, below. MDEQ will send an invoice to Kerr-McGee on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by Kerr-McGee, and Kerr-McGee will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.

— (c) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee an advance of the total to be paid

to MDEQ pursuant to subsection -3(b) of this agreement in the amount of ~~\$(AMOUNT)\$~~. This amount will be deposited into the Fund to be used by MDEQ as payment of partial payment for the project costs charged to Kerr-McGee in the first and last invoices sent by MDEQ to Kerr-McGee. MDEQ will credit ~~one-half~~ of this amount against the total first invoice amount billed to Kerr-McGee. -If a credit balance exists for Kerr-McGee after deducting the first invoice amount from the first ~~one-half~~ of the deposited amount, the remainder of the first ~~one-half~~ of the deposited amount will be deducted from the second invoice amount, as so on, until the first ~~one-half~~ of the deposited amount is exhausted. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the first ~~one-half~~ of the deposited amount. At the completion of MDEQ's involvement with the project, the remaining ~~one-half~~ of this amount will be credited against the final invoice sent by MDEQ to Kerr-McGee. -Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the second ~~one-half~~ of the deposited amount. Any deposited amount remaining after payment in full of the last project invoice will be refunded to Kerr-McGee.

~~4. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.~~

~~5. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.~~

~~6. Kerr-McGee will obtain on behalf of MDEQ access to the site to be evaluated pursuant to this Agreed Order, whether the site to be evaluated is owned and/or operated by Kerr-McGee or by a third party. If Since the site to be evaluated is owned or operated by a third party, Kerr-McGee will provide to MDEQ within ten days of the execution of this Agreed Order by Kerr-McGee a copy of a document assuring MDEQ site access for the remainder of MDEQ's involvement with activities under this site.~~

~~6. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee Order. In the event access is not received by Kerr-McGee on a voluntary basis, Kerr-McGee will seek relief from the appropriate authority.~~

~~7. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee. MDEQ and the Commission reserve the right to take any and all~~

administrative and/or legal actions they deem necessary in regard to the site and/or against Kerr-McGee. This agreement does not represent the settlement or release of any liability of Kerr-McGee for any action, inaction or property condition. ~~Kerr-McGee neither admits nor denies liability regarding the environmental condition of the site.~~ MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site. ~~By entering into this Agreement, Kerr-McGee admits no liability whatsoever for conditions at the site and specifically denies any such liability.~~

78. If any part of any amount invoiced to Kerr-McGee by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to ~~twenty-five~~ ²⁵ percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. § 17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the ~~nonpayingnon paying~~ party.

89. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if Kerr-McGee fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. ~~§ 17-17-54~~ ^{§ 17-17-54} (Supp. 1996); (3) any rule or regulation promulgated by the Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

90. Either Kerr-McGee or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to Kerr-McGee an invoice for all work accomplished prior to the effective date of termination for which Kerr-McGee previously has not remitted payment. Kerr-McGee will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

promulgated by the Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

10. Either Kerr-McGee or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to Kerr-McGee an invoice for all work accomplished prior to the effective date of termination for which Kerr-McGee previously has not remitted payment. Kerr-McGee will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

SO AGREED AND ORDERED, this the _____ day of _____, 1996.

J. I. Palmer, Jr.
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the _____ day of _____, 1996.

BY: _____

TITLE: _____
[COMPANY] Kerr-McGee Chemical Corporation

001P State: Create: Kerr-McGee MDEQ Order: Word: Chuck's and Russell's Relations: Redline: Smith: out: word

STATE OF _____

COUNTY or PARISH OF _____

PERSONALLY appeared before me, the undersigned authority, in and
for the jurisdiction aforesaid, the within named _____
who first being duly sworn, did state upon his/her oath and acknowledge to me
that he/she is the _____ of [COMPANY] and is authorized by
that Corporation to sign this Agreement and to enter this Agreement on behalf of
[COMPANY].

SWORN TO AND SUBSCRIBED BEFORE ME, this the _____ day,

of _____, 1996.

NOTARY PUBLIC

MY COMMISSION EXPIRES _____

Subj: RE: Kerr McGee Modified Agreed Order
Date: 96-12-26 10:36:50 EST
From: piliegm@mail.arlaw.com (PilieGM)
To: TreyHess@aol.com

Received the document but cannot translate because we are on Mac system. I will have to get our computer specialist to translate so I can read the document. If it becomes a problem I will get back to you.

From: TreyHess@aol.com on Sun, Dec 22, 1996 11:14 AM
Subject: Kerr McGee Modified Agreed Order
To: PilieGM
File(s): KERRMCGE.ZIP

Attached you will find the subject WordPerfect document which has been modified by MDEQ. It has been compressed using "WINZIP" (www.winzip.com). Should you have any questions or comments, please contact Chuck Barlow or Gary Rikard at 601-961-5171.

Trey Hess for Russell Smith at MDEQ

----- MIME Information follows -----

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Content-ID: <0_594_851274685@emout13.mail.aol.com.25590>
Content-type: text/plain

<<<<<< See above "Message Body" >>>>>>

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Content-ID: <0_594_851274685@emout13.mail.aol.com.25591>
Content-type: application/octet-stream;
name="KERRMCGE.ZIP"
Content-Transfer-Encoding: base64

<<<<<< See Enclosure named "KERRMCGE.ZIP" >>>>>>

--PART.BOUNDARY.0.594.emout13.mail.aol.com.851274684--

----- RFC822 Header Follows -----

Received: by mail.arlaw.com with ADMIN;22 Dec 1996 11:13:34 -0500
Received: by emout13.mail.aol.com (8.6.12/8.6.12) id MAA16409 for piliegm@arlaw.com; Sun, 22 Dec 1996 12:11:26 -0500
Date: Sun, 22 Dec 1996 12:11:26 -0500
From: TreyHess@aol.com
Message-ID: <961222121125_1821035713@emout13.mail.aol.com>
To: piliegm@arlaw.com
Subject: Kerr McGee Modified Agreed Order
MIME-Version: 1.0
Content-type: multipart/mixed;
boundary="PART.BOUNDARY.0.594.emout13.mail.aol.com.851274684"

DRAFT

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of Kerr-McGee Chemical Corporation Order No. _____

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department Environmental Quality ("MDEQ") and (Kerr-McGee Chemical Corporation), ("Kerr-McGee") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. Kerr-McGee has been sued by various individuals, corporations and the Hattiesburg School District with regard to alleged chemical contamination on the Sixteenth Section Property located in Hattiesburg, Mississippi. Kerr-McGee is alleged to be the successor in interest to a former operator of a creosote plant which was located on a portion of the Sixteenth Section Property. Kerr-McGee asserts it has never owned any interests in the Sixteenth Section Property. Kerr-McGee asserts it has never operated any creosote plant or other facility on the Sixteenth Section Property. Kerr-McGee asserts it has never generated and/or disposed of any materials on the Sixteenth Section Property. While Kerr-McGee asserts it has no legal or equitable interest in the property, it is interested in a proper characterization of the site. Kerr-McGee denies any liability whatsoever for any materials which may have come to be located on or under the Sixteenth Section Property. *By entering this agreement, MDEQ, the Commission nor MDEQ ASSESS any position regarding any liability of Kerr-McGee for contamination on*

2. MDEQ has reason to believe that conditions may exist on the Sixteenth Section Property which may warrant oversight by MDEQ. Specifically, Kerr-McGee, while denying any and all liability for any materials which may have become located on the property, has requested MDEQ's oversight of certain scientific and technical investigations it intends to conduct on the property. Kerr-McGee has transmitted a Work Plan to MDEQ to conduct a site characterization study on the property or portions thereof. *on said property.*

3. MDEQ considers the site to be an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. By this Agreement MDEQ accepts Kerr-McGee's request for participation in the Program.

4. Kerr-McGee agrees to the following terms and conditions of participation in the Program:

(a) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee a non-refundable Program application fee of \$500.00.

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DRAFT**BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY****In re: Matter of Kerr-McGee Chemical Corporation Order No. _____**

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department Environmental Quality ("MDEQ") and (Kerr-McGee Chemical Corporation), ("Kerr-McGee") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

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2. MDEQ has reason to believe that conditions may exist on the Sixteenth Section Property which may warrant oversight by MDEQ. Specifically, Kerr-McGee, while denying any and all liability for any materials which may have become located on the property, has requested MDEQ's oversight of certain scientific and technical investigations it intends to conduct on the property. Kerr-McGee has transmitted a Work Plan to MDEQ to conduct a site characterization study on the property or portions thereof.

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schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify Kerr-McGee in writing of the new cost schedule, and the new cost schedule will become effective forty-five days after the date of the written notice to Kerr-McGee. If Kerr-McGee determines to discontinue its participation in the Program for the site after a change by MDEQ in the per hour and analytical cost schedule, Kerr-McGee may terminate its participation in the program as it stated in paragraph 9, below. MDEQ will send an invoice to Kerr-McGee on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by Kerr-McGee, and Kerr-McGee will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.

(c) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee an advance of the total to be paid to MDEQ pursuant to subsection 3(b) of this agreement in the amount of \$_____. This amount will be deposited into the Fund to be used by MDEQ as payment of partial payment for the project costs charged to Kerr-McGee in the first and last invoices sent by MDEQ to Kerr-McGee. MDEQ will credit one-half of this amount against the total first invoice amount billed to Kerr-McGee. If a credit balance exists for Kerr-McGee after deducting the first invoice amount from the first one-half of the deposited amount, the remainder of the first one-half of the deposited amount will be deducted from the second invoice amount, as so on, until the first one-half of the deposited amount is exhausted. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the first one-half of the deposited amount. At the completion of MDEQ's involvement with the project, the remaining one-half of this amount will be credited against the final invoice sent by MDEQ to Kerr-McGee. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the second one-half of the deposited amount. Any deposited amount remaining after payment in full of the last project invoice will be refunded to Kerr-McGee.

5. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.

6. Kerr-McGee will obtain on behalf of MDEQ access to the site to be evaluated pursuant to this Agreed Order. Since the site is owned or operated by a third party, Kerr-McGee will provide to MDEQ a copy of a document assuring MDEQ site access for the remainder of MDEQ's activities under this Order. In the event access is not received by Kerr-McGee on a voluntary basis, Kerr-McGee will seek relief from the appropriate authority.

7. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against Kerr-McGee. This agreement does not represent the settlement or release of any liability of Kerr-McGee for any action, inaction or property condition. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site. By entering into this Agreement Kerr-McGee admits no liability whatsoever for conditions at the site and specifically denies any such liability.

8. If any part of any amount invoiced to Kerr-McGee by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to 25 percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. § 17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the non paying party.

9. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if Kerr-McGee fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. §17-17-54 (Supp. 1996); (3) any rule or regulation promulgated by the Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

10. Either Kerr-McGee or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to Kerr-McGee an invoice for all work accomplished prior to the effective date of termination for which Kerr-McGee previously has not remitted payment. Kerr-McGee will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

SO AGREED AND ORDERED, this the _____ day of December, 1996.

J. I. Palmer, Jr.
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the _____ day of _____, 1996.

By: _____

Title: _____
(Company)

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of Kerr-McGee Chemical Corporation

Order No. _____

P. O. Box 25861

Oklahoma City OK 73125

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department Environmental Quality ("MDEQ") and (Kerr-McGee Chemical Corporation), ("Kerr-McGee") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. Kerr-McGee has been sued by various individuals, corporations and the Hattiesburg School District with regard to alleged chemical contamination on the Sixteenth Section Property located in Hattiesburg, Mississippi. Kerr-McGee is alleged to be the successor in interest to a former operator of a creosote plant which was located on a portion of the Sixteenth Section Property. Kerr-McGee asserts it has never owned any interests in the Sixteenth Section Property. Kerr-McGee asserts it has never operated any creosote plant or other facility on the Sixteenth Section Property. Kerr-McGee asserts it has never generated and/or disposed of any material on the Sixteenth Section Property. While Kerr-McGee asserts it has no legal or equitable interest in the property, it is interested in a proper characterization of the site. Kerr-McGee denies any liability whatsoever for any materials which may have come to be located on or under the Sixteenth Section Property. ~~By entering this agreement, neither the Commission nor MDEQ asserts or waives any position regarding any liability of Kerr-McGee for contamination on said property.~~

2. MDEQ has reason to believe that conditions ~~may~~ exist on the Sixteenth Section Property which ~~may~~ warrant oversight by MDEQ. Specifically, Kerr-McGee, while denying any and all liability for any materials which may have become located on the property, has requested MDEQ's oversight of certain scientific and technical investigations it intends to conduct on the property. Kerr-McGee has transmitted a Work Plan to MDEQ to conduct a site characterization study on the property or portions thereof.

3. MDEQ considers the site to be an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. By this Agreement MDEQ accepts Kerr-McGee's request for participation in the Program.

4. Kerr-McGee agrees to the following terms and conditions of participation in the Program:

(a) Kerr-McGee will pay to MDEQ simultaneously with the

execution of this document by Kerr-McGee a non-refundable Program application fee of \$500.00.

(b) Kerr-McGee will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site in connection with Kerr-McGee's site investigation. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$75.00 per hour for each hour of MDEQ project officer time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by Kerr-McGee, plus MDEQ's actual cost (above and beyond project officer time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, attached to this order as Appendix 1. MDEQ reserves the right to increase or decrease the per hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify Kerr-McGee in writing of the new cost schedule, and the new cost schedule will become effective forty-five days after the date of the written notice to Kerr-McGee. If Kerr-McGee determines to discontinue its participation in the Program for the site after a change by MDEQ in the per hour and analytical cost schedule, Kerr-McGee may terminate its participation in the program as it stated in paragraph 9, below. MDEQ will send an invoice to Kerr-McGee on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by Kerr-McGee, and Kerr-McGee will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.

(c) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee an advance of the total to be paid to MDEQ pursuant to subsection 3(b) of this agreement in the amount of \$~~6,000.00~~. This amount will be deposited into the Fund to be used by MDEQ as payment of partial payment for the project costs charged to Kerr-McGee in the first and last invoices sent by MDEQ to Kerr-McGee. MDEQ will credit one-half of this amount against the total first invoice amount billed to Kerr-McGee. If a credit balance exists for Kerr-McGee after deducting the first invoice amount from the first ~~one-half~~ of the deposited amount, the remainder of the first ~~one-half~~ of the deposited amount will be deducted from the second invoice amount, as so on, until the first ~~one-half~~ of the deposited amount is exhausted. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the first ~~one-half~~ of the deposited amount. At the completion of MDEQ's involvement with the project, the remaining ~~one-half~~ of this amount will be credited against the final invoice

sent by MDEQ to Kerr-McGee. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 3(b), above, in excess of the second ~~one-half~~ ~~one-half~~ of the deposited amount. Any deposited amount remaining after payment in full of the last project invoice will be refunded to Kerr-McGee.

5. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.

6. Kerr-McGee will obtain on behalf of MDEQ access to the site to be evaluated pursuant to this Agreed Order. Since the site is owned or operated by a third party, Kerr-McGee will provide to MDEQ a copy of a document assuring MDEQ site access for the remainder of MDEQ's activities under this Order. In the event access is not received by Kerr-McGee on a voluntary basis, Kerr-McGee will seek relief from the appropriate authority.

7. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against Kerr-McGee. This agreement does not represent the settlement or release of any liability of Kerr-McGee for any action, inaction or property condition. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site. By entering into this Agreement Kerr-McGee admits no liability whatsoever for conditions at the site and specifically denies any such liability.

8. If any part of any amount invoiced to Kerr-McGee by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to 25 percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. § 17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the non paying party.

9. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if Kerr-McGee fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. § 17-17-54 (Supp. 1996); (3) any rule or regulation

promulgated by the Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

10. Either Kerr-McGee or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to Kerr-McGee an invoice for all work accomplished prior to the effective date of termination for which Kerr-McGee previously has not remitted payment. Kerr-McGee will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

SO AGREED AND ORDERED, this the _____ day of _____, 1996.

J. I. Palmer, Jr.
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the _____ day of _____, 1996.

BY: _____

TITLE: _____

[COMPANY] ~~Kerr-McGee Chemical Corporation~~

~~Gov. Sikes Create Kerr-McGee V.P. Order With Huck and Russell's Revolt: Redneck and xobxvvd~~

STATE OF _____

COUNTY or PARISH OF _____

PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named _____ who first being duly sworn, did state upon his/her oath and acknowledge to me that he/she is the _____ of [COMPANY] and is authorized by that Corporation to sign this Agreement and to enter this Agreement on behalf of [COMPANY].

SWORN TO AND SUBSCRIBED BEFORE ME this the _____ day

of _____ 1996

NOTARY PUBLIC

MY COMMISSION EXPIRES



FILE COPY

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

June 16, 1995

Mr. Marc Boutwell
Barrett Law Offices
Post Office Box 631
Lexington, Mississippi 39095

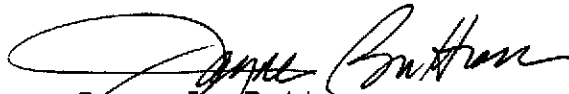
RE: Hattiesburg Public School District v. Kerr-McGee
Chemical Corporation and Union Camp Corporation

Dear Mr. Boutwell:

Russell Smith has asked me to assist him in a matter regarding contamination on 16th section lands held in trust by the Hattiesburg Public School District. My understanding is that you represent the school district in litigation to recover damages to the school's property. We are in the process of evaluating the file to determine potentially responsible parties and to develop the Agency's plan of action.

I hope to have information to you within the next two weeks. Please call if you have any questions and I will presume to do likewise. Thank you for your continued patience.

Sincerely,


Jayne L. Buttross
Attorney

cc: Russell Smith

May 2, 1995

Mr. Michael S. Bonner, Ph.D.
Bonner Analytical Testing Company
2703 Oak Grove Road
Hattiesburg, MS 39402

Re: Gibson Shopping Center
Target Cleanup Levels
Hattiesburg, Mississippi

Dear Mr. Bonner:

I am send the attached table to you in response to your request dated April 20, 1995 and verbal request sometime before that date. I would expect any cleanup on the Gibson Shopping Center to meet both the target cleanup level for total carcinogenic polyaromatic hydrocarbons and the specific target cleanup level listed for the other compounds.

If you should have any additional questions regarding this matter please call me, (601) 961-5072. I will get back with you as staffing and priorities allow.

Sincerely,

Russell H. Smith, P.E., Chief,
Uncontrolled Sites Section

Forrest County Requested Environmental Assessment
 Gibson Shopping Center
 Analytical Results Verses Target Clean-up Levels

Compounds Detected (All Units = PPM)	Soil #6 0-1'	Soil #7 0-1'	Target Clean- up Level
Acenaphthene	0.107	2.47	4800
Acenaphthylene	0.0505	4.615	
Anthracene	0.0883	8.374	24000
Benzo(a)anthracene ¹	0.7	42.449	
Benzo(b)fluoranthene	0.501	30.45	95
Benzo(g,h,i)perylene	0.261	13.008	
Benzo(k)fluoranthene ¹	0.807	44.746	
Chrysene ¹	0.727	44.074	0.38
Dibenzo(a,h)anthracene ¹	0.115	5871	
Fluoranthene	0.596	78.96	3200
Fluorene	nd	4.719	3200
Indeno(1,2,3-c,d)pyrene ¹	0.467	22.322	
Naphthlene	0.0068	0.73	52
Phenanthrene	0.0903	8.562	
Pyrene	0.698	75.011	2400
Total Carcinogen PAHs	4.105	233.593	10

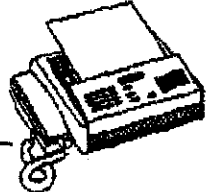
"1" = Compound Classified as a B2 Probable Human Carcinogen by the USEPA



BONNER ANALYTICAL TESTING COMPANY

2703 Oak Grove Road Hattiesburg, MS 39402

Fax us @ (601) 268-7084



FAX COVER SHEET

Date / Time:

4.21.95 / 0915

FILE COPY

Company Name:

DEQ

Contact Name:

Russell Smith

Fax number:

354-6612

Fax Sent by:

Laurie

Number of Pages:

2

(Including Cover Sheet)

Fax Description:

Multiple horizontal lines for describing the fax content.

If there are any problems with this transmission, please notify us immediately. Our phone number is: (601) 264-2854



BONNER ANALYTICAL TESTING COMPANY

Phone:
(601) 264-2854

2703 Oak Grove Road
Hattiesburg, MS 39402

Fax:
(601) 268-7084

" Testing Your World for a Safer Tomorrow "

April 20, 1995

Mississippi Department of Environmental Quality
PO Box 10385
Jackson, MS 39289
ATTN: Mr. Russell Smith

Dear Mr. Smith:

Awhile back, we spoke of a cleanup at the Gulf States Creosote property in Hattiesburg, MS. I am interested in your thoughts on this cleanup effort, as any information you can provide will be most helpful. Specifically, I am interested in cleanup criteria at the Gibson's Shopping Center located on West Pine Street. If you have any questions, or if I can be of assistance to you, please do not hesitate to call me.

Sincerely,



Michael S. Bonner, Ph.D.

FILE COPY

Surf

INTAKE SHEET FOR REQUEST FOR ACCESS TO PUBLIC RECORDS

DATE: JANUARY 13, 1995

NAME: ROSS D. WILLIAMS

TELEPHONE NUMBER: 982-8349

COMPANY NAME: WTE

ADDRESS: 6424 LAKEOVER ROAD, SUITE A, BOX 7, JACKSON, MS 39213

DOCUMENT INFORMATION

1. FACILITY: OLD TRUCKING FACILITY 11470

COUNTY: HINDS DIVISION: UST

2. FACILITY: GULF STATES CREOSOTE

COUNTY: FORREST DIVISION: HAZARDOUS WASTE; CERCLA

3. FACILITY:

COUNTY: DIVISION:

APPOINTMENT TIME AND DATE: JANUARY 13, 1995 - 1:30

BILLING INFORMATION

NO. OF COPIES MADE: 150 @ \$.25 = _____; LUST RPT. _____;

DISK _____; PRE-PRINTED REPORT (#____) _____ (UNDER 40 PGS)

NO CHARGE (UNDER 50 COPIES OR REGULATIONS) _____ XEROX JOB _____

TOTAL AMOUNT DUE:

PAYMENT RECEIVED:

BILL ORGANIZATION:

PUBLIC RECORDS ADMINISTRATOR

FRANCES MARIE GRILLO

(601) 961-5666

F. Grillo

PERSON REVIEWING FILES:

Ron Williams

COMMENTS:

THIS IS NOT A BILL - DO NOT PAY
BILLING DEPARTMENT WILL FORWARD INVOICE 1W/IN 10 DAYS

W
T
E
ENVIRONMENTAL COMPLIANCE & REMEDIAL SPECIALISTS



January 11, 1994

Ms. Francis Grillo
Public Records Administrator
MS Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289

Re: Review of Public Files

Dear Ms. Grillo:

This letter serves as a request to have an appointment made at MDEQ in order to review the following CERCLA file:

Gulf States Creosote
Forrest County
MSD 985967199

Please contact me at (601) 982-8349 at your earliest convenience to confirm my appointment.
Thanking you in advance.

Sincerely,

A handwritten signature in cursive script that reads "Ross D. Williams".

Ross D. Williams
Walker-Thomas Environmental, Inc.

WALKER - THOMAS ENVIRONMENTAL, INC.

6424 Lakeover Road, Suite A, Box 7 ♦ Jackson, MS 39213
(601) 982-8349 ♦ fax (601) 982-7481

W
T
E
ENVIRONMENTAL COMPLIANCE & REMEDIAL SPECIALISTS



January 11, 1994

Ms. Francis Grillo
Public Records Administrator
MS Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289

Re: Review of Public Files

Dear Ms. Grillo:

This letter serves as a request to have an appointment made at MDEQ in order to review the following **UST Closure Report File** for Forestry Suppliers, Inc. submitted by Hazclean Environmental Consultants, Inc:

Old Trucking Facility
Beatty and Guice Street
Jackson, MS

Please contact me at (601) 982-8349 at your earliest convenience to confirm my appointment.
Thanking you in advance.

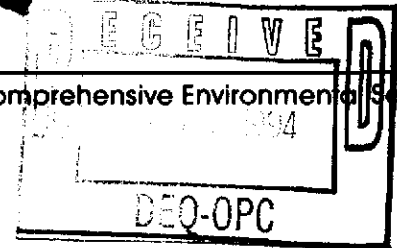
Sincerely,

A handwritten signature in black ink, appearing to read "Ross D. Williams". The signature is fluid and cursive.

Ross D. Williams
Walker-Thomas Environmental, Inc.

WALKER - THOMAS ENVIRONMENTAL, INC.

6424 Lakeover Road, Suite A, Box 7 ♦ Jackson, MS 39213
(601) 982-8349 ♦ fax (601) 982-7481



August 23, 1994

Mr. Ken Whitten
Mississippi Department of Environmental Quality
Office of Pollution Control
Hazardous Waste Division
Uncontrolled Sites Section
P. O. Box 10385
Jackson, MS 39289-0385

FILE COPY

Re: Gulf States Creosote Company Process Area
Phase II Site Investigation
Hattiesburg, MS

Dear Ken:

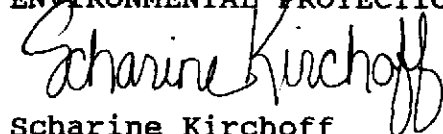
Enclosed please find two (2) copies of Environmental Protection Systems, Inc. (EPS) Report No. 1.V7101.002 sent from Mr. J. B. Van Slyke, Attorney for the Hattiesburg School District. The report documents the results of EPS' Phase II Site Investigation of the Gulf States Creosote Company Process Area.

We are providing you with copies of the report in preparation for our upcoming meeting with you and Mr. Russell Smith on Thursday, September 1, 1994 at 1:30 pm at DEQ. Mr. J. B. Van Slyke, Mr. Lyle Silka, and myself will attend the meeting. Mr. Silka directs the operations of the Mid-Atlantic Region of EPS, and he is a technical expert in the assessment and remediation of creosote contaminated sites. A copy of Mr. Silka's resume is attached for your review.

If you have any questions regarding the Gulf States project please contact me at (601)956-1400. Thank you for your time and assistance with this matter.

Sincerely,

ENVIRONMENTAL PROTECTION SYSTEMS, INC.



Scharine Kirchoff
Senior Project Manager, Environmental Group

Enclosures

cc: Mr. J. B. Van Slyke, Esq.
Mr. Lyle Silka, V.P.



LYLE R. SILKA
Vice President
Mid-Atlantic Region
and
Principal Hydrogeologist
Environmental Protection Systems, Inc.

EDUCATION: B.A. Geology, University of Northern Iowa, 1972
M.S. Hydrogeology, Oklahoma State University, 1974
(Degree date May 1975)
Post-Graduate Studies in Hydrogeochemistry,
University of Kansas, 1974-1975

PROFESSIONAL CERTIFICATIONS:
Registered Geologist, Delaware, no. 346
Certified Professional Geologist, Indiana, no. 284
Certified Professional Geologist, Virginia, no. 972

PROFESSIONAL MEMBERSHIPS:
American Chemical Society
Association of Engineering Geologists
Association of Groundwater Scientists and Engineers
Geological Society of America
National Ground Water Association

HONORS: American Society of Civil Engineers Environmental Engineering Division
1985 Wesley W. Horner Award for the paper "Modeling Ground-Water
Flow at Love Canal, NY."

U.S. Environmental Protection Agency Bronze Medal in recognition of
significant contribution to the mission of the Environmental Protection
Agency for development and implementation of the Surface Impoundment
Assessment, 1979.

U.S. Environmental Protection Agency Certificate of Award in
recognition of noteworthy contribution and special achievement in the
Agency for development of a waste disposal site evaluation methodology
for the Surface Impoundment Assessment, 1979.

U.S. Environmental Protection Agency traineeship in water quality
studies, Oklahoma State University, 1972- 1974.

TECHNICAL

SPECIALTIES:

Environmental Assessment and Impact Analysis
Hydrogeology
Geology
Geochemistry
Remediation of Soil and Groundwater
Computer Modeling Applications
Hazardous and Solid Waste Management and Regulations
Superfund (RI/FS, RD/RA)

PROFESSIONAL EXPERIENCE:

Mr. Silka manages the Mid-Atlantic Region's operations and provides technical assistance on a wide variety of projects in industrial and municipal waste management, Superfund and contaminated site investigations and remediation, and environmental assessments/impact analysis. He provides technical expertise to clients relating to hydrogeology, transport and fate of contaminants in the environment, risk assessment, waste management practices, and remediation design and implementation.

Mr. Silka has over 20 years of experience in the investigation and remediation of soil and groundwater contamination. He has served as technical director for numerous Superfund and other contaminated site investigations and remedial actions. He has been involved in the complete range of Superfund projects including RI/FS, RD, and RA tasks at such sites as the L.A. Clarke Superfund site, South Tacoma Channel/Well 12A Superfund site, and U.S. Titanium Superfund site. Mr. Silka directed remedial designs for soil and groundwater contaminated with creosote, chlorinated solvents, metals, PCBs, and petroleum hydrocarbons.

Mr. Silka has directed remedial design studies, including bench- and pilot-scale tests for:

Primary recovery and *in situ* soil flushing of free-phase creosote and petroleum,

In situ landfarming of soil contaminated with PNAs and petroleum fuels, and

In situ biostimulation for remediation of groundwater systems contaminated with chlorinated solvents, PNAs, BTEX, and petroleum hydrocarbons.

In situ bioremediation of organics in river and lake sediment.

Mr. Silka has directed several hundred site investigations and environmental assessments across the United States. These projects have required knowledge of federal and state environmental programs, addressing concerns related to requirements under NEPA, CAA, CWA, SDWA, RCRA, CERCLA/SARA. He has contributed to environmental impact statements and reviewed draft EIS' while with the U.S. Environmental Protection Agency and on behalf of the Navajo Nation.

Mr. Silka is an internationally recognized expert in soil-gas surveys and vapor extraction technologies. He has authored or coauthored six publications regarding the conduct and interpretation soil-gas surveys and has directed the completion of over 100 soil-gas surveys across the nation that ranged in size from 10 to 1800 sampling points.

EMPLOYMENT HISTORY:

March 1994 to Present	Vice President and Principal Hydrogeologist Mid-Atlantic Region Environmental Protection Systems, Inc. Chantilly, VA
1984 to 1994	President and Principal Hydrogeologist HYDROSYSTEMS, Inc. Sterling, VA
1994	Director of Hydrogeology CorStar, Inc. Bethesda, MD
1980 to 1983	Senior Hydrogeologist GeoTrans, Inc. Herndon, VA
1977 to 1980	Hydrogeologist U.S. Environmental Protection Agency Washington, DC
1976 to 1977	Hydrogeologist U.S. Environmental Protection Agency Kansas City, MO
1975 to 1976	Research Geochemist Isotope Laboratory Department of Geology University of Kansas Lawrence, KS

SELECTED PUBLICATIONS:

Siler, A.K., J.M. Rosen, L.R. Silka, (in preparation), *In Situ* Biostimulation Applied to Gasoline Contamination in a Sandy Aquifer.

Bell, P.E., and L.R. Silka, (Abstract) Results of Bench-Scale Experiments on *In Situ* Biodegradation of Chlorinated Solvents.

Silka, L.R., and S.B. Tremaine, (in preparation), *In Situ* Biodegradation of Petroleum Hydrocarbons - Results of Laboratory Experiments.

Silka, L.R., (in preparation), Natural *In Situ* Biodegradation of Chlorinated Ethanes in Groundwater of the Coastal Plain of Virginia.

MacDonald, R., and L.R. Silka, (in preparation), Alternative Remedial Technologies for PCB Contaminated Soil.

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September 21, 1994



Telephone: (601) 834-2376
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FILE COPY

Kenneth L. Whitten
Environmental Engineer
Bureau Pollution Control
MS. Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

RE: Hattiesburg Public School District vs. Kerr-McGee Chemical Corporation and Union Camp Corporation

Dear Mr. Whitten:

This letter is an attempt on our part to provide you with the necessary information that you need which would connect Kerr-McGee Chemical Corporation and Union Camp Corporation with the hazardous waste site located on what was formally the Gulf States Creosote Company site.

First you will find a copy of the deposition of Paul Davis Mabry. — Mr. Mabry was a former employee of Gulf States Creosote Company, American States Creosote Company/Corporation, Union Bag-Camp Corporation, Moss-American and Kerr-McGee Chemical Corporation.

In summary, Mr. Mabry testified that he was an employee of Gulf States Creosote whose main office was in Hattiesburg. He states that Gulf States Creosote was owned by a family in Kentucky and was later sold to American Creosote Company. He was employed at the Hattiesburg facility in 1938 and worked there until July of 1940. He returned to Hattiesburg in September of 1949 as assistant general superintendent in charge of operations. Mr. Mabry stated that Gulf States Creosote was sold to Hale King of Louisville. Mr. King bought the company somewhere between 1949 and 1956. In 1956 Mr. Mabry was transferred to Louisville. At that time, Union Bag-Camp Paper Company had bought the stock of American Creosote Corporation and according to Mr. Mabry's testimony they wanted to change things up and close the Hattiesburg office. (Page 24 and 25 of Mabry deposition.) In 1956 Mr. Mabry went to Louisville, Kentucky which was the home office of American Creosote Company. He was production control supervisor for all plants. In 1956 H.C. Lucas took control of America Creosote which was then a subsidiary of Union Bag-Camp Company.

In August of 1959, Mr. Mabry was then transferred back to the Meridian American Creosote Corporation plant to act as plant manager. Mr. Mabry was told that the president of Union Bag-Camp requested that he be moved back to the Meridian plant. (see Mabry deposition page 38 and 39.) In 1964, American Creosote Corporation was sold to Kerr-McGee Chemical Corporation. (see Mabry deposition pages 41 and 42). According to Mr. Mabry, the corporate name of American Creosote Corporation was changed to Moss American with the home office in St. Louis, Missouri. In approximately 1966 or 1967 the headquarters was switched to Oklahoma City and the name was changed to Kerr-McGee Chemical Corporation. (see Mabry deposition page 69 and 70).

As you can see, Mr. Mabry is a very important factor in deciding the liability between these two corporations. Certainly, Kerr-McGee Chemical Corporation and Union Camp Corporation are equally responsible under all federal and state hazardous and toxic waste disposal laws. I would suggest that Mr. Mabry's deposition alone is strong enough evidence to name each of the above corporations as responsible parties.

However, I am including other documents which should satisfy your requirements in naming the responsible parties.

Enclosed, please find a deed from Gulf States Creosote Company to American Creosote Corporation covering the subject property of our law suit. Also, I am enclosing another version of the deed that we retyped simply for clarity.

Furthermore, I am enclosing a copy of several ads linking American Creosote Corporation to Union Bag-Camp Paper Corporation and naming American Creosote as a subsidiary of Union Bag-Camp Paper Corporation. I believe that the ads are certainly a strong enough indictment of Union Camp to assess them with any liability that could have been imposed on American Creosote Corporation or Gulf States Creosote Company.

Furthermore, I am enclosing an amended certificate of authority which we have located at the Secretary of States office which shows a name change from American Creosote Corporation to Moss-American, Inc. Next, please find a copy of the merger agreement between Moss-American, Inc. and to Kerr-McGee Chemical Corporation.

All these documents corroborate Paul Mabry's testimony specifically the involvement of major corporate powers of Kerr-McGee Chemical Corporation and Union Camp Corporation.

If you need any further information or you can think of other documents which can be helpful to you please let me know.

Yours very truly,


/Marc Boutwell

MB/cs
cc. J.B. VanSlyke
Russell H. Smith, MSDEQ

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272657

272657

State of Mississippi



Office of Secretary of State
Jackson

AMENDED CERTIFICATE OF AUTHORITY

of

AMERICAN CREOSOTING CORPORATION
changing name to
MOSS-AMERICAN, INC.

The undersigned, as Secretary of State of the State of Mississippi, hereby certifies that duplicate originals of an application of the above corporation for a Certificate of authority to transact business in this State, duly signed and verified pursuant to the provisions of the Mississippi Business Corporation Act, have been received in this office and are found to conform to law.

ACCORDINGLY the undersigned, as such Secretary of State, and by virtue of the authority vested in him by law, hereby issues this Certificate of Authority to transact business in this State from and after this date for the purpose or purposes set forth in the application under the name of

MOSS-AMERICAN, INC.

and attaches hereto a duplicate original of the Application for such Certificate.



C-20

Given under my hand and Seal of Office,

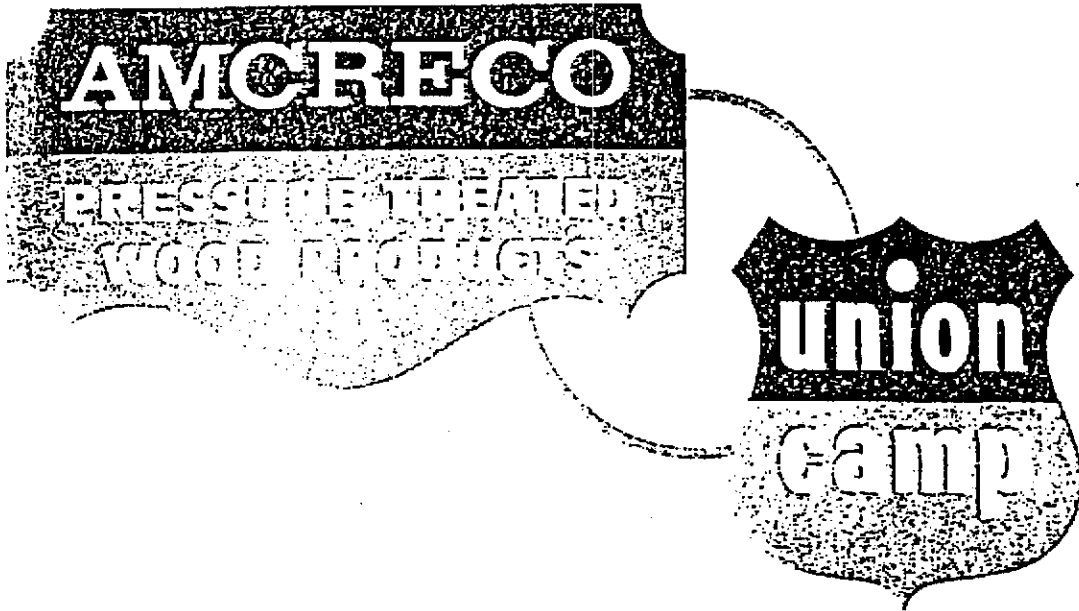
this the 16th day of April

1965

SECRETARY OF STATE.

EXHIBIT C

The linking of these two famous symbols...



means Better Service

for users of treated wood!

The American Creosoting Corporation, a pioneer in the development of the wood preserving industry, has joined forces with Union Bag-Camp Paper Corporation—one of the nation's most progressive manufacturers of products from wood.

As a result, AMCRECO'S technical skill and experience, developed through half a century of serving the largest users of treated wood, is now reinforced by Union-Camp's resources.

Convenient plant locations, extensive resources and experienced personnel have been teamed to provide you with a new standard of service and dependability. This will be reflected in modernized facilities, improved deliveries (from stock in many cases) and careful attention to your specific requirements.

Let us show you how this new organization can be of help to you.

Time is Our Best Testimony!

AMERICAN CREOSOTING CORPORATION
 Louisville 2, Kentucky

18 Strategically Located Treating Plants to Serve You

Subsidiary of

UNION BAG-CAMP PAPER CORPORATION

TIES
 BRIDGE TIES
 POLES
 CROSS ARMS
 PILES
 TIMBER



571-R

7-14976

#50

State of Mississippi



Office of Secretary of State Jackson

Pursuant to the provisions of Section 117, Senate Bill No. 1712, being the new Business Corporation Act of the State of Mississippi, the

KERR-McGEE CHEMICAL CORPORATION

a corporation organized under the laws of the State of
DELAWARE

has filed in this office a certified copy of a merger, merging
MOSS-AMERICAN, INC.
(A Delaware Corporation)

with and into

KERR-McGEE CHEMICAL CORPORATION

as the surviving corporation.



Given under my hand and Seal of office here-
unto affixed this 13th day of September,

1974.

Heber Ladner
Secretary of State

Exhibit D

CERTIFICATE OF OWNERSHIP AND MERGER

MERGING

MOSS-AMERICAN, INC.,
a Delaware Corporation

INTO

KERR-McGEE CHEMICAL CORPORATION,
a Delaware Corporation

PURSUANT TO SECTION 253 OF THE
GENERAL CORPORATION LAW
OF DELAWARE



KERR-McGEE CHEMICAL CORPORATION, a Delaware corporation,
by its undersigned officers, does hereby certify:

1. That KERR-McGEE CHEMICAL CORPORATION, is a corporation
organized and existing under the laws of the State of Delaware,
having been incorporated in such state on October 25, 1967.

2. That MOSS-AMERICAN, INC., is a corporation organized
and existing under the laws of the State of Delaware, having
been incorporated on July 26, 1956, and all of the issued and
outstanding shares of each class of the stock of MOSS-AMERICAN,
INC., being 10,000 shares of common stock, is owned by KERR-
McGEE CHEMICAL CORPORATION, making MOSS-AMERICAN, INC., the
wholly owned subsidiary of KERR-McGEE CHEMICAL CORPORATION.

3. That on the 15th day of August, 1974, the Board of
Directors of KERR-McGEE CHEMICAL CORPORATION, duly adopted a
resolution to merge MOSS-AMERICAN, INC., a wholly owned sub-
sidiary of KERR-McGEE CHEMICAL CORPORATION, into KERR-McGEE
CHEMICAL CORPORATION, with KERR-McGEE CHEMICAL CORPORATION to
assume all of said subsidiary's obligations, said resolution
being as follows, to-wit:

"WHEREAS, KERR-McGEE CHEMICAL CORPORATION is
a corporation organized and existing under the
laws of the State of Delaware; and

"WHEREAS, KERR-McGEE CHEMICAL CORPORATION owns
all of the issued and outstanding shares of each
class of the stock of MOSS-AMERICAN, INC., a
corporation organized and existing under the laws
of the State of Delaware.

"WHEREAS, it is deemed advisable and to the best interest of said MOSS-AMERICAN, INC. that it be merged into KERR-MCGEE CHEMICAL CORPORATION, the parent corporation, effective as of September 1, 1974, pursuant to Section 253 of the General Corporation Law of the State of Delaware;

"NOW, THEREFORE, BE IT RESOLVED, that effective as of September 1, 1974, MOSS-AMERICAN, INC., (hereinafter referred to as the "Merged Corporation") be, and the same shall, by virtue hereof, be merged into KERR-MCGEE CHEMICAL CORPORATION (hereinafter referred to as the "Surviving Corporation") pursuant to the provisions of Section 253 of the General Corporation Law of the State of Delaware, and that the Surviving Corporation shall, and does hereby, assume all of the obligations of the Merged Corporation.

"BE IT FURTHER RESOLVED, that pursuant to such merger, all the estate, property, rights, privileges and franchises of the Merged Corporation shall vest in and be held and enjoyed by the Surviving Corporation as fully and entirely and without change or diminution as the same were before held and enjoyed by the Merged Corporation, and shall be managed and controlled by the Surviving Corporation, but subject to all liabilities and obligations of the Merged Corporation, and rights of all creditors thereof.

"BE IT FURTHER RESOLVED, that pursuant to such merger, all of the issued and outstanding shares of the capital stock of the Merged Corporation, all such shares being owned by the Surviving Corporation, shall be cancelled.

"BE IT FURTHER RESOLVED, that all presently existing and established bank accounts or other depositories for the deposit and withdrawal of funds of, by and on behalf of the Merged Corporation shall be maintained, utilized and kept in force and effect for the deposit and withdrawal of funds of, by or on behalf of the Surviving Corporation, either in the Surviving Corporation's name or in the name of said Merged Corporation, and the signature cards and designations of officers and agents now authorized to deposit or withdraw money in or from said bank accounts or depositories shall remain in effect until cancelled or revoked.

"BE IT FURTHER RESOLVED, that all of such banks or other depositories are authorized to accept and recognize such signatures for the withdrawal of funds until the same shall have been revoked or cancelled by the Surviving Corporation.

"BE IT FURTHER RESOLVED, that the officers and directors of the Surviving Corporation are hereby ordered and directed to cause a copy of this resolution, duly certified, to be filed in the office of the Secretary of State of the State of Delaware and to do and perform such other acts and make such other filings as may be required in order to effectuate such merger and to comply with the applicable laws relative thereto."

4. Such resolutions have not been rescinded or modified and all are in full force and effect.

5. That said merger is pursuant to and in accordance with the provisions of Section 253 of the General Corporation Law of the State of Delaware and shall be effective on the 1st day of September, 1974 as authorized by Section 103(d) of said law.

IN WITNESS WHEREOF, said KERR-MCGEE CHEMICAL CORPORATION has caused its corporate seal to be hereunto affixed and this Certificate to be signed by the undersigned officers this 16th day of August, 1974.

CORPORATE SEAL

KERR-MCGEE CHEMICAL
CORPORATION
DELAWARE
1967

KERR-MCGEE CHEMICAL CORPORATION

By s/Wm. J.F. Francis
President

ATTEST: By s/Carter G. Dudley
Assistant Secretary

STATE OF OKLAHOMA)
) ss.
COUNTY OF OKLAHOMA)

BE IT REMEMBERED, that on this 16th day of August, 1974, personally came before me a Notary Public in and for the County and State aforesaid, Wm. J.F. Francis, a -- President of KERR-MCGEE CHEMICAL CORPORATION, a corporation of the State of Delaware, the corporation described in and which executed the foregoing Certificate, known to me personally to be such, and he, the said Wm. J.F. Francis, as such -- President, duly executed said Certificate before me and acknowledged the said Certificate to be his act and deed and the act and deed of said Corporation; that the signatures of the said -- President and of the Assistant Secretary of said Corporation to said foregoing Certificate are in the handwriting of the said -- President and Assistant Secretary respectively, and that the seal affixed to said Certificate is the common or corporate seal of said Corporation; and that the facts therein set forth are true to the best of his knowledge, information and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office the day and year aforesaid.

s/Sharon S. Lyon
Notary Public

My Commission Expires:

June 11, 1977

NOTARIAL SEAL

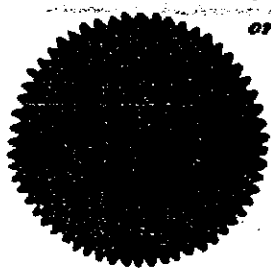
State of Delaware



Office of Secretary of State

I, Robert H. Reed, Secretary of State of the State of Delaware, do hereby certify that the above and foregoing is a true and correct copy of Certificate of Ownership of the "KERR-MCCRE CHEMICAL CORPORATION", merging "MOSS-AMERICAN, INC.", pursuant to Section 253 of the General Corporation Law of the State of Delaware, as received and filed in this office the nineteenth day of August, A.D. 1974, at 10 o'clock A.M.

In Testimony Whereof, I have hereunto set my hand and official seal at Dover this third day of September in the year of our Lord seventy-four one thousand nine hundred and seventy-four.



Robert H. Reed

Robert H. Reed

Secretary of State

G. A. Wadden

G. A. Wadden

Asst Secretary of State

STATE OF MISSISSIPPI

Filing stamp

COUNTY OF FOREST

For and in consideration of the sum of One Dollar (\$1.00), cash in hand paid, the receipt of which is hereby acknowledged, and for the purposes hereinafter recited, the undersigned GULF STATES CREOSOTING COMPANY, a Delaware corporation qualified and authorized to do, and doing, business in the State of Mississippi, acting herein by and through its proper officers, hereunto duly and fully authorized and empowered, grantor herein, does hereby grant, bargain, sell, convey and warrant, subject to the exceptions, limitations and conditions hereinafter set forth, unto AMERICAN CREOSOTING CORPORATION, a Delaware corporation, grantee herein, the remaining unexpired term of the 16th section leasehold interest for a period of ninety-nine years from July 7, 1947, and no longer, evidenced by original lease, contract and agreement of record in the office of the Chancery Clerk of Forest County, Mississippi, in Supervisors Minute Book 22 at pages 467 to 69, and in land deed book 96 at pages 470-72, and also, by amendatory and corrective lease contract and agreement executed under date of January 6, 1958, and of record in the office of the Chancery Clerk of Forest County, Mississippi, and supervisors Minute Book 41 at pages 335-39 and in Land Deed Record Book 95 at pages 6-10, in, on, to and covering the following described land lying, being and situated in Section 16, Township 4 North, Range 13 West in the City of Hattiesburg, Forest County, Mississippi, to-wit:

For clarity there is attached hereto, marked Exhibit A and made a part hereof for all purposes, survey of R. L. Morrison, C.E., dated December 17, 1957, wherein the property hereinabove particularly described is delineated to scale.

It is the intention of the grantor to convey to the grantee all its real estate lying and situated in Forest County, Mississippi.

This instrument is executed, and this conveyance made, subject

to, and the warranty hereof is expressly limited by, the following:

1. All of the terms and provisions of the original lease contract and agreement and amendatory and corrective lease contract and agreement hereinabove identified, specifically including, but without limitation, reservation of title to all oil, gas and other minerals and reservation of title to all merchantable timber as therein set forth.

2. All statutory provisions of the State of Mississippi, dealing with and affecting 16th Section lands within the State of Mississippi in the leasing and use thereof.

3. All grants, easements, permits or rights-of-way over, across or relating to the hereinabove described land, if any, appearing of record in the office of the Chancery Clerk of Forest County, Mississippi. This instrument is executed by reason of the following facts for the following purposes:

The grantor herein has heretofore existed as a wholly owned subsidiary of the grantee herein. There has heretofore been duly and properly approved and adopted by the stockholders of both the grantor herein and the grantee herein a plan of complete liquidation of the grantor herein, whereby, among other things, the grantor herein would be dissolved, and its capital stock cancelled and retired, and the grantee herein would succeed all of the assets and assume all of its liabilities, more particularly, whereby legal title to all real property standing in the name of the grantor herein would be conveyed to the grantee herein, as the owner of all the outstanding capital stock of the grantor herein, as aforesaid, as heretofore owned and held the equitable or beneficial interest in and title to said real properties. Therefore, this instrument is executed in pursuance of said plan of complete liquidation, and solely for the purpose of vesting legal title to the hereinabove described properties in the grantee herein, in accordance with said plan of complete liquidation.

WITNESS the signature and corporate seal of the undersigned grantor hereunto affixed by and through its fully authorized and

empowered officers, on this the 31st day of July, A.D., 1958.

GULF STATES CREOSOTING COMPANY,
a Delaware Corporation

BY: _____
Exec. Vice-Pres.

ATTEST:

(Secretary)

(SEAL)

STATE OF KENTUCKY
COUNTY OF JEFFERSON

Personally appeared before me, the undersigned authority in and for said County and State, H. C. Lucas and R. J. Rubsch, Executive Vice-President and Secretary, respectively, of Gulf States Creosoting Company, a Delaware Corporation, who acknowledged that they signed, sealed, executed and delivered the above and foregoing warranty deed on the date and year therein mentioned, for and on behalf of, and at the act and deed of, said corporation, they, and each of them, being fully authorized and empowered so to do, as such officers of said corporation.

Given under my hand and official seal of office on this the 31st day of July, A.D., 1958.

Notary Public
My Commission Expires: 9/21/59

(SEAL)

STATE OF MISSISSIPPI COUNTY OF FORREST
I hereby certify that this instrument was filed for record in my office on
this 16th day of July 1958 at 11:57
and was recorded in my office on
this 16th day of July 1958 at 11:57
and was recorded in my office on
this 16th day of July 1958 at 11:57

Blair McMillan

WARRANTY DEED

STATE OF MISSISSIPPI
COUNTY OF FORREST

FOR AND IN CONSIDERATION of the sum of ONE DOLLAR (\$1.00), cash in hand paid, the receipt of which is hereby acknowledged, and for the purposes hereinafter recited, the undersigned GULF STATES CREOSOTING COMPANY, a Delaware corporation qualified and authorized to do, and doing, business in the State of Mississippi, acting herein by and through its proper officers hereunto duly and fully authorized and empowered, Grantor herein, does hereby grant, bargain, sell, convey and warrant, subject to the exceptions, limitations and conditions hereinafter set forth, unto AMERICAN CREOSOTING CORPORATION, a Delaware corporation, Grantee herein, the remaining unexpired term of a Sixteenth Section leasehold interest for a period of ninety-nine years from July 7, 1947, and no longer, evidenced by original Lease Contract and Agreement of record in the office of the Chancery Clerk of Forrest County, Mississippi, in Supervisors Minute Book 22 at Pages 467-69, and in Land Deed Record Book 96 at Pages 470-72, and also, by Amendatory and Corrective Lease Contract and Agreement executed under date of January 6, 1958, and of record in the office of the Chancery Clerk of Forrest County, Mississippi, in Supervisors Minute Book 31 at Pages 335-39 and in Land Deed Record Book 195 at Pages 6-10, in 00, 30 and covering the following described land lying, being and situate in Section 16, Township 4 North Range 13 West in the City of Hattiesburg, Forrest County, Mississippi, to-wit:

A parcel of land located in and forming a part of Section 16, Township 4 North, Range 13 West, Forrest County, Mississippi, being definitely and particularly described as follows:

Commencing at the Northwest corner of the SW 1/4 of said Section 16, in said Township and Range run South along the West boundary line of said Section 16 a distance of 429.8 feet to a point on a projection or extension of the North boundary line of Block 13 of the Hicks Subdivision of the D. D. McInnis Third Survey of or Addition to the City of Hattiesburg, Forrest County, Mississippi (which Subdivision lies Northwesterly of the New Orleans and Northeastern Railroad right of way) which point is the point of beginning of the parcel of land herein described, and from this point to, beginning run thence East along said projection or extension of the said North boundary line of said Block 13 a distance of 808.0 feet to a point on the eastern boundary line of said Block 13, the above being located by sixteenth section survey of the City of Hattiesburg and set forth on that certain survey of the City of Hattiesburg, Mississippi, made and dated December 24, 1957, and of record in the office of the Chancery Clerk of Forrest County, Mississippi, in Supervisors Minute Book 37 at Pages 1-10, and in Land Deed Record Book 195 at Pages 6-10, in 00, 30 and covering the following described land lying, being and situate in Section 16, Township 4 North Range 13 West in the City of Hattiesburg, Forrest County, Mississippi, to-wit:

Exhibit A & B

East along said Westerly bank of said Gordon's Creek a distance of 212.5 feet to a point on a projection or extension of the Southeast boundary line of 32nd Avenue in the City of Hattiesburg, Mississippi, thence North 44 degrees 32 minutes East along said projection or extension of said Southeast boundary line of said 32nd Avenue and then South Southeasterly boundary line of said 32nd Avenue, itself a distance of 159.0 feet to a point that is 150.0 feet Southwesterly of the point of intersection of the said Southeasterly boundary line of said 32nd Avenue with the Southwesterly boundary line of Florence Street in the City of Hattiesburg, Mississippi, thence South 45 degrees 28 minutes East and parallel with said Southwesterly boundary line of said Florence Street a distance of 400.0 feet to a point on the Southeasterly boundary line of West Pine Street (sometimes called Lewis Avenue or Street) in the City of Hattiesburg, Mississippi, thence South 44 degrees 32 minutes West along said Northwest boundary line of said West Pine Street a distance of 606.0 feet to a point on a projection or extension of the Southwesterly boundary line of that certain paved street that has no official name, but is generally and commonly designated as Scooba Street in the City of Hattiesburg, Mississippi (which said Southwesterly boundary line of said Scooba Street is 25 feet Southwesterly of, and parallel to, the center line of the 18 foot strip of said street which is now paved), thence South 45 degrees 28 minutes East along said projection or extension of the said Southwesterly boundary line of said Scooba Street and the Southwesterly boundary line of said Scooba Street itself a distance of 483.0 feet to a point on the Northwest right of way line of the New Orleans and Northeastern Railroad, run thence South 44 degrees 32 minutes East along said Northwest right of way line of said Railroad a distance of 3776.8 feet, run thence North 45 degrees 25 minutes West a distance of 350 feet to a concrete right of way marker on the Northeast right of way line of U. S. Highway No. 49 (also generally and commonly known and referred to as the Hattiesburg By-Pass), continue thence North 45 degrees 25 minutes West along said Northeast right of way line of said U. S. Highway No. 49 a distance of 399.2 feet to a point on the West boundary line of said section 16 and run thence North and along said West boundary line of said section 16 a distance of 1107.5 feet to the point of beginning. LESS AND EXCEPT THEREFROM, HOWEVER, that certain tract or parcel of land heretofore conveyed by the Grantor herein to A. K. McInnis, Jr. by Deed dated February 26, 1958 and of record in the office of the Chancery Clerk of Forrest County, Mississippi, in Land Deed Book 195 at Pages 398-402, described as follows, to-wit:

A parcel of land located in and forming a part of Section 16, Township 4 North, Range 13 West in the City of Hattiesburg, Forrest County, Mississippi, being definitely and particularly described as follows:

Commencing at the Northwest corner of the Southwest Quarter of Section 16 in said Township and Range, run South along the West boundary line of said Section 16 a distance of 429.8 feet to a point on a projection or extension of the North boundary line of Block 13 of the High subdivision of The D. B. McInnis Third Survey of or Addition to the City of Hattiesburg, Mississippi (which subdivision lies Northwest of the New Orleans and Northeastern Railroad right of way), run thence East along the West boundary or extension of the said North boundary line of said Block 13 a distance of 1107.5 feet to the North boundary of said Block 13, then East along said North boundary of said Block 13 to the West bank of Gordon's Creek (all of which said Block 13 is fixed and permanent monuments and fully described in Deed Book 157 certain Survey by A. K. McInnis, Jr. dated and recorded in the office of the Chancery Clerk of Forrest County, Mississippi, in Land Deed Book 195 at Pages 398-402, North 2 degrees 47 minutes East along the West bank of said Gordon's Creek a distance of 142.0 feet, then East along said West bank of said Gordon's Creek a distance of 142.0 feet, then North along said West bank of said Gordon's Creek a distance of 212.5 feet to a point on a projection or extension of the Southeast boundary line of 32nd Avenue in the City of Hattiesburg, Mississippi, thence North 44 degrees 32 minutes East along said projection or extension of said Southeast boundary line of said 32nd Avenue and then South Southeasterly boundary line of said 32nd Avenue, itself a distance of 159.0 feet to a point that is 150.0 feet Southwesterly of the point of intersection of the said Southeasterly boundary line of said 32nd Avenue with the Southwesterly boundary line of Florence Street in the City of Hattiesburg, Mississippi, thence South 45 degrees 28 minutes East and parallel with said Southwesterly boundary line of said Florence Street a distance of 400.0 feet to a point on the Southeasterly boundary line of West Pine Street (sometimes called Lewis Avenue or Street) in the City of Hattiesburg, Mississippi, thence South 44 degrees 32 minutes West along said Northwest boundary line of said West Pine Street a distance of 606.0 feet to a point on a projection or extension of the Southwesterly boundary line of that certain paved street that has no official name, but is generally and commonly designated as Scooba Street in the City of Hattiesburg, Mississippi (which said Southwesterly boundary line of said Scooba Street is 25 feet Southwesterly of, and parallel to, the center line of the 18 foot strip of said street which is now paved), thence South 45 degrees 28 minutes East along said projection or extension of the said Southwesterly boundary line of said Scooba Street and the Southwesterly boundary line of said Scooba Street itself a distance of 483.0 feet to a point on the Northwest right of way line of the New Orleans and Northeastern Railroad, run thence South 44 degrees 32 minutes East along said Northwest right of way line of said Railroad a distance of 3776.8 feet, run thence North 45 degrees 25 minutes West a distance of 350 feet to a concrete right of way marker on the Northeast right of way line of U. S. Highway No. 49 (also generally and commonly known and referred to as the Hattiesburg By-Pass), continue thence North 45 degrees 25 minutes West along said Northeast right of way line of said U. S. Highway No. 49 a distance of 399.2 feet to a point on the West boundary line of said section 16 and run thence North and along said West boundary line of said section 16 a distance of 1107.5 feet to the point of beginning.

of 32nd Avenue in the City of Hattiesburg, Mississippi, run thence North 44 degrees 32 minutes East along said projection or extension of said Southeasterly boundary line of said 32nd Avenue and along said Southeasterly boundary line of said 32nd Avenue itself a distance of 2759.0 feet to a point that is 150.0 feet Southwest of the point of intersection of the said Southeasterly boundary line of said 32nd Avenue with the Southwest boundary line of Florence Street in the City of Hattiesburg, Mississippi, which said point is the point of beginning of the parcel of land herein described, and from this point of beginning run thence South 43 degrees 28 minutes East and parallel with said Southwest boundary line of said Florence Street a distance of 400.0 feet to a point on the Northwest boundary line of West Pine Street (sometimes called in Avenue or Street) in the City of Hattiesburg, Mississippi, run thence South 44 degrees 32 minutes West along said Northwest boundary line of said West Pine Street and a Southwest projection or extension thereof a distance of 890.0 feet, run thence North 45 degrees 28 minutes West a distance of 210.0 feet, run thence North 44 degrees 32 minutes East and parallel with said Southeasterly boundary line of said 32nd Avenue a distance of 50.0 feet, run thence North 45 degrees 28 minutes West a distance of 190.0 feet to a point on said Southeasterly boundary line of said 32nd Avenue and run thence North 44 degrees 32 minutes East along said Southeasterly boundary line of said 32nd Avenue a distance of 840.0 feet to the point of beginning, said parcel of land having a frontage of 890.0 feet on said West Pine Street and a Southwest projection or extension thereof and having a frontage of 840.0 feet on said 32nd Avenue in the City of Hattiesburg, Mississippi, and containing 7.9 acres, more or less, together with all improvements thereon and appurtenances thereunto belonging.

For clarity there is attached hereto, marked EXHIBIT "A", and made a part hereof for all purposes, Survey of R. L. Morrison, C. E., dated December 17, 1957, wherein the property hereinabove particularly described is delineated to scale.

It is the intention of the Grantor to convey to the Grantee all of its real estate lying and situated in Forrest County, Mississippi.

This instrument is executed, and this conveyance made, subject to, and the warranty hereof is expressly limited by, the following:

1. All of the terms and provisions of the original Lease Contract and Agreement and the Amendatory and Corrective Lease Contract and Agreement hereinabove identified, specifically including, but without limitation, reservation of title to all oil, gas and other minerals and reservation of title to all merchantable timber as therein set forth.
2. All statutory provisions of the State of Mississippi relating to, dealing with and affecting Sixteenth Section lands within the State of Mississippi and the leasing and use thereof.
3. All grants, easements, permits or rights of way over, across or relating to the hereinabove described land, if any, appearing of record in the office of the Chancery Clerk of Forrest County, Mississippi.

This instrument is executed by reason of the following facts and for the following purposes:

The Grantor herein has heretofore existed as a wholly owned subsidiary of the Grantee herein. There has heretofore been duly and properly approved and authorized by the Stockholders of both the Grantor herein and the Grantee herein a plan

Complete Liquidation of the Grantor herein, whereby, among other things, the Grantor herein would be dissolved, and its capital stock cancelled and retired, and the Grantee herein would succeed to all of its assets and assume all of its liabilities, and, more particularly, whereby legal title to all of the real properties standing in the name of the Grantor herein would be conveyed to the Grantee herein, which, as the owner of all of the outstanding capital stock of the Grantor herein, as aforesaid, has heretofore owned and held the equitable or beneficial interest in and title to said real properties. Therefore, this instrument is executed in pursuance of said Plan of Complete Liquidation, and solely for the purpose of vesting legal title to the hereinabove described properties in the Grantee herein, in accordance with said Plan of Complete Liquidation.

WITNESS THE SIGNATURE and corporate seal of the undersigned Grantor hereunto affixed by and through its fully authorized and empowered officers on this, the 31st day of JULY, A. D., 1958.

GULF STATES CREOSOTING COMPANY,
a Delaware corporation

By H. C. Lucas
Executive Vice President

ATTEST:

R. J. Rimsch
Secretary

(CORPORATE SEAL)

STATE OF KENTUCKY

COUNTY OF JEFFERSON

Personally appeared before me, the undersigned authority in and for said County and State, H. C. LUCAS and R. J. RIMSCH, Executive Vice President and Secretary, respectively, of Gulf States Creosoting Company, a Delaware corporation, who acknowledged that they signed, sealed, executed and delivered the above and foregoing Warranty Deed on the day and year therein mentioned for and on behalf of, and as the act and deed of, said corporation, they, and each of them, being fully authorized and empowered so to do as such officers of said corporation.

Given under my hand and official seal of office on this, the 31st day of JULY, A. D., 1958.

My Commission Expires:

Sept 21, 1959

[Signature]
NOTARY PUBLIC

STATE OF KENTUCKY
County of Jefferson

No. 11

I, JAMES F. QUEENAN, Clerk of the County Court of Jefferson County in State aforesaid, same being a court of record and seal, do hereby certify that

Bertrude J. Guinness

by whom the

acknowledgment was taken and whose name is subscribed thereto, at the time of taking the same, a Notary Public of said County, duly commissioned, qualified and authorized by laws of said State to take proof or acknowledgment of deeds and other instruments in writing, and to administer oaths or affirmations in said County; and that I am well acquainted with said Notary's handwriting, and verily believe that the signature to the foregoing certificate is the genuine signature of said Notary whose commission expires Sept. 21 1951

I further certify that the impression of the seal of said Notary Public is not required by law to be filed in my said office, and that I have compared the impression of the seal of said Notary Public thereto with a copy of the seal upon the original certificate and that is genuine.



IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, which is the seal of the County Court and County, at Louisville, Kentucky,

this 3 day of Dec

James F. Queenan
Jefferson County Court, Kentucky

317



SURVEY OF
 A PART OF SECTION 16, T4N, R13W
 FOREST COUNTY, MISS.
 SCALE 1"=200'
 R. L. MORRISON CONSULTING ENGINEER
 HATTIESBURG, MISS. DEC. 17, 1957

Meeting

9/1/94

<u>Name</u>	<u>Rep</u>	<u>Phone #</u>
J. B. Van Slyke	Attorney	(601) 544-7514
Charlene Kuchoff	EPS	(601) 956-1400
Paul Galluzzi	"	"
Lyle R. Silka	EPS	(703) 631-2411
Marc Boutwell	Attorney	(601) 834-2376
Russell H. Smith	MSDE	(601) 961-5072
Ken Whitten	"	(601) 961-5306

FILE COPY

PAGE, MANNINO & PERESICH

ATTORNEYS AT LAW

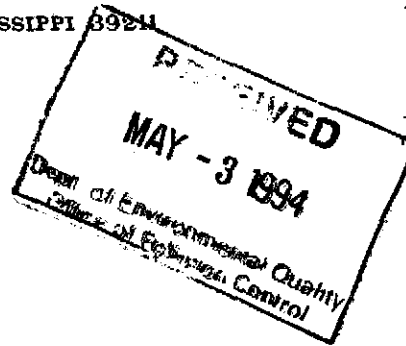
ONE LEFLEURS SQUARE
4735 OLD CANTON ROAD
JACKSON, MISSISSIPPI 39211

P. O. BOX 12159
JACKSON, MS 39236-2159
TELEPHONE (601) 364-1100
TELECOPIER (601) 364-1118

759 VIEUX MARCHÉ MALL
P. O. DRAWER 289
BILOXI, MS 39533-0289
TELEPHONE (601) 374-2100
TELECOPIER (601) 432-5539

LYLE M. PAGE*
FRED MANNINO
RONALD G. PERESICH
MICHAEL B. McDERMOTT
STEPHEN G. PERESICH
TERE RICHARDSON STEEL
DAVID S. RAINES
MICHAEL P. COLLINS
RANDOLPH C. WOOD
MARY ALEXANDER NICHOLS
GINA L. BARDWELL
MICHAEL E. WHITEHEAD
ANNETTE WILLIAMS FORSTER**
BETTY L. WARD***

*ALSO ADMITTED IN LA
**ALSO ADMITTED IN MO, D.C. & FL
***ADMITTED ONLY IN LA



May 2, 1994

Kenneth L. Whitten
Mississippi Department of Environmental Quality
P. O. Box 10385
Jackson, MS 39289-0385

RE: Gulf States Creosote - CERCLA
Hazardous Waste Division
Forrest County, Mississippi

Dear Ken:

Pursuant to my representation to you in our meeting a couple of weeks ago, this will serve to formally advise you that we have been retained to represent Union Camp Corporation with respect to your department's investigation of alleged pollution and contamination problems on Sixteenth Section property in Forrest County, Mississippi. As I indicated to you, it is Union Camp's position that it has no liability in this matter.

Please direct all future notices and correspondence from your department to Union Camp Corporation to my attention.

Thank you for your assistance. Should you have any questions, please feel free to contact me.

Sincerely,

Randolph C. Wood

RCW/kgb

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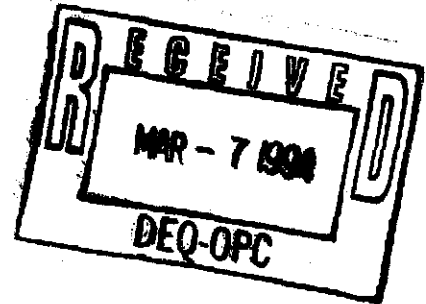


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

MAR 03 1994



4WD-ERRB

Mr. Russell Smith, Chief
Uncontrolled Sites Unit
Mississippi Department of
Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

SUBJ: Gulf States Creosote, Hattiesburg, Mississippi

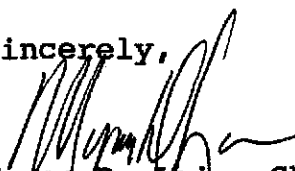
Dear Mr. Smith:

The U.S. Environmental Protection Agency's (EPA) Emergency Response and Removal Branch (ERRB) reviewed the available information for the above referenced site to determine its eligibility for a potential removal action under the National Contingency Plan (NCP). The site information was evaluated using criteria from Section 300.415 of the NCP and current ERRB program guidance.

An extensive site investigation was conducted at the above referenced site in 1989 and 1990. High concentrations of PAHs were found in subsurface soils, but there was a low probability of direct human contact with the contaminated soil. ATSDR reviewed this data but did not feel that there was a substantial threat to public health. Due to recent research regarding the potential toxicity of PAHs, ERRB re-evaluated the site. Based upon ERRB's review, the site meets the criteria for a low priority removal action. Unfortunately, ERRB's limited personnel resources and budget constraints prevent any removal actions in the near future. This determination does not preclude any other investigation activities or response actions by other parties which may still be appropriate for this site. It is ERRB's understanding that the Mississippi DEQ recently requested the file information and plans to pursue the PRP to remediate the site. Should site conditions change or additional information become available, ERRB will re-evaluate this site as necessary.

Should you have any questions concerning ERRB's determination, please contact Mr. Don Rigger, OSC, at (404) 347-3931, extension 6140, or Mr. Shane Hitchcock, Chief of Removal Operations Section, extension 6122.

Sincerely,



Myron D. Lair, Chief
Emergency Response and Removal
Branch

cc: Narindar Kumar, Site Assessment Section, EPA

BOUTWELL & SANDERS

MARC BOUTWELL
EDWARD SANDERS

Attorneys-at-Law
P.O. Box 956
Lexington, Mississippi 39095
Phone (601) 834-9029
Fax (601) 834-3117

March 10, 1997


Russell H. Smith
Mississippi Department of Environmental Quality

Re: Hattiesburg School District v. Kerr McGee Chemical Co.

Dear Mr. Smith:

Don Barrett and I would like to review the documents and correspondence for Kerr McGee's work plant and any other correspondence from September, 1996, to present. Could you make those available for us today since we are going to be in Jackson?

Sincerely,



Marc Boutwell



FILE COPY

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

MEMORANDUM

TO: Gulf States Creosote File

FROM: Russell H. Smith *RHS*

DATE: May 29, 1997

SUBJECT: Hearing with Judge Pickering on May 28, 1997

The Mississippi Department of Environmental Quality was requested to attend the above referenced hearing with the parties in the federal lawsuit on the referenced site. MDEQ was represented by Chuck Barlow, Gary Rikard, Chris Wells, and Russell Smith.

MDEQ committed to several things during that hearing and those commitments are summarized below.

1. MDEQ will not issue comments on the Remedial Investigation to be submitted by Kerr McGee in late June of 1997 before we have received and considered any comments that the plaintiffs provide to MDEQ regarding the investigation.
2. MDEQ agreed to review, prepare and submit our finding from the Remedial Investigation within 60 (sixty) days of our receipt of the document.
3. MDEQ was requested by Judge Pickering to attend all future hearings on this matter and we agreed to comply with this request.

MDEQ stated that our split analysis of samples from the site would be part of the public record and subject to the Open Records Act.

The Judge required the defendants provide the court with a copy of the Remedial Investigation Report. He also required that the defendants provide all the Remedial Investigation information as requested by the plaintiffs.

Gulf States Creosote 5-28-97 Hearing Memo .wpt

ADAMS AND REESE

*Registered Limited Liability Partnership
Attorneys and Counselors at Law*

4500 ONE SHELL SQUARE
NEW ORLEANS, LOUISIANA 70139

Telephone: (504) 581-3234
Facsimile: (504) 566-0210
Internet: info@arlsw.com

June 30, 1997

GLEN M. PILLÉ
(504) 585-0260
gpillgm@arlsw.com

RECEIVED
JUL - 3 1997
Dept. of Environmental Quality
Office of Pollution Control

NEW ORLEANS
BATON ROUGE
MOBILE
HOUSTON
WASHINGTON, D.C.

FILE COPY

Honorable Charles W. Pickering, Sr
United States District Judge
United States District Court
Hattiesburg Division
Colmer Federal Building
701 North Main Street, Suite 228
Hattiesburg, MS 39401

FEDERAL EXPRESS

*Re: Consolidated Proceedings
RSCO Realty Corporation, et al. v.
Kerr-McGee Chemical Corporation et al.
Hattiesburg Division - No. 2:96-CV-323PG
Our File 298-240*

Dear Judge Pickering:

Enclosed please find the text portion of the Remedial Investigation Report for the former Gulf States Creosoting Company Site in Hattiesburg, Mississippi. In accordance with your Order dated June 11, 1997, Kerr-McGee is submitting this RI Report to the MDEQ on June 30, 1997. Upon instructions from Paul Walters, I am forwarding only the text portion of the report to you which does not include voluminous appendices containing technical data. If you decide you want a copy of all the appendices (approximately six inches thick), please let me know and I will forward that material to you.

Very truly yours,

ADAMS AND REESE



Glen M. Pillé
Attorney for:
Kerr-McGee Chemical Corporation

GMP/js

cc: All Counsel of Record (w/o encl.)
Mr. Russell Smith, MDEQ (w/o encl.)

Enclosure

ADAMS AND REESE

*Registered Limited Liability Partnership
Attorneys and Counselors at Law*

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WASHINGTON, D.C.

GLEN M. PILIÈ
(504) 585-0260
gpiligm@arlaw.com

June 30, 1997

FILE COPY

Honorable Louis Guirola
United States Magistrate Judge
United States District Court
Hattiesburg Division
Colmer Federal Building
701 N. Main Street, Suite 200
Hattiesburg, MS 39401

FEDERAL EXPRESS


*Re: Consolidated Proceedings
RSCO Realty Corporation, et al. v.
Kerr-McGee Chemical Corporation et al.
Hattiesburg Division - No. 2:96-CV-323PG
Our File 298-240*

Dear Magistrate Judge Guirola:

Enclosed please find the text portion of the Remedial Investigation Report for the former Gulf States Creosoting Company Site in Hattiesburg, Mississippi. In accordance with your Order dated June 11, 1997, Kerr-McGee is submitting this RI Report to the MDEQ on June 30, 1997. Upon instructions from Paul Walters, I am forwarding only the text portion of the report to you which does not include voluminous appendices containing technical data. If you decide you want a copy of all the appendices (approximately six inches thick), please let me know and I will forward that material to you.

Very truly yours,

ADAMS AND REESE


Glen M. Piliè
Attorney for:
Kerr-McGee Chemical Corporation

GMP/js
cc: All Counsel of Record (w/o encl.)
Mr. Russell Smith, MDEQ (w/o encl.)
Enclosure

ADAMS AND REESE

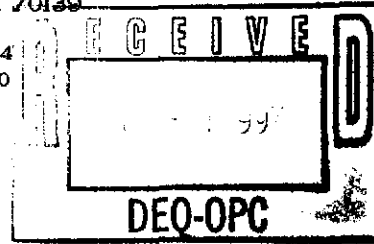
Registered Limited Liability Partnership
Attorneys and Counselors at Law

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June 30, 1997



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HOUSTON
WASHINGTON, D.C.

GLEN M. PILIÉ
(504) 585-0260
piliem@arlaw.com

Mr. Russell Smith
Uncontrolled Sites Section Supervisor
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289

FEDERAL EXPRESS

Re: Gulf States Creosotes Site - Agreed Order No. 338197
Remedial Investigation Report
Our File: 298-240

Dear Mr. Smith:

Pursuant to Agreed Order No. 338197, Kerr-McGee hereby submits to the Mississippi Department of Environmental Quality Uncontrolled Sites Division, two copies of a Remedial Investigation Report for the Site. If upon review of the RI Report you have any questions or require further explanation of anything contained in the Report, please do not hesitate to contact me.

Very truly yours,

ADAMS AND REESE

BY:

A handwritten signature in cursive script, appearing to read "Glen M. Pilié".

GLEN M. PILIÉ

Attorney for:

Kerr-McGee Chemical Corporation

GMP/js
Enclosure

FILE COPY

LAWRENCE C. GUNN, JR.

ATTORNEY AT LAW

804 WEST PINE STREET
POST OFFICE BOX 1588
HATTIESBURG, MISSISSIPPI 39403-1588

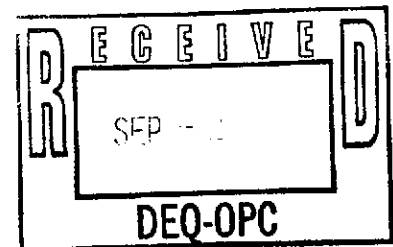
LAWRENCE C. GUNN, JR.
L. CLARK HICKS, JR.

TELEPHONE
(601) 544-6770

TELECOPIER

August 29, 1997

Mr. James I. Palmer, Jr.
Executive Director
Department of Environmental Quality
P.O. Box 20305
Jackson, MS 39289-1305



Re: Industrial Park -

Dear Mr. Palmer:

By order of June 11, 1997, Honorable Charles Pickering, U.S. District Judge, ordered Kerr-McGee Corporation to report to the Mississippi Department of Environmental Quality concerning Kerr-McGee's remedial investigation of the former Gulf States Creosoting plant in Hattiesburg. According to Judge Pickering's order, interested parties were given the opportunity to respond or comment on the Kerr-McGee report, and the purpose of this letter is to provide the response of Industrial Park, Inc. to the report which has been furnished to your department.

At the outset, allow me to observe that Kerr-McGee is involved in litigation with my client, Industrial Park, as well as the City of Hattiesburg, Forrest County School Board, several other private landowners, and Union Camp Corporation over the site in question. Kerr-McGee's report has to be read and interpreted in light of its obvious purpose to avoid legal liability in the pending suit in Judge Pickering's court.

Industrial Park, Inc. applauds the efforts of Kerr-McGee to attempt to address the creosote pollution problem here in Hattiesburg. However, we feel the report is inaccurate in many particulars, especially those areas of the report that attempt to shift responsibility for the initial pollution to parties other than Kerr-McGee's predecessor, Gulf States Creosoting.

The 22 separately numbered paragraphs of the conclusions of the report contained at pages 91 through 93 contain numerous false or misleading statements. We address several of those conclusions on behalf of Industrial Park as follows:

Conclusion No. 1: The former Gulf States Creosoting site property is currently bounded by Scooba Street on the Northeast, Gordon's Creek and Corinne Street on the West and Northwest, U.S. Highway 49 on the Southwest, and the Southern Railroad on the Southeast. The approximate area of the entire property is 80 acres.

Kerr-McGee does not properly describe the property that was the former Gulf States Creosoting site. In fact, Gordon's Creek runs through the property, and a large portion, I estimate approximately 18 acres, is North of Gordon's Creek.

Conclusion No. 2: The Gulf States Creosoting facility operated between the early 1900s and approximately 1960. Operations at the facility were of a relatively small scale, consisting of the use of creosote only in a single pressure cylinder.

The aerial photographs from the 1940s and 1950s show that the facility operated over the entire site South of Gordon's Creek. There is no evidence to support the conclusion that Gulf States' operations were "of a relatively small scale."

Conclusion No. 3: Creosoting and the associated storage and handling of chemicals were confined to an approximately 2.5 acre Process Area at the Northeastern corner of the site. This area, which is now occupied by the Courtesy Ford Motors, is currently bounded by Scooba Street, Timothy Lane, the Southern Railroad ditch, and an imaginary line connecting the Northwestern side of the Ryan Auto Parts building and the Southeastern side of the main Courtesy Ford building. During the operation of the wood treating facility, the area to the Southwest of the Process Area was utilized for the storage of treated and untreated wood.

It is erroneous to state that storage and handling of chemicals was confined to the 2.5 acre area denominated as the "Process Area." In fact, Kerr-McGee's own testing plainly shows the presence of creosote in the area it denominates the "Fill Area," and aerial photographs show structures along the Southern bank of Gordon's Creek, roughly in the area behind the present Ryan-Mitsubishi building, and it is assumed that these structures were associated with the creosoting operation.

Conclusion No. 5: Subsequent to closure of the facility and in conjunction with the redevelopment of the site, grading, and filling with demolition debris and other waste materials occurred at the Southwestern site boundary near Gordon's Creek. Gordon's Creek was also rechannelized (i.e., moved to 200 to 300 feet to the Northwest) to allow for the development of land along

the extension of West Pine Street.

This statement is misleading, if not absolutely false.

Figure 3.1, Page 27 of Kerr-McGee's report, is a report of elevations computed from aerial photography in 1996. We have carefully examined the elevations reflected in the area Kerr-McGee calls the "Fill Area," and we find that those elevations range from 185.4 feet above sea level to 190.9 feet. However, the 190.9 elevation should be disregarded. This one elevation measurement is apparently located in an area where someone in recent years has dumped a load of dirt from a dump truck. The load was never spread out, but has simply remained in place. It has trees and bushes growing in it. The 190.9 elevation is limited to a very small confined area. When this one elevation reading is disregarded, we find that the reported elevations in the area known as the "Fill Area" range from 185.4 to 188.2.

These are the same elevations that existed prior to Industrial Park's taking possession of the property.

On September 16, 1960, several months before Industrial Park took possession of the site, R. L. Morrison, a civil engineer, prepared a topographical survey showing elevations on the entire Gulf States Creosoting site. The elevations reported by Mr. Morrison in his topographical survey range from 185.4 to 188.4 feet above sea level in the area Kerr-McGee refers to as the "Fill Area." These elevations are essentially the same as those reflected on Kerr-McGee's figure 3.1.

Comparison of the elevations from the 1960 Morrison Topographical Survey and the 1996 Kerr-McGee report (figure 3.1) leads to the inescapable conclusion that if there is any creosote impacted soil buried in the fill area, it was buried prior to the Morrison survey, prior to Industrial Park's taking possession of the property, and prior to Industrial Park's purchasers acquiring their properties.

The channelization of Gordon's Creek began in the mid-1960s and continued over a period of several years. This rechannelization involved the digging of a new channel North of the original channel. The old channel was filled in by the dirt removed from the digging of the new channel. No additional fill was brought to the site. Thus, any dirt that was used to fill the old channel of Gordon's Creek was dirt that should have been free of any creosote-containing soil, since there was never any active creosoting operation, so far as we know, located on the North side of Gordon's Creek.

Conclusion No. 6: The former site property is currently occupied by several automobile dealerships, auto parts stores, a beverage dealership, a convenience store, and other commercial operations. The Process Area and wood storage areas have been regraded, covered with asphalt, and are no longer evident. The Fill Area remains undeveloped.

The area Kerr-McGee refers to as the "Fill Area" was at one time used for wood storage according to early aerial photographs. Part of this area is where Gulf States Creosoting apparently

buried creosote before the property was sold to Industrial Park.

Conclusion No. 7: Dating back to at least 1957, the Process Area and Fill Area have been located within two distinct drainage basins separated by a topographic and drainage divide. The Northeastern portion of the site, including the Process Area, is drained to the East by a system of ditches and culverts. The remainder of the site, including the Fill Area, is drained to the West by Gordon's Creek and its tributary ditches.

The geological and topographic discussions in the report do not lead to the conclusion that there are two distinct drainage basins separated by a topographic and drainage divide. In fact, the elevation along the Southern Railroad right of way is essentially the same from the East end of the property to the area where drainage turns Northward into Gordon's Creek. It is believed that there could easily have been surface runoff over the years from the area known as the "Process Area" Westward along the railroad right of way drainage ditch or borrow pit. In fact, the topographical maps clearly show a major surface drainage ditch existing on the Southern Railroad right of way that drains rain water runoff and other surface water runoff from the process area in a Westerly direction to a low point on what is now Industrial Park property. This runoff naturally flowed to Gordon's Creek across the site property. The path of this surface flow across the site property undoubtedly varied significantly over the years. Extensive plant operations were conducted from 1900 through 1960 in this area, and the path of water flow would have been determined by plant operations, i.e., roadbeds, driveways, railroad spur abutments, drainage ditches, etc. There is very little evidence that the site has the two distinct drainage areas described in Kerr-McGee's report.

Conclusion No. 15: Creosote-impacted soils within the Fill Area are present within and adjacent to areas where filling occurred in conjunction with the redevelopment of the property beginning in approximately 1962. The surface area underlain by creosote-impacted soils is approximately 2.1 acres in the Fill Area.

The truth is that no filling occurred in the area Kerr-McGee calls the "Fill Area" beginning in 1962. Figure 3.1, Page 27 of Kerr-McGee's report, shows elevations of 185.4 to 188.2 feet above sea level, essentially the same elevations shown on a topographical survey and contour map drawn by R.L. Morrison, engineer, in 1960, while Gulf States Creosoting was still in possession of the property. See Response to No. 5 above.

The creosote impacted soils within the fill area are a result of creosote buried by Kerr-McGee's predecessor prior to sale and transfer of the land to Industrial Park.

See Response to Nos. 5 and 15 above. The available evidence shows that any creosote impacted soils and other waste materials were buried in the "Fill Area" by Kerr-McGee's predecessor prior to the Morrison survey of September 16, 1960, because the topography of the "Fill Area" has remained essentially unchanged since that date, which preexisted Industrial Park's taking possession of the property.

Furthermore, there is a clear pathway which we believe would allow drainage of water from what was formerly the "Process Area" Westerly along the Southern Railroad right of way and through the borrow pit to the Western end of the property. See Response to No. 7 above.

Conclusion No. 21: RI results indicate the lack of a transport mechanism, either currently or historically, for the migration of creosote or other constituents from the Process Area to the Fill Area.

The truth is that there is a transport mechanism, the drainage ditch alongside the Southern Railroad property. See response to No. 7 above.

The extent of the creosote pollution problem and what must be done to correct it, if anything, is unknown at this point. However, we are glad to take this opportunity to refute the suggestions in Kerr-McGee's report that anyone other than its predecessor, Gulf States Creosoting, had anything at all to do with the placement of creosote on the site.

Yours very truly,



Lawrence C. Gunn, Jr.

LCGjr/jm/2032

cc: Honorable Charles W. Pickering
Mr. Chuck Barlow
Mr. Alex Alston
Mr. J. B. VanSlyke
Mr. Marc Boutwell
Mr. Robert Hammond
Mr. Jeffrey Hollimon
Mr. J. Henry Ros
Mr. Walter Dukes
Mr. Jon Mark Weathers

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RECEIVED
SEP 11 1997
Dept. of Environmental Quality
Office of Pollution Control

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September 10, 1997

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FILE COPY

Mr. Chuck D. Barlow, L.L.M.
Chief, Legal Division
Mississippi Department of Environmental Quality
P. O. Box 20305
Jackson, MS 39289-1305

RE: RSCO Realty Corporation, et al v. Kerr-McGee Chemical Corporation, et al
U.S. District Court No. 2:96-CV-323PG
(Hattiesburg creosote site)

Dear Mr. Barlow:

We attach herewith the plaintiffs' response and comments to Kerr-McGee's Remedial Investigation Report prepared by Pisani & Associates.

Because Kerr-McGee's report is preliminary and interim in nature, and contains no final recommendations concerning clean-up, we will refrain from such recommendations ourselves at this time.

As is made clear by Mr. Mike Bonner's attached critique, however, the testing regimen employed by Kerr-McGee is woefully inadequate and seems designed to minimize Kerr-McGee's future clean-up costs, rather than to accurately characterize the extent and level of the contamination of the Sixteenth Section land.

This is land held in perpetual trust for the benefit of public education in Forrest County. We urge the DEQ to require Kerr-McGee to stop playing games and to commence a real testing program – one that will determine the true geographic limits of the contamination, and accurately characterize the extent of the contamination within those boundaries.

Mr. Chuck D. Barlow, L.L.M.
September 10, 1997
Page 2

Sincerely yours,



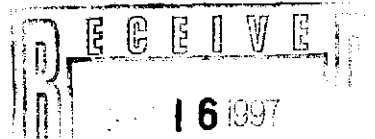
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DB:wm
Enclosure

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FILE COPY

Chuck D. Barlow, LL.M.
Chief, Legal Division
Mississippi Department of Environmental Quality
P. O. Box 20305
Jackson, MS 39289-1305

RE: RSCO Realty Corporation, et al. v. Kerr-McGee Chemical Corporation, et al.
U.S. District Court No. 2:96-CV-323PG

O.M.T. Properties, Inc. v. Kerr-McGee Chemical Corporation, et al.
U.S. District Court No. 2:96-CV-356PG

Gary Martin, et al. v. Kerr-McGee Chemical Corporation, et al.
U.S. District Court No. 2:96-CV-357PG

Steadman Properties, Inc. v. Kerr-McGee Chemical Corporation, et al.
U.S. District Court No. 2:96-CV-394PG

Dear Chuck:

Although we discussed the attached order with you, I see that I neglected to send you a copy which was signed by the court. Here it is, for your records.

I also enclose a copy of my letter to Judge Pickering, which generally discusses where we go from here.

Best personal regards.

Sincerely yours,

A handwritten signature in cursive script that reads "Don".

Don Barrett

DB:wm
Enclosures

The Honorable Charles W. Pickering, Sr.
September 11, 1997
Page 2

Unless the Court wishes otherwise, I will communicate with the Court as soon as we have heard from the DEQ, and assist in setting up a status conference. I assume that this will be in December.

Sincerely yours,



Don Barrett

✓ DB:wm

cc: Interested Counsel

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The Honorable Charles W. Pickering, Sr.
U. S. District Judge
701 North Main Street, Suite 228
Hattiesburg, MS 39403

RE: RSCO Realty Corporation, et al. v. Kerr-McGee Chemical Corporation, et al.
U.S. District Court No. 2:96-CV-323PG

O.M.T. Properties, Inc. v. Kerr-McGee Chemical Corporation, et al.
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U.S. District Court No. 2:96-CV-357PG

Steadman Properties, Inc. v. Kerr-McGee Chemical Corporation, et al.
U.S. District Court No. 2:96-CV-394PG

Dear Judge Pickering:

At the status conference furthering these cases on May 28, you directed me as liaison counsel to schedule a follow-up status conference in September. At that time we expected that the DEQ would have had time to respond to the Kerr-McGee Remedial Investigation Report.

That report, as well as our side's comments concerning it, has been filed with the DEQ, and the DEQ is considering the matter now.

According to the amended scheduling order, and to which DEQ has consented although it is not a party in this litigation, DEQ should act on Kerr-McGee's Report and our comments within sixty days of September 1.

It is our belief that a status conference would be useful shortly after the DEQ acts in this matter, but not before. It is my understanding that counsel opposite agrees that it would be premature to have another status conference at this time.

BRYANT, CLARK, DUKES, BLAKESLEE, RAMSAY & HAMMOND, P.L.L.C.

*R. J. ...
2/20/97*

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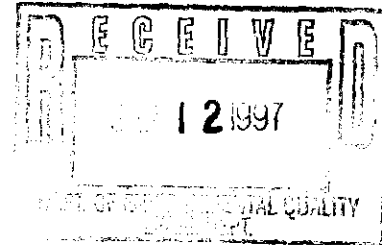
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RAE BRYANT (1994)

September 10, 1997



Chuck D. Barlow, LL.M.
Chief, Legal Division
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FILE COPY

Re: RSCO Realty Corp., et al. v. Kerr-McGee Chemical Corp., et al.
U.S. District Court, Civil Action No. 2:96CV323PG
(Hattiesburg Creosote Site)

Dear Mr. Barlow:

We attach herewith the Plaintiffs' response and comments to Kerr-McGee's Remedial Investigation Report prepared by Pisani & Associates.

Because Kerr-McGee's report is preliminary and interim in nature, and contains no final recommendations concerning clean-up, we will refrain from such recommendations ourselves at this time.

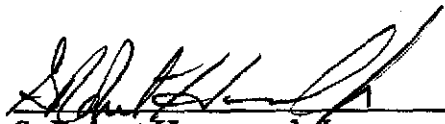
As is made clear by Mike Bonner's attached critique, however, the testing regimen employed by Kerr-McGee is woefully inadequate and seems designed to minimize Kerr-McGee's future clean-up costs, rather than to accurately characterize the extent and level of the contamination of the Sixteenth Section land.

This is land held in perpetual trust for the benefit of public education in Forrest County. We urge the DEQ to require Kerr-McGee to stop playing games and to commence a real testing program - one that will determine the true geographic limits of

Chuck D. Barlow, LL.M.
September 10, 1997
Page 2

the contamination, and accurately characterizes the extent of the contamination within those boundaries.

Sincerely yours,



S. Robert Hammond, Jr.
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Hattiesburg, MS 39404-6567

Don Barrett
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SRHjr/jps
Enclosure

cc: Honorable Charles W. Pickering, Sr.
Chet Tisdale, Esquire
Glen Pilie, Esquire

COMMENTS REGARDING

Michael Pisani & Associates, Inc.

**Remedial Investigation Report
of
Former Gulf States Creosoting Site
Hattiesburg, MS**

June 30, 1997

Project No. 21-02

by



Michael S. Bonner, Ph.D.

**BONNER ANALYTICAL TESTING COMPANY
2703 Oak Grove Road
Hattiesburg, MS 39402**

INTRODUCTION

The former Gulf States Creosoting is located on 79 acres of sixteenth section school board property near the intersections of Highway 11 and 49 in Hattiesburg, MS. The property was leased between 1900 and 1960 and utilized as a creosote manufacturing facility. The property is bounded by Scooba Street on the northeast, Gordon's Creek and Corinne Street on the west and northwest, US Highway 49 on the southwest and the Southern Railroad on the southeast.

The site was purchased by Industrial Park Partners (IPC) and developed for light commercial use during the early 1960's. Between 1990-1997, the site was subjected to numerous "limited scope" investigations including a recent Remedial Investigation (RI) conducted by Mike Pisani and Associates on behalf of Kerr Magee Corp. The preponderance of this RI has focused on two previously identified contaminated areas—the processing area (Courtesy Ford) and the Gordon's Creek/IPC-Ryan area. To date a comprehensive investigation of the site has not been performed.

PURPOSE OF REPORT

Mike Pisani and Associates produced a Remedial Investigation report on their findings at the former Gulf States Creosoting facility dated June 30, 1997. Some of the findings published in the Pisani report warrant comment or qualification. This document will address those findings.

I. EXECUTIVE SUMMARY OVERVIEW

a. Pisani states that creosote exists in two distinct areas, the process area and an obvious fill area near Gordon's Creek. Further, the report suggests contamination is limited to these two areas. It is obvious that the Gordon's Creek area and the process area (Courtesy Ford) are heavily contaminated. However, neither of these areas nor the remaining 75± acres have been adequately assessed.

In light of the lack of information on activities between 1900-1936 it is not prudent to assume that the remainder of the 79 acre site is free of creosote contamination. Further, surface contamination on the order of 0.5' to 3.0' is anticipated throughout the treated material storage areas. Treated material storage areas are, at least partially, defined between the years 1937-1960 by aerial photographs, but not so between 1900-1937.

Surface soil samples collected on Ryan property during the Pisani RI were found to contain elevated creosote levels. The horizontal and vertical extent of contamination is not known. Based on aerial photos of the site, Ryan property was believed to have been used only for untreated wood storage. Obviously, creosote related activities have been conducted in this area. At least one early aerial photo shows a tank located outside the process area on or near Ryan property. This tank may have contained creosote, boiler fuel, or some other substance. No investigation has been conducted in this area to date. Findings by Pisani during this investigation indicates an additional surface water migration pathway. Pisani suggests that surface water

runoff from the process area is in a southeast direction. Assuming this pathway valid, further investigation southeast of the process area is warranted. The old Gordon's Creek stream bed was obviously filled in the early 1960's. However, the most significant levels of creosote located in this area to date are on Ryan property and do not appear to be connected to the old filled stream bed.

b. The Pisani report suggests that there is not a surface pathway between the process area and the Gordon's Creek area. However, there is surface drainage that runs parallel to the process area along the railroad and traverses the property at the Ryan/IPC property line as evidenced by aerial photos and an early topographic survey: This ditch appears to be an acceptable migration pathway to the Ryan/IPC property and Gordon's Creek. Given the general meandering characteristics of stream beds and drainage ditches, and the 60 years of manufacturing that occurred on the site, it doesn't seem prudent to exclude this pathway.

c. Pisani indicates that subsurface barriers separate the process area and the Gordon's Creek area. While the available data may indicate such a barrier, it is important to note that this entire site is characterized as Urban soils, and as such are not easily characterized.

d. The RIR states that historical aerial photos reveal that the Gordon's Creek "fill area" was created after the site was closed. Actually, the old Gordon's Creek bed was filled during the early 1960's. However, the creosote transport mechanism and pathway (the ditch) appears to have been in place for as long as records exist. The meandering characteristics of stream beds

and ditches suggest a mechanism to spread creosote. While other transport mechanisms are possible the ditch remains viable.

e. The RIR states there is no surface exposure to creosote in the process area due to concrete and asphalt surfacing. Cracks or breaks in the concrete may result in future exposures. Importantly, surface exposures due to contamination on Ryan property and possibly other areas, along with leaching into Gordon's Creek may pose significant risks.

f. The author states that contamination is isolated from potable water. However, there are three known shallow wells which have not been evaluated. Area residents utilize shallow wells for a variety of domestic uses.

g. The RIR states that ROST technology was demonstrated to be an accurate, quick and cost effective method for identifying creosote contamination. The ROST-LIF appears to be an acceptable "screening tool" when profiling heavily contaminated areas of creosote. However, the author did not demonstrate the utility of the tool in assessing significant low level contamination of creosote. In fact, the data suggests that in its present configuration the ROST is not capable of detecting significant low level creosote contamination.

II. DATA QUALITY REVIEW

A third party audit of analytical data quality was performed in conjunction with this remedial investigation. As a result, a substantial amount of the data was deemed not acceptable for quantitation and was "J" flagged to be used only as an estimate of the actual concentration.

III. REMEDIAL INVESTIGATION CONCLUSIONS

The author has drawn twenty two conclusions as a result of this RI. Those conclusions and comments, where appropriated, are listed below.

1. The former Gulf States Creosoting site property is currently bounded by Scooba Street on the northeast, Gordon's Creek and Corinne Street on the west and northwest, U.S. Highway 49 on the southwest, and the Southern Railroad on the southeast. The approximate area of the entire property is 80 acres.

No Comment

2. The Gulf States Creosoting facility operated between the early 1900s and approximately 1960. Operations at the facility were of a relatively small scale, consisting of the use of creosote only in a single pressure cylinder.

Aerial Photographs dating back to 1937 depict a full scale creosoting facility covering substantially all of the 79 acre lease. There is little historical information on the manufacturing operations between 1900-1937.

3. Creosoting and the associated storage and handling of chemicals were confined to an approximately 2.5 acre Process Area at the northeastern corner of the site. This area, which is now occupied by Courtesy Ford Motors, is currently bounded by Scooba Street, Timothy Lane, the Southern Railroad ditch, and an imaginary line connecting the northwestern side of the Ryan Auto Parts building and the southeastern side of the main Courtesy Ford building. During the operation of the wood treating facility, the area to the southwest of the Process Area was utilized for the storage of treated and untreated wood.

The author assumes manufacturing, processing, treatment, and storage was unchanged between 1900-1937. This may not be a valid assumption.

4. The site was redeveloped for commercial and light industrial use beginning in approximately 1962. There are no residential or institutional (e.g., schools) uses of the site.

There is substantial residential development south of the site. The property is 16th section land and is owned by the school.

5. Subsequent to closure of the facility and in conjunction with the redevelopment of the site, grading and filling with demolition debris and other waste materials occurred at the southwestern site boundary near Gordon's Creek. Gordon's Creek was also rechannelized (i.e., moved 200 to 300 feet to the northwest) to allow for the development of land along the

extension of West Pine Street.

OK

6. The former site property is currently occupied by several automobile dealerships, auto parts stores, a beverage dealership, a convenience store, and other commercial operations. The Process Area and wood storage areas have been regraded, covered with asphalt, and are no longer evident. The Fill Area remains undeveloped.

Grading may have occurred in some selected areas. However, one can not assume that a site is clean simply because it may have been graded. Only portions of the site are covered by asphalt. The Ryan property remains largely undeveloped as does some IPC property

7. Dating back to at least 1957, the Process Area and Fill Area have been located within two distinct drainage basins separated by a topographic and drainage divide. The northeastern portion of the site, including the Process Area, is drained to the east by a system of ditches and culverts. The remainder of the site, including the Fill Area, is drained to the west by Gordon's Creek and its tributary ditches.

A portion of the process area obviously drains to the east. The author has not confirmed that the entire process area drains to the east and at precisely which point flow direction changes to the west along the railroad drainage. It is likely that a portion of the process area also

drains to the west. Certainly the treated wood storage area drained to the west thence into Gordon's Creek at the IPC/Ryan property line. Additionally, drainage may have been altered over time.

8. The geology of the Process Area and Fill Area are significantly different, with the exception of an underlying clay aquitard common to both areas. The clay aquitard underlies the uppermost water-bearing units in both areas and represents to top of a massive (120 to 200 feet thick) regional clay of the upper Hattiesburg formation.

The entire site has been classified as Urban Soil.

9. The Process Area geology and hydrogeology are characterized by three major units: an upper silty clay, 20 to 25 feet thick; a fine- to medium-grained sand channel with a maximum thickness of 20 feet (the upper water-bearing unit); and the underlying clay aquitard. The Process Area sand channel does not extend westward to the Fill Area.

The site is characterized Urban soil and as such, may prove difficult to accurately characterize.

10. The Fill Area geology and hydrogeology are characterized by 20 to 25 feet of interbedded sands and clays (the sandy zones comprising the upper water-bearing unit) and the underlying

clay aquitard. The discontinuous sandy zones near Gordon's Creek do not extend northeastward to the Process Area.

The site is characterized Urban soil and as such, may prove difficult to accurately characterize.

11. Ground water flow within the Process Area sand channel is to the east at a gradient of approximately 0.01 feet per foot (in the opposite direction as portrayed by others in previous reports). Estimates of the sand channel's hydraulic conductivity range from 3.8×10^{-4} cm/sec to 2.1×10^{-3} cm/sec. The estimated ground water flow velocity within the sand channel ranges from 0.04 to 0.2 feet per day. The direction of ground water flow within the discontinuous Fill Area sands is unknown, but is anticipated to be toward or downstream along Gordon's Creek.

No Comment

12. A search of water well data bases identified the presence of up to three wells screened at depths of less than 300 feet (i.e., above the massive regional clay) within one mile of the site. The current status and use of these wells are unknown.

Shallow wells are the most likely to have been impacted and, therefore, warrant evaluation.

13. The ROST system was demonstrated to be an effective screening tool for the delineation of the vertical and lateral extent of creosote-impacted soils within the Process Area and Fill Area. ROST results correlated with laboratory analytical data to allow for the determination of the presence/absence and relative concentrations of creosote.

ROST has not been demonstrated to effectively characterize significant, but low level creosote contamination and, as a result, the horizontal and vertical boundaries may not be accurately defined. Additionally, the eastern boundary may have been significantly impacted by the drainage pathway and, therefore, warrants further study.

14. Creosote-impacted soils within the Process Area are confined to areas beneath or immediately adjacent to former wood treating operational features. The surface area underlain by creosote-impacted soils is approximately 3.4 acres in the Process Area.

The author relies extensively on ROST data which has not been demonstrated to effectively assess low level, but significant concentrations of creosote.

15. Creosote-impacted soils within the Fill Area are present within and adjacent to areas where filling occurred in conjunction with the redevelopment of the property beginning in approximately 1962. The surface area underlain by creosote-impacted soils is approximately 2.1 acres in the Fill Area.

This area has not been adequately assessed.

16. Ground water in the uppermost water-bearing zone beneath the Process Area has been impacted by former wood treating operations. Affected ground water does not extend west of the Process Area; the extent of affected ground water to the north and east of the Process Area has not been defined.

Requires further study

17. ROST pushes through the uppermost water-bearing zone in the Process Area do not indicate the presence of a free-phase creosote plume at the base of the zone.

There is however evidence of downward migration in numerous ROST Logs. ROST 44 (Figure 1) indicates a strong creosote fingerprint and a high signal between 7' and 11' however, the fingerprint changes abruptly between 11' and 15' while the signal remains high.

This implies that either some other contaminant was detected in the 11' to 15' zone or possibly selective migration of some components in the "creosote mix" has occurred. A similar scenario is noted in RST03, RST21, RST23 RST32, RST41, etc. (Figures 2-6)

18. Affected ground water in the Process Area is vertically confined by the underlying massive clay of the Hattiesburg formation. This clay layer affords protection to the drinking water

resources of the Hattiesburg area. ROST pushes into this clay indicate the absence of any creosote migration into this layer.

This should be confirmed via double cased well installations into the second aquifer. The author has not presented evidence to demonstrate that the clay aquitard is continuous.

19. Ground water quality beneath the Fill Area has not been characterized, although ROST pushes through the uppermost water-bearing zone indicate the presence of some creosote-impacted sand.

No Comment

20. Extremely low concentrations of wood treating constituents are present within near-surface soils (i.e., the upper 12 inches) in unpaved and uncovered areas of the site.

Significant levels of creosote constituents have been detected in surface samples.

Additionally, no horizontal or vertical boundaries have been established.

21. RI results indicate the lack of a transport mechanism, either currently or historically, for the migration of creosote or other constituents from the Process Area to the Fill Area. Available site information indicates that the presence of creosote-impacted soils within the Fill Area is

not a result of creosote wood treating operations, but resulted from the placement of creosote-impacted soils and other waste material in the Fill Area during the early 1960s.

The RI has not thoroughly evaluated the transport mechanism and, it is therefore, premature to suggest that creosote placement is the only possible transport mechanism.

22. The results of the RI indicate that affected subsurface media are confined to two separate and distinct areas: the Process Area and the Fill Area. The two areas can be considered independently during the development of possible response scenarios.

To date two elevated creosote areas have been detected. The extent of creosote contamination at the site remains undefined.

IV. ROST-LIF DATA QUALITY OBSERVATIONS

The ROST-LIF system has been described as an accurate, quick, cost-effective method for identifying creosote impacted soils. The author has not demonstrated the accuracy of the tool nor has he demonstrated precision or the lower limit of detection for the instrument. By way of example, Figure 7 is a graph of actual PAH concentrations reported vs. ROST response for four ROST logs having similar fluorescence fingerprints. There is no apparent linear relationship between ROST response and actual PAH concentrations found.

Current MDEQ clean up criteria for PAH contaminated soil with potential to impact ground water are as follows

Polynuclear Aromatic Hydrocarbons:

Clean up Level:

Acenaphthene	200 ppm
Anthracene	4,300 ppm
Benz[a]anthracene	70 ppm
Benzo[b]fluoranthene	4 ppm
Benzo[k]fluoranthene	4 ppm
Benzo[a]pyrene	4 ppm
Carbazole	50 ppm
Chrysene	1 ppm
Dibenz[ah]anthracene	11 ppm
Fluoranthene	980 ppm
Fluorene	160 ppm
Indeno[1,2,3-cd]pyrene	35 ppm
Naphthalene	30 ppm
Pyrene	1,400 ppm

The typical composition of creosote is as follows:

<u>Component:</u>	<u>Composition:</u>
Naphthalene	17.0
2-Methylnaphthalene	6.5
1-Methylnaphthalene	3.5
Biphenyl	1.9
Acenaphthylene	0.5
Acenaphthene	7.8
Dibenzofuran	5.2
Fluorene	6.0
Phenanthrene	19.4
Anthracene	2.5
Carbazole	5.1
Fluoranthene	11.8
Pyrene	8.4
1,2-Benzanthracene/Chrysene	4.2
Total	99.8

The lower limit of detection for PAHs using the ROST tool has not been determined. A review of data supplied by the author suggests the MDL for the ROST tool may be between 125 and 600 ppm for PAHs. Should the current MDEQ clean up criteria be utilized at this site the ROST tool does not appear to have the necessary sensitivity for horizontal/vertical delineation purposes. The author has utilized analytical data along with ROST logs to define the creosote plume boundaries. However, there are numerous cases where ROST logs indicate the most likely locations of low level contamination, but samples were not collected in these zones.

As an example, ROST 12 (Figure 8) was determined to be free of creosote contamination. Samples were collected and analyzed at 8' - 10' and 44' - 46'. In both cases, the fingerprint did not indicate creosote and the intensity of the signal was near baseline. However, the fingerprint for creosote was more favorable between 22.5' and 40', and further, the intensity of the signal was significantly higher, but no sample was collected in this zone. Likewise, ROST 15 (Figure 9) shows a distinct creosote signature between 5' and 15' coupled with a low intensity signal. The author suggests that this location contains no creosote. The same is true for ROST 16 (Figure 10), ROST 20 (Figure 11), ROST 39 (Figure 12) and ROST 52 (Figure 13). There are numerous other examples. For instance, ROST 52 (Figure 13) was determined by the author to be clean, yet it has a distinct creosote fingerprint at the 7' to 15' depth and a significant intensity. ROST 42 (Figure 14) has a similar fingerprint and only slightly higher intensity and is designated as a contaminated location.

To summarize, the ROST tool appears to be capable of detecting creosote at elevated levels. However, linearity of response has not been demonstrated, nor has the instrument's precision or lower limit of detection been determined. As a result, conclusions drawn with regard to the extent of contamination on the site should be limited until such time the issues of linearity, precision, accuracy, and sensitivity are addressed.

V. CONCLUSION

The Remedial Investigation by Pisani has focused on two areas previously identified by others. These areas have been better defined by Pisani. However, the author has not demonstrated the precision, accuracy, linearity or sensibility of the ROST tool in this investigation. Therefore, plume boundaries may not be accurately defined.

Surface samples collected by Pisani on the western portion of the Ryan property indicate elevated levels of creosote (vertical sampling has not been performed). Historical records dating back to 1937 suggest that this area was utilized for untreated wood storage.

Discovering creosote on the Ryan property in an area where it should not have been only serves to emphasize the importance of performing a complete and thorough investigation of the entire site. It does not seem prudent to suggest that contamination is confined to 5± acres of the site when historical data on the site are absent during a 36 year (1900 - 1936) span of operation.

In short, a sixty (60) year accumulation of creosote and associated materials have been left on the site. There are no records to suggest that residue or free product has been removed.

Therefore a thorough, complete and accurate horizontal and vertical delineation of the Gulf States

Creosote site is mandated.



STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES J. PALMER, JR.
EXECUTIVE DIRECTOR

February 21, 1997

FILE COPY

Mr. Glen M. Pilie
Adams and Reese
4500 One Shell Square
New Orleans, Louisiana 70139

Re: Former Gulf States Creosoting Site Hattiesburg, Mississippi
Site Investigation Work Plan dated January 7, 1997

Dear Mr. Pilie:

The Mississippi Office of Pollution Control (OPC) has reviewed the above referenced document. The OPC approves the Site Investigation Plan with the following conditions:

1. The decontamination process used in this plan shall be consistent with the Environmental Protection Agency Region IV Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, dated May 1996.
2. Groundwater monitoring wells located at the *Courtesy Ford Motor Dealership* shall be sampled during this sampling event.
3. All soil and groundwater samples shall be analyzed for volatile organic compounds (method 8240) and semi-volatile organic compounds (method 8270). The surficial soil samples do not have to be analyzed for volatiles.
4. All groundwater samples reported as non detectable for a contaminant of concern shall be capable of achieving quantification limits equal to or below the drinking water standards.
5. We reviewed the Rapid Optical Screening Tool (ROST) Laser-

Letter: Mr. Glen M. Pilie
February 21, 1997
Page 2

Induced Fluorescence (LIF) System for Screening of
Petroleum Hydrocarbons in Subsurface Soils draft document
dated 1996. We require that a minimum of twenty percent of
the cone penetrometer (CPT) sample locations be collected for
laboratory analysis.

7. You shall provide adequate notice prior to any field work to
afford us the option of splitting samples. If we do request
splits you shall provide them to us in the appropriate
containers.

This site investigation did not consider the reports generated for the Ryan Motor
Company and the Old Gibson Property. These reports are enclosed and may
indicate the need of some additional areas of investigation. This plan is written as
a source determination plan. If any additional sampling needs are identified from a
review of this remedial investigation report they will be provided to you once we
identify them.

If you have any questions regarding this matter, please contact Mr. Ken Whitten
(601) 961-5306.

Sincerely,



Russell H. Smith, P.E., Chief
Uncontrolled Sites Section



**McLaren[®]
Hart**

ENVIRONMENTAL ENGINEERING CORPORATION

FILE COPY

February 6, 1997

Mr. Marc Boutwell
Attorney at Law
Barrett Law Offices
404 Court Square North
Lexington, MS 39095

Re: Evaluation of Michael Pisani & Associates, Inc's "Site Investigation Work Plan" for the Former Gulf States Creosoting Site, Hattiesburg, Mississippi, dated January 7, 1996.

Dear Marc:

McLaren/Hart Environmental Engineering Corporation (McLaren/Hart) has reviewed and evaluated the January 7, 1996, "Site Investigation Work Plan" (Work Plan) prepared by Michael Pisani & Associates, Inc. (MPA). (McLaren/Hart assumes the correct date of the Work Plan is January 7, 1997.) The purpose of McLaren/Hart's evaluation was to determine if the Work Plan met the following objectives which are essential in evaluating potential remedial alternatives for the site:

- Determine the horizontal and vertical extent of contamination.
- Positively determine if there are one or two sources of contamination present, and if the two sources are isolated, determine their relationship.
- Obtain geologic information across a large area subject to potential remediation.
- Determine groundwater flow conditions at Gordon's Creek.
- Determine groundwater flow conditions across the entire site.
- Determine the continuity of a previously identified shallow clay layer.
- Determine the continuity of a previously identified deep clay layer believed the limiting factor in the depth of the contamination.

McLaren/Hart's comments are provided below. All references to sections and figures pertain to the Work Plan, unless otherwise stated.

Section 2, Site Background, of the Work Plan provides summaries of the previous investigations, as well as MPA's evaluation of the data. The following comments are provided:

1. May 1996 McLaren/Hart Investigation (reference Section 2.3.7)
The Work Plan stated that a map with boring locations was not provided with the McLaren/Hart report. A map was included with the report. The map is attached for

MPA's review and incorporation into the site maps and geologic cross sections.

The Work Plan did not include in Appendix A, Soil Borings from Previous Investigations, several of the boring logs from McLaren/Hart's investigation. Specifically, SB-1 located in the area of the former processing area and SB-2 and GP-7 located in the vicinity of Gordons Creek were excluded (reference the attached map). These borings indicated soil staining and the presence of free product. The boring logs are attached for inclusion in the Work Plan.

2. Site Geology (reference Section 2.5.2)

The geologic cross section did not incorporate boring B-2 from TDS's June 1996 investigation. This boring, in the vicinity of Gordon's Creek, indicated a 10 foot thick continuous sand layer. The boring further supports the basis for a continuous sand layer across the site and the potential for a contaminant pathway. McLaren/Hart recommends the inclusion of B-2 in the geologic cross section.

McLaren/Hart's comments regarding Section 4, Current Site Conditions, of the Work Plan are as follows:

1. Conceptual Understanding of Site (reference Section 4.2)

Paragraph 2 of this section states "...However, the results of work performed by TDS on June 1996 indicate that subsurface soils to the north and east of the Gordon's Creek fill area (in the direction of the former process area) are unaffected. This suggests that the two areas are distinct and separate and that subsurface migration from the former process area was not the source of affected soils in the Gordons Creek fill area."

McLaren/Hart disagrees that the available information supports this statement. Specifically, the lack of stratigraphic data and hydrogeologic data (vertical and horizontal gradients and groundwater quality) across the site precludes this conclusion, especially given the presence of creosote materials in Gordons Creek. McLaren/Hart recommends that this section is appropriately amended.

2. Identification of ARARs (reference Section 4.4)

This section states that as "a precautionary measure" investigation activities will be performed in compliance with the requirements of 29CFR 1910.120.

Compliance with 29CFR 1910.120 is not optional for the proposed site investigative activities. A review of the Health and Safety Plan (Section 7) indicates that all of the required elements of 29CFR 1910.120(b)(4)(ii) are not addressed. Elements that the Health and Safety Plan does not address include:



- a. Implementation of a medical surveillance program.
- b. Frequency and types of air monitoring.
- c. Personnel monitoring and environmental sampling techniques and instrumentation.
- d. Requirements for upgrading personal protection.

McLaren/Hart recommends amending the Health and Safety Plan prior to the site investigation activities for compliance with 29CFR 1910.120.

Section 5 of the Work Plan proposes four (4) field activities. The proposed activities and McLaren/Hart's evaluation and recommendations are summarized below:

1. Stratigraphic definition and determination of soil properties (reference Section 5.1)

Proposed Activities; Cone penetrometer testing (CPT) will be conducted at fourteen (14) locations northwest, west and southwest of the former process area (reference Figure 5-1). Three (3) soil borings will be installed with up to four (4) samples per boring analyzed for chemical transport and geotechnical properties.

Evaluation; The proposed CPT methodology can provide useful stratigraphic information, especially relative to the continuity of the shallow and deep clay layers, at the proposed locations. However, no locations are proposed to the northeast, east, and southeast of the former processing area or west of Gordons Creek. Stratigraphic information is necessary from these areas given their proximity to the known source areas, in order to evaluate potential transport mechanisms. Finally, the proficiency of the CPT operator and data evaluator is critical in obtaining and accurately interpreting the CPT logs.

Recommendations; In addition to the proposed activities, McLaren/Hart recommends 3-4 CPT locations northeast, east and southeast of the former processing area and two (2) CPT locations west of Gordons Creek. Given the size of the site and the heterogeneity of the geology an additional three (3) borings are recommended for obtaining samples for chemical transport and geotechnical properties. A calibration boring is also recommended at the initiation of the investigation in order to compare and correlate a geotechnical log with a CPT log. Finally, the experience and qualifications of the CPT operator and data evaluator should be reviewed and approved prior to the initiation of the field investigation.

2. Source characterization (reference Section 5.2)

Proposed Activities; Rapid Optical Screening Tool (ROST) /CPT, utilizing a laser



induced fluorescence (LIF) detector, will be conducted at 57 locations (reference Figure 5-2). Contaminant delineation information for the source area media (unsaturated soils) and stratigraphic information will be obtained at all locations. Utilizing the CPT, soil samples will be obtained from 10%, i.e., 5-6, of the locations and analyzed for volatile and semivolatile organics.

Evaluation; The ROST is a relatively new in-situ screening technology. Information obtained by McLaren/Hart indicates the following:

- a. The sensitivity of the technology is in the "triple digit part per million" range; consequently, this technique may not provide data adequate for the delineation of impacts.
- b. Operation of the system and interpretation of the data is complex and requires a skilled and trained operator.
- c. Sensitivity of the instrumentation, calibration factors, etc. will vary significantly with soil types, i.e., sand vs. clay.
- d. Detectors other than a LIF may be more sensitive to creosote compounds since they are not strong fluorescers.
- e. Unless extensive on-site calibration is conducted, the best use of the technology is for screening purposes.

The Work Plan did not provide any information relative to the appropriateness of the technology to the site conditions, anticipated sensitivity of the methodology, or the chemical constituents that can/will be targeted. Specifications, methodology, procedures, standard operating procedures, etc. for the ROST were not provided in the Work Plan.

Finally, the ROST/CPT unit is normally mounted on a large (25 ton) truck. Many of the proposed ROST/CPT locations in the Gordons Creek area would be inaccessible to a large road rig (reference Figure 5-2).

Recommendations; In addition to the proposed activities, McLaren/Hart recommends utilizing the CPT to obtain soil samples at the horizontal limits of the two (2) source areas, as determined in the field utilizing ROST, for volatile and semivolatile organic laboratory analyses. Six (6) to eight (8) locations, with 3-4 samples per location, per source area are recommended for sampling. Provisions should be made to ensure access of the CPT/ROST unit to the proposed locations or propose/utilize alternate equipment and techniques to obtain the data.

Evaluation of the specifications, methodology, and standard operating procedures for the ROST unit prior to the field activities is recommended. Additionally, obtaining information specifying the sensitivity, detection limits and target compounds and an



evaluation of the applicability of the technology to the site conditions is recommended. Finally, the experience and qualifications of the ROST operator should be reviewed and approved prior to the initiation of field activities.

3. Groundwater investigation (reference section 5.3)

Proposed Activities; Five (5) monitoring wells will be installed northwest, west and southwest of the process area. An optional location is proposed at the northeast corner of the process area (reference Figure 5-4). The wells will be screened over the entire saturated thickness of the first water bearing unit. The monitoring well samples will be analyzed for volatiles, semivolatiles and inorganics. Slug testing to determine hydraulic conductivities will be conducted on each well.

Evaluation; The proposed placement of the well screens will not allow for the differentiation of stratified contaminants or evaluation of vertical gradients. Likewise, the proposed well screen placements will not allow for a correlation or comparison of the analytical data or water level elevations with the existing (4) monitoring wells. The proposed activities do not incorporate the four (4) existing site monitoring wells. Finally, no well locations are proposed northeast of the source area or in the vicinity of Gordons Creek.

Recommendation; McLaren/Hart recommends expanding the groundwater investigation to include the areas northeast of the source area and Gordon's Creek, the existing monitoring wells, and well nests at all new locations. Specifically:

- a. Installation of the five (5) monitoring wells at the locations proposed in Figure 5-4, and the optional well location.
- b. Installation of one (1) monitoring well northeast of the process area and two (2) monitoring wells west and east of Gordon's Creek, i.e., both sides of the creek.
- c. Monitoring wells should intersect the water table utilizing 10 foot screens.
- d. Installation of piezometers, consisting of 5 foot well screens at the bottom of the shallow aquifer, at all locations.
- e. Obtain and analyze samples, including samples from the four (4) existing wells, for semivolatile organics, volatile organics and inorganics.
- f. Survey the location and casing elevation of all wells. Obtain water level measurements to determine vertical and hydraulic gradients.
- g. Conduct slug tests on all wells, including the existing wells, in order to determine hydraulic conductivities.



Mr. Marc Boutwell
February 6, 1997
Page 6

4. Surface soil sampling (reference Section 5.4)

Proposed Activities; Twenty (20) surface soil samples will be obtained from a 0-12" depth interval (reference Figure 5-6). The samples will be analyzed for semivolatiles.

Evaluation; The activity will provide information relative to the potential for exposure to the public at the proposed locations. However, no sample locations are proposed for the residential areas adjacent to the process area.

Recommendation; In addition to the proposed activities, McLaren/Hart recommends obtaining 8-10 surface samples northeast, east and southeast of the process area.

Implementation of the recommended activities is expected to provide the information to meet the previously referenced objectives in order to evaluate remedial alternatives. However, as with all environmentally complex sites the evaluation of the resultant site investigation data may lead to requirements for additional studies.


If you have any questions please do not hesitate to call.

Sincerely,

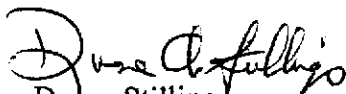
McLaren/Hart Environmental Engineering Corp.



Rick Smith
Office Manager
Principal Environmental Scientist



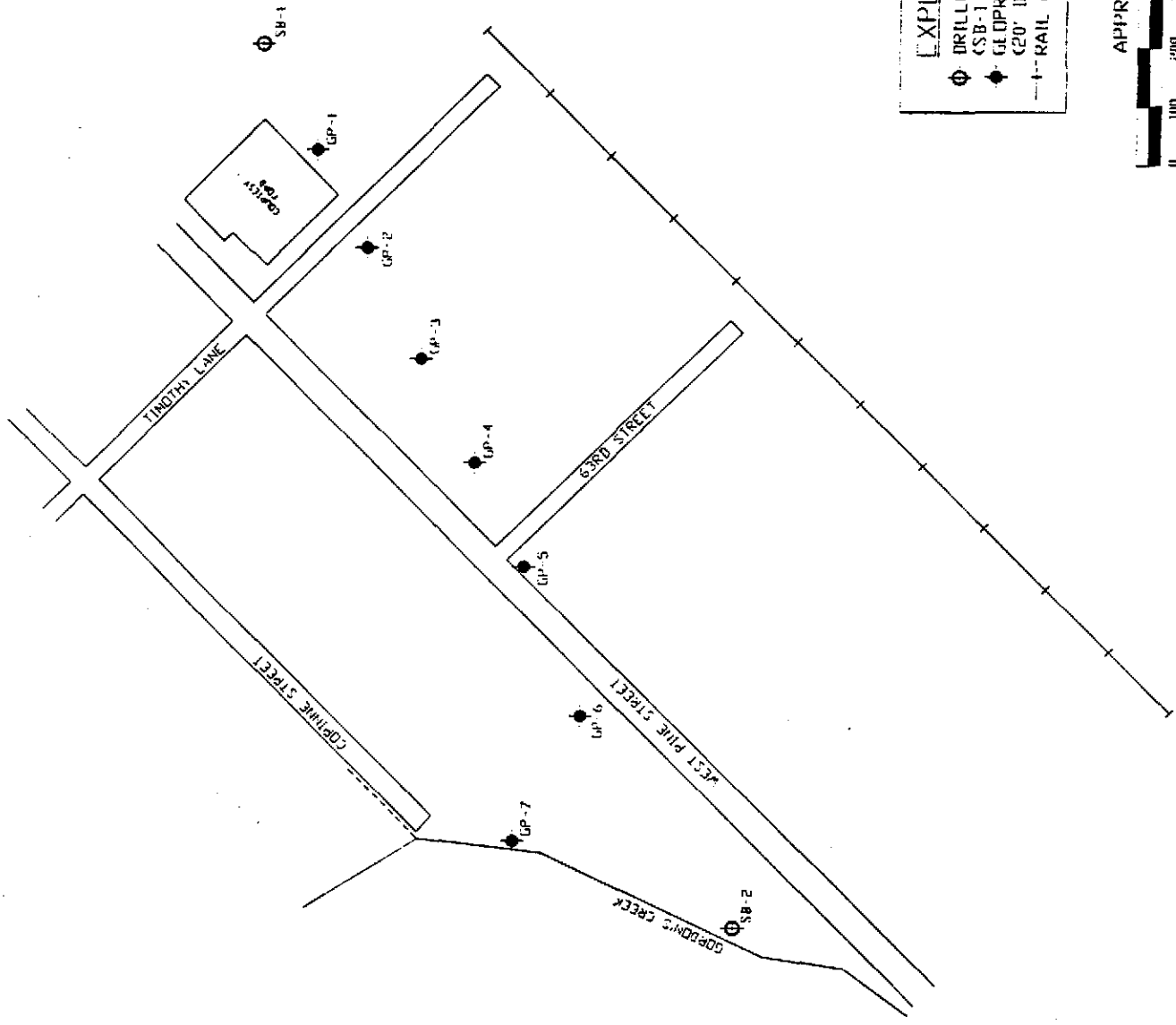
Kim Anderson, Ph.D.
Vice President



Duane Stillings
Senior Geoscientist

o:\staff\smith\marc1.wpd





EXPLANATION
 ◉ DRILLED SOIL BORINGS (SB-1 TO SB-3, SB-2 TO SB-3)
 ● GROUND PROBE BORINGS (20' DEPTHS)
 --- RAIL ROAD

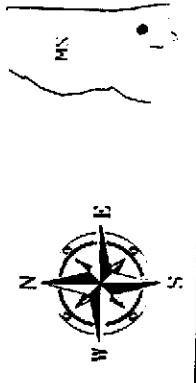
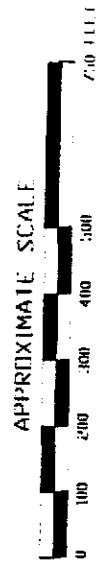


FIGURE 1
 BORING LOCATIONS

GULF STATES CROSCOTT 5TH
 HATTIESBURG, MISSISSIPPI

M/A McIaren Hart ENVIRONMENTAL ENGINEERING CORPORATION

DRAWN: KMC	CHECKED: DAV
DATE: 06/14/96	

SOIL DRILLING LOG

SB/MW #: SB-1

D- _____

Page 1 of 1

Geologist: D. Stillings



SIGNATURE OF GEOLOGIST _____

PROJECT Gulf States Creosote Site LOCATION Hattiesburg, MS
 TOC ELEVATION _____ (MSL) DATE(S) 5/30/96 5/30/96 TOTAL DEPTH 50.0'
 MONITORING DEVICE _____ SCREENED INTERVAL _____
 SAMPLING METHOD _____ SUBCONTRACTOR & EQPT Griner Drilling/Failing F-10
 PERCENTAGE ORDER: (GRAVEL, SAND, SILT, CLAY) MEMO _____
 MEMO _____

Depth Below Surface (ft.)	Sampler Interval/Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
2.5				Asphalt parking lot.		X	
5.0				FILL, sand and gravel, bricks, wet, slight oily odor, black.		X	
7.5						X	
10.0				SAND and gravel, wet, strong creosote odor, black.	GP	X	
12.5						X	
15.0				CLAY, silty, 10 YR 7/1 with 10 YR 5/8 mottling and black mottling, creosote odor.	CL	X	
17.5						X	
20.0				CLAY, silty, 10 YR 7/1 with 10 YR 5/8 mottling, creosote odor.	CL	X	
22.5						X	
25.0				SAND, clayey, moist, 10 YR 7/1 with black layers, oily (wet with oil), strong creosote odor.	SC	X	
27.5						X	
30.0				SAND, fine grain, silty, moist to wet, 10 YR 7/1, with black oily layer, strong creosote odor.	SM	X	
32.5						X	
35.0				SAND, fine grain, silty, wet (flowing), 2.5 Y 6/2, trace creosote odor. (Sample was probably layered or mottled with two colors, but flowing conditions mixed sample into a homogeneous texture and color.)	SM	X	
37.5						X	
40.0				SAND, fine grain, silty, wet, trace creosote odor, 10 YR 7/1.	SM	X	
42.5						X	
45.0				SAND, fine grain, with silt, wet, 2.5 Y 5/2, faint but distinct creosote odor.	SM	X	
47.5						X	
50.0				CLAY, hard, tight, dense, slightly moist, no odor, chart 2 for gley: 10 G 6/1. End of boring.	CL	X	

SOIL DRILLING LOG

SB/MW #: SB-2
 # D- _____
 Page 1 of 1
 Geologist: D. Stillings



SIGNATURE OF GEOLOGIST _____

PROJECT Gulf States Creosote Site LOCATION Hattiesburg, MS
 TOC ELEVATION _____ (MSL) DATE(S) 5/31/96 5/31/96 TOTAL DEPTH 35.0'
 MONITORING DEVICE _____ SCREENED INTERVAL _____
 SAMPLING METHOD _____ SUBCONTRACTOR & EQPT Griner Drilling/Falling F-10
 PERCENTAGE ORDER: (GRAVEL, SAND, SILT, CLAY) MEMO _____
 MEMO _____

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
2.5				Grass and shrub cover.		X	
5.0				SAND, fine grain, moist, faint creosote odor, 10 YR 6/1.	SP	SP	
7.5						X	
10.0				SAND, medium grain, moist, visible oil, strong creosote odor, dark brown to black.	SP	SP	
12.5						X	
15.0				SAND, fine, moist to wet, 10 BG 6/1 (chart 2 for gley) with dark brown oily staining (mottling), strong creosote odor.	SP	SP	
17.5						X	
20.0				SAND, medium grain, trace silt, wet, 10 BG 6/1 (chart 2 for gley), strong creosote odor.	SP	SP	
22.5						X	
25.0				SILT and fine sand, trace clay, moist, soft, mottled 5GY 6/1 and 10 GY 5/1 (chart 1 for gley), very faint creosote odor.	ML	ML	
27.5						X	
30.0				CLAY, silty, slightly moist, firm, no odor, mottled 10 GY 6/1 (chart 1 for gley) and 10 YR 6/2 and 10 YR 5/6.	CL	CL	
32.5						X	
35.0				CLAY, hard, firm, tight, slightly moist to dry, no odor, 10 YR 4/4. End of boring.	CL	CL	

SOIL DRILLING LOG



SB/MW #: GP-7
 # D- _____
 Page 1 of 1
 Geologist: D. Stillings

SIGNATURE OF GEOLOGIST _____

PROJECT Gulf States Creosote Site LOCATION Hattiesburg, MS
 TOC ELEVATION _____ (MSL) DATE(S) 5/31/96 5/31/96 TOTAL DEPTH 20.0'
 MONITORING DEVICE _____ SCREENED INTERVAL _____
 SAMPLING METHOD _____ SUBCONTRACTOR & EQPT W. Abshire/Geoprobe
 PERCENTAGE ORDER: (GRAVEL, SAND, SILT, CLAY) MEMO _____
 MEMO _____

Depth Below Surface (ft.)	Sampler Interval/Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0 - 2.5				SAND, fine grain, with trace medium and coarse sand, dry, soft, no odor, 10 YR 6/3.	SP		
2.5 - 5.0				SAND, fine grain, trace medium grain, becoming silty at 5 feet, slightly moist at 4 feet, moist to wet at 8 feet, no odor, 10 YR 6/3.			
5.0 - 7.5				10 YR 6/8. Sand, medium grain, silty. SAND, medium grain, trace silty, trace pebbles, wet, no odor, 10 YR 8/2.			
7.5 - 10.0				SAND, fine grain, silty, wet, no odor, 10 YR 6/8.			
10.0 - 12.5				SILT, trace clay, becoming clayey at 12 feet, moist, no odor, 10 YR 7/1.	ML		
12.5 - 15.0				Slough, sand and pebbles, wet.			
15.0 - 17.5				CLAY, silty, moist, firm, no odor, chart 2 for gley: 5B 6/1.	CL		
17.5 - 20.0				SILT and fine sand, clayey, moist, firm, no odor, chart 2 for gley: 10 BG 6/1.	ML		
				Unknown recovery, couldn't remove tube from sampling spoon, "hammered" out a medium grain sand, wet, noticeable creosote odor, chart 2 for gley: 10 BG 6/1.	SP		
				End of boring.			

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MDEQ OPC HWD USS RUSSELL H. SMITH

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- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MR. RICHARD HAWTHORNE, THE AGENT
KBRWALCOB CHEMICAL CO. OF OREGON
P.O. BOX 1500
OKLAHOMA CITY, OKLA.

4a. Article Number

Z 200 262 446

4b. Service Type

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- Express Mail
- Return Receipt for Merchandise
- Certified
- Insured
- COD

7. Date of Delivery

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X


[Handwritten Signature]

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Jackson, MS 39289-0385



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STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

January 16, 1997

CERTIFIED MAIL NO. Z 200 262 446 RETURN RECEIPT REQUESTED

Mr. G. D. Christiansen, Vice President
Kerr-McGee Chemical Corporation
P.O. Box 25861
Oklahoma, OK 73125

Re: Gulf States Creosote Site
Signed Agreed Order No. 3381 97
Hattiesburg, Mississippi

Dear Mr. Christiansen:

Enclosed is a copy of Agreed Order No. 3381 97 that the Mississippi Department of Environmental Quality has issued as a result of environmental issues regarding the above referenced site near Hattiesburg, Mississippi. Your cooperation in carrying out the provisions of this order is encouraged.

You should address questions regarding this document to me. My phone number is (601) 961-5072.

Sincerely,

A handwritten signature in black ink that reads "Russell H. Smith".

Russell H. Smith, P.E., Chief
Uncontrolled Sites Section

Enclosure

XC: Glen Pilie, Adams and Reese
Walter Dukes, Dukes Keating & Faneca

Gulfstate Creosote Site Transmittal letter of VEP Order No. 3381 97 dated 1-15-97 (Disk RHS-13).wpd

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of Kerr-McGee Chemical Corporation
P. O. Box 25861
Oklahoma City OK 73125

Order No. **3381** 97

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department Environmental Quality ("MDEQ") and (Kerr-McGee Chemical Corporation), ("Kerr-McGee") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. Kerr-McGee has been sued by various individuals, corporations and the Hattiesburg School District with regard to alleged chemical contamination on the Sixteenth Section Property located in Hattiesburg, Mississippi. Kerr-McGee is alleged to be the successor in interest to a former operator of a creosote plant which was located on a portion of the Sixteenth Section Property. Kerr-McGee asserts it has never owned any interests in the Sixteenth Section Property. Kerr-McGee asserts it has never operated any creosote plant or other facility on the Sixteenth Section Property. Kerr-McGee asserts it has never generated and/or disposed of any material on the Sixteenth Section Property. While Kerr-McGee asserts it has no legal or equitable interest in the property, it is interested in a proper characterization of the site. Kerr-McGee denies any liability whatsoever for any materials which may have come to be located on or under the Sixteenth Section Property. By entering this agreement, neither the Commission nor MDEQ asserts or waives any position regarding any liability of Kerr-McGee for contamination on said property.

2. MDEQ has reason to believe that conditions exist on the Sixteenth Section Property which warrant oversight by MDEQ. Specifically, Kerr-McGee, while denying any and all liability for any materials which may have become located on the property, has requested MDEQ's oversight of certain scientific and technical investigations it intends to conduct on the property. Kerr-McGee has transmitted a Work Plan to MDEQ to conduct a site characterization study on the property or portions thereof.

3. MDEQ considers the site to be an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. By this Agreement MDEQ accepts Kerr-McGee's request for participation in the Program.

4. Kerr-McGee agrees to the following terms and conditions of participation in the Program:

(a) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee a non-refundable Program application fee of \$500.00.

(b) Kerr-McGee will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site in connection with Kerr-McGee's site investigation. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$75.00 per hour for each hour of MDEQ project officer time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by Kerr-McGee, plus MDEQ's actual cost (above and beyond project officer time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, attached to this order as Appendix 1. MDEQ reserves the right to increase or decrease the per hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify Kerr-McGee in writing of the new cost schedule, and the new cost schedule will

become effective forty-five days after the date of the written notice to Kerr-McGee. If Kerr-McGee determines to discontinue its participation in the Program for the site after a change by MDEQ in the per hour and analytical cost schedule, Kerr-McGee may terminate its participation in the program as it stated in paragraph 10, below. MDEQ will send an invoice to Kerr-McGee on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by Kerr-McGee, and Kerr-McGee will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.

(c) Kerr-McGee will pay to MDEQ simultaneously with the execution of this document by Kerr-McGee an advance of the total to be paid to MDEQ pursuant to subsection 4(b) of this agreement in the amount of \$6,000.00. This amount will be deposited into the Fund to be used by MDEQ as payment of partial payment for the project costs charged to Kerr-McGee in the first and last invoices sent by MDEQ to Kerr-McGee. MDEQ will credit one-half of this amount against the total first invoice amount billed to Kerr-McGee. If a credit balance exists for Kerr-McGee after deducting the first invoice amount from the first one half of the deposited amount, the remainder of the first one half of the deposited amount will be deducted from the second invoice amount, as so on, until the first one half of the deposited amount is exhausted. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 4(b), above, in excess of the first one half of the deposited amount. At the completion of MDEQ's involvement with the project, the remaining one half of this amount will be credited against the final invoice sent by MDEQ to Kerr-McGee. Kerr-McGee will remain liable for the payment of all invoiced amounts described in subparagraph 4(b), above, in excess of the second one half of the deposited amount. Any deposited amount remaining after payment in full of the last project invoice will be refunded to Kerr-McGee.

5. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by Kerr-McGee regarding the site.

6. Kerr-McGee will obtain on behalf of MDEQ access to the site to be evaluated pursuant to this Agreed Order. Since the site is owned or operated by a third party, Kerr-McGee will provide to MDEQ a copy of a document assuring MDEQ site access for the remainder of MDEQ's activities under this Order. In the event access is not received by Kerr-McGee on a voluntary basis, Kerr-McGee will seek relief from the appropriate authority.

7. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against Kerr-McGee. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against Kerr-McGee. This agreement does not represent the settlement or release of any liability of Kerr-McGee for any action, inaction or property condition. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site. By entering into this Agreement Kerr-McGee admits no liability whatsoever for conditions at the site and specifically denies any such liability.

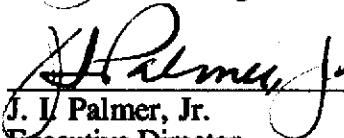
8. If any part of any amount invoiced to Kerr-McGee by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to 25 percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. § 17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the non paying party.

9. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if

Kerr-McGee fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. §17-17-54 (Supp. 1996); (3) any rule or regulation promulgated by the Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

10. Either Kerr-McGee or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to Kerr-McGee an invoice for all work accomplished prior to the effective date of termination for which Kerr-McGee previously has not remitted payment. Kerr-McGee will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

SO AGREED AND ORDERED, this the 15th day of January, 1997.



J. I. Palmer, Jr.
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the 6th day of January, 1997.

BY:  Woz

TITLE: Vice President
Kerr-McGee Chemical Corporation

STATE OF Oklahoma
COUNTY or PARISH OF Cleveland

_____ PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named G.A. Christiansen who first being duly sworn, did state upon his/her oath and acknowledge to me that he/she is the Vice President of Kerr McGee Chemical Corporation and is authorized by that Corporation to sign this Agreement and to enter this Agreement on behalf of Kerr McGee Chemical Corporation..

_____ SWORN TO AND SUBSCRIBED BEFORE ME, this the 6th day of January, 1997.

Nancy M. Hest _____ NOTARY PUBLIC

MY COMMISSION EXPIRES: September 30, 2000

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

STATE OF MISSISSIPPI
COUNTY OF HINDS

DEQ CONTRACT NUMBER

CONTRACT
for
Laboratory Analysis

This document reflects a contractual agreement between the Mississippi Department of Environmental Quality (herein referred to as DEQ) and Mississippi State University, Chemical Laboratory (herein referred to as CONTRACTOR or MSCL) to provide services, materials, facilities, and personnel, as specified in paragraph 3, Statement of Work.

1. Purpose

The purpose of this contract is to provide the Mississippi Department of Environmental Quality, Office of Pollution Control, with analytical services for environmental, priority pollutant, hazardous constituent, water quality, and waste samples by the MSCL.

2. Definitions

As used throughout this contract, the following terms shall have the meaning set forth below:

EC/GC - Electron Capture/Gas Chromatography
GC/MS - Gas Chromatography/Mass Spectroscopy
RCRA - Resource Conservation and Recovery Act
Part 261 - EPA Hazardous Waste Regulation, 40 CFR
Part 261, Identification and Listing of Hazardous Waste
MSU - Mississippi State University
EPA - United States Environmental Protection Agency
TCLP - Toxicity Characteristic Leaching Procedure
Appendix IX - Appendix IX, Groundwater Monitoring List.
EPA Hazardous Waste Regulation, 40 CFR Part 264
SDWA - Safe Drinking Water Act
MSDH - Mississippi State Department of Health

3. Statement of Work

A. Services

For the consideration referred to in paragraph 7, Consideration and Payment, CONTRACTOR shall provide DEQ with services as specified below:

(1) Priority Pollutant Screen:

(31) Volatile Organic Compounds (VOCs)	- \$225
(11) Acid Compounds	- \$200
(46) Base/Neutral Compounds	- \$300
(57) Acid and Base/Neutral Compounds (ABNs)	- \$425
(25) Organochlorine Pesticides, including	
(7) PCBs:	
(a) Water	- \$125
(b) Soil/Sediment/Solid Waste	- \$175

(13) Metals:

Antimony	- \$ 23/17*
Arsenic	- \$ 40/30
Beryllium	- \$ 23/17
Cadmium	- \$ 23/17
Chromium	- \$ 23/17
Copper	- \$ 23/17
Lead at PPM Levels	- \$ 23/17
Mercury	- \$ 40/30
Nickel	- \$ 23/17
Selenium	- \$ 40/30
Silver	- \$ 23/17
Thallium	- \$ 23/17
Zinc	- \$ 23/17
Sample preparation for metals	
analysis	- \$ 25.
Cyanide, Total	- \$ 40/25
Phenols, Total	- \$ 35

*(Cost for 1st sample/cost for subsequent samples)

(2) Target Compound List/Priority Pollutant Screen

(34) Volatile Organic Compounds (VOCs)	- \$225
(65) Semivolatile Compounds (ABNs)	- \$425

VOC and ABN fractions will be analyzed for the compounds on the EPA Target Compound List (TCL) and Priority Pollutant List (PPL) and quantified to the levels stated in the TCL and PPL. The quantitation limits assume a clean sample with contaminants present at low levels and interference free. A high level or "dirty" sample will require dilution and correspondingly higher quantitation limits. GC/MS traces will be examined and unknown peaks larger than 40% of the internal standard (up to a maximum of 20 peaks) will be identified, if possible. The concentrations of compounds appearing on the Appendix IX list of hazardous constituents will be estimated by comparing to the nearest internal standard.

Additional work requested by DEQ to re-examine reported GC/MS results or perform additional analyses in an attempt to identify or obtain additional information on unknown or tentatively identified compounds will be done by MSCl at an additional charge of \$30 to \$65 per hour.

(27) Organochlorine Pesticides, including (7) PCBs:	
(a) Water	- \$125
(b) Soil/Sediment/Solid Waste	- \$175

Inorganic Target Analyte List
(23 metals plus cyanide)

Sample preparation for metals analysis	- \$ 25
Aluminum	- \$ 23/17*
Antimony	- \$ 23/17
Arsenic	- \$ 40/30
Barium	- \$ 23/17
Beryllium	- \$ 23/17
Cadmium	- \$ 23/17
Calcium	- \$ 23/17
Chromium	- \$ 23/17
Cobalt	- \$ 23/17
Copper	- \$ 23/17
Iron	- \$ 23/17
Lead	- \$ 23/17
Magnesium	- \$ 23/17
Manganese	- \$ 23/17
Mercury	- \$ 40/30
Nickel	- \$ 23/17
Potassium	- \$ 23/17
Selenium	- \$ 40/30
Silver	- \$ 23/17
Sodium	- \$ 23/17
Thallium	- \$ 23/17
Vanadium	- \$ 23/17
Zinc	- \$ 23/17
Cyanide	- \$ 40/25

*(Cost for 1st sample/cost for subsequent samples)

(3) Pesticides and PCBs

a. Organochlorine (OC) Pesticides and PCBs (Method 8080 or equivalent method)	
1. OC Pesticides and PCBs:	
(a) Water/Wastewater	- \$125
(b) Soil/Sediment/Solid Waste	- \$175
2. OC Pesticides Only:	
(a) Water/Wastewater	- \$100
(b) Soil/Sediment/Solid Waste	- \$150
3. PCBs Only:	
(a) Water/Wastewater	- \$100
(b) Soil/Sediment/Solid Waste	- \$125
b. Organophosphorus Pesticides (Method 8140 or equivalent method):	

	1. Water/Wastewater	- \$100
	2. Soil/Sediment/Solid Waste	- \$125
	c. Chlorinated Herbicides (Method 8150 or equivalent method)	- \$150
(4)	Dioxin/Furan Screen (by EC/GC)	- \$100
(5)	RCRA, Part 261, Characteristics of Hazardous Waste	
	a. Characteristic of Ignitability (Flash Point)	- \$ 35
	b. Characteristic of Corrosivity (pH)	- \$ 10
	c. Characteristic of Reactivity	
	Reactive Cyanide	- \$ 40
	Reactive Sulfide	- \$ 35
	d. Toxicity Characteristic	
	Extractions:	
	1. Extraction for Total Metals	- \$ 25
	2. TCLP Extraction for Metals, Pesticides, and ABNs (Cost is dependent on extraction difficulty.)	- \$50-100
	3. Zero Headspace Extraction for VOCs	- \$ 85
	Total Analytes and TCLP Analytes:	
	8 Metals:	
	Arsenic	- \$ 40/30
	Barium	- \$ 23/17
	Cadmium	- \$ 23/17
	Chromium, Total	- \$ 23/17
	Lead	- \$ 23/17
	Mercury	- \$ 40/30
	Selenium	- \$ 40/30
	Silver	- \$ 23/17
	8 Pesticides:	
	Chlordane; Endrin; Heptachlor and its epoxide; Lindane; Methoxychlor; and Toxaphene	- \$90
	2,4-D and 2,4,5-TP (Silvex)	- \$100
	23 Organics:	
	10 VOCs: benzene; carbon tetrachloride; chlorobenzene; chloroform; 1,2-dichloroethane; 1,1-dichloroethylene; methyl ethyl ketone; tetrachloroethylene; trichloroethylene; vinyl chloride	- \$175
	13 ABNs: o-cresol; m-cresol; p-cresol; 1,4-dichlorobenzene; 2,4-dinitrotoluene; hexachlorobenzene; hexachlorobutadiene; hexachloroethane; nitrobenzene; pentachlorophenol; pyridine; 2,4,5-trichlorophenol; and 2,4,6-trichlorophenol	- \$300
(6)	Other Analyses:	

Metals:

Aluminum	- \$ 23/17
Antimony	- \$ 23/17
Barium	- \$ 23/17
Beryllium	- \$ 23/17
Cadmium	- \$ 23/17
Calcium	- \$ 23/17
Chromium	- \$ 23/17
Cobalt	- \$ 23/17
Copper	- \$ 23/17
Iron	- \$ 23/17
Lead at PPM Levels	- \$ 23/17
Manganese	- \$ 23/17
Magnesium	- \$ 23/17
Nickel	- \$ 23/17
Potassium	- \$ 23/17
Silver	- \$ 23/17
Sodium	- \$ 23/17
Thallium	- \$ 23/17
Vanadium	- \$ 23/17
Zinc	- \$ 23/17
Arsenic	- \$ 40/30
Mercury	- \$ 40/30
Selenium	- \$ 40/30

Biochemical Oxygen Demand, 5-Day (BOD ₅)	- \$ 30
Chemical Oxygen Demand	- \$ 30
Chlorine, Residual	- \$ 20
Coliform (Fecal) Bacteria, MPN	- \$ 20
Coliform Bacteria, MPN Confirmed	- \$ 30
Cyanide	- \$ 40/25
Cyanide Amenable to Chlorination (< 1 mg/L)	- \$ 60
Cyanide Amenable to Chlorination (> 1 mg/L)	- \$ 30

Nitrogen:

Ammonia	- \$ 23
Total Kjeldahl (TKN)	- \$ 23
Nitrate	- \$ 23

Phosphorus:

Total	- \$ 30
Organic (By Difference)	- \$ 50
Orthophosphate	- \$ 20
Oil & Grease	- \$ 35
Phenols, Total	- \$ 35
Total Solids	- \$ 15
Suspended Solids	- \$ 10
Total Dissolved Solids	- \$ 20
Sulfate	- \$ 25
Sulfide, Total or Dissolved	- \$ 40
Total Petroleum Hydrocarbons (TPH)	- \$ 125/75

(7) Drinking Water Analyses (Safe Drinking Water Act):

a. Inorganics, Primary Regulated (SDWA)

Arsenic, Mercury, Selenium & Lead at \$40/30 each	- \$160/120
Barium, Cadmium, Chromium & Silver at \$23/17 each	- \$ 92/68
Fluoride	- \$ 12
Nitrate	- \$ 23

b. Organics

1. - Method 524.2, Volatile Organic
Compounds (VOCs)

a. Eighteen (18) Regulated VOCs - \$ 175
(SDWA):

Benzene, Carbon Tetrachloride,
 Para-Dichlorobenzene,
 1,2-dichloroethane,
 1,1-Dichloroethylene,
 1,1,1-Trichloroethane,
 Trichloroethylene, Vinyl
 Chloride, Ortho-Dichlorobenzene,
 Cis & Trans 1,2-Dichloroethylene,
 1,2-Dichloropropane, Ethylbenzene,

Monochlorobenzene, Styrene,
Tetrachloroethylene, Toluene,
Xylenes.

- b. Nineteen (19) Monitored - \$ 175
Unregulated VOCs:

Dichloromethane, Chloromethane,
Bromomethane, Chloroethane, 1,1-
Dichloroethane, 2,2-Dichloropropane, 1,1-
Dichloro-propene, Dibromomethane, Cis &
Trans-1,3-Dichloropropene,
1,1,2-Trichloroethane, 1,3-Dichloro-
propane, 1,1,1,2-Tetrachloroethane,
Bromobenzene, 1,2,3-Trichloropropane,
1,1,2,2,-Tetrachloroethane, Ortho-
chlorotoluene, Para-Chlorotoluene,
1,3-Dichlorobenzene.

- c. Four Proposed Trihalomethanes - \$ 175
(SDWA)

Chloroform, Bromoform,
Chlorodibromomethane,
Bromodichloromethane.

- d. Thirty Four (34) Target Compound
List (TCL) VOCs. - \$ 200

- e. TCL VOCs including MSDH regulated and
unregulated VOCs - \$ 200

NOTE: Detection limits will be 1 ppb or
less for the regulated and unregulated
VOCs, the proposed VOCs, and the proposed
trihalomethanes. Other monitored
VOCs will be reported at 1 ppb if
possible. Common lab and field
contaminants will not be reported
if, in the analyst's judgement,
they are due to contamination during
the analytical process. Analytes
must exceed blank values by a
factor of five to be reported,
except as noted above.

2. Method 8270, Sixty Five (65) TCL
Semivolatiles - \$400

NOTE: Detection limits will be 1 ppb for the
Target Compound List (TCL) Semivolatila
compounds except for those with higher
contract required quantitation limits,
which will be 2 to 5 ppb. Common lab and
field contaminants such as phthalates will
not be reported if, in the analyst's
judgement, they are due to contamination
during the analytical process. Analytes
must exceed blank values by a factor of
five to be reported, except as noted
above.

3. Methods 505 and 508:

- a. Method 505: Sixteen Regulated Pesticides/
PCBs and Five Proposed Pesticides -
\$125

- i. Sixteen Regulated Pesticides/ PCBs:

Alachlor, Atrazine, Chlordane,
Endrin, Heptachlor & Epoxide,
Lindane, Methoxychlor, Toxaphene,
PCBs (Aroclors 1016, 1221, 1232,
1242, 1248, 1254, 1260).

- ii. Five Proposed Pesticides:

Aldrin, Dieldrin, Hexachlorobenzene,
Hexachlorocyclo pentadiene, and
Simazine

- b. Method 508:
Chlorinated Pesticides - \$125

Twenty Seven (27) TCL Pesticides/

PCBs:

L, B, Y & Delta-BHC, Aldrin, L & Y
-Chlordane, Dieldrin, p,p-DDE,
DDD & DDT, Endrin & Ketone,
Endosulfan I, II & SO, Heptachlor &
Epoxide, Methoxychlor, Toxaphene, PCBs.

NOTE: Detection limits will be 1 ppb or less for regulated organohalide pesticides (0.2 ppb for Endrin). Detection limits will be 1 ppb or less for the majority of the above unregulated pesticides and individual PCBs, but a few may be slightly higher due to a decreased sensitivity of some compounds to electron capture detection.

4. (a) Method 515.1, Three (3) Regulated and Four (4) Proposed Chlorinated Acids (SDWA): - \$140

Three Regulated Chlorinated Acids:
2,4-D, Pentachloro-phenol, 2,4,5-TP (Silvex).

Four (4) Proposed Chlorinated Acids:
Dalapon, Dicamba, Dinoseb, and Pichloram

Detection limits will be 1 ppb or less for the regulated and proposed chlorinated acids.

- (b) Method 515.1, Pentachlorophenol by ec/gc - \$100

5. Method 531.1 Four (4) Regulated and Proposed Carbamate Pesticides (SDWA): - \$125

Four Regulated Carbamate Pesticides:
Aldicarb, Aldicarb Sulfoxide, Aldicarb Sulfone, Carbofuran.

Four (4) Proposed Carbamate Pesticides:
Oxamyl, Carbaryl, Methomyl, and 3-Hydroxycarbofuran.

Detection limits will be 3 ppb or less for the carbamate pesticides.

6. Method 550, Polynuclear Aromatic Hydrocarbons (PAHs) (Proposed, SDWA): - \$150

The detection limit will range from 0.01 to 0.10 ppb for the proposed polynuclear aromatic hydrocarbons (PAHs).

7. Method 547, Glyphosate (Proposed, SDWA): - \$250

The detection limit will be 25 ppb for glyphosate.

8. Method 504, Two (2) Regulated Organohalide Pesticides (SDWA): - \$ 90

Dibromochloropropane (DBCP) and Ethylene Dibromide (EDB).
The detection limit will be 0.1 ppb for DBCP and EDB.

9. Method 507, Four (4) proposed Nitrogen Phosphorus Pesticides - \$ 90

Butachlor, Metolachlor, Metribucin and Propachlor.

Emergency Response Samples: Emergency response samples consist of those samples collected in response to a chemical spill or similar incident where public health or safety are threatened and an imminent hazard exists. These samples will be analyzed at the rate of \$65 per hour, with a minimum charge of \$250 per sample.

Further work may be done at DEQ's request at \$65 per hour. On any such emergency sample, MSCL analysts will report to DEQ by telephone before the costs exceed \$455 (seven hours) for the given sample.

Priority Samples: Priority samples consist of those samples submitted by DEQ for which results are needed within 15 working days, but are not of an emergency response nature. Costs for these analyses will be at 1.5 times the normal rate for routine samples.

- B. Methodology and Quality Assurance/Quality Control Analyses will be performed in accordance with test methods and quality assurance/quality control (QA/QC) procedures specified in EPA manual SW-846, "Test Methods for Evaluating Solid Waste", or other appropriate EPA methods/procedures as determined by the DEQ and MSCL.

Upon request, MSCL will provide the DEQ with copies of its QA/QC manual. MSCL will also include, with each analytical report to DEQ, sample-specific QA/QC data to demonstrate the reliability of reported analytical results. MSCL will maintain copies of analytical reports and related QA/QC data for a minimum of ten years from the date of the report.

- C. CONTRACTOR shall perform the above-mentioned tasks under the supervision of the Chief of DEQ's Hazardous Waste Division, or his designee.
- D. CONTRACTOR shall analyze samples submitted by the Groundwater Planning Branch for evidence of groundwater contamination from agricultural chemicals. These services shall be performed under the supervision of the Head of the Groundwater Planning Branch or his designee. Such analyses shall include:

- (1) Nitrogen and Phosphorus containing pesticides:

Analysis by capillary column gas chromatography with Nitrogen/Phosphorus detector - \$125

- (2) Chlorinated pesticides:

Analysis by capillary column gas chromatography with electron capture detector - \$115

- (3) Chlorinated Acids and Phenols:

Analysis by derivatization and capillary column gas chromatography with electron capture detector - \$150

- (4) Herbicides

Analysis by high performance liquid chromatography (HPLC) with UV detector - \$100

- (5) Carbamate Insecticides

Analysis by high performance liquid chromatography (HPLC) with Post Column Derivatization capability - \$125

- (6) Volatile Organic Compounds

Analysis by GC/MS - \$225

- (7) Total Cost Per Sample - \$840

- (8) Other Analyses:

Aluminum	- \$ 23/17
Ammonia Nitrogen	- \$ 25/15
Antimony	- \$ 23/17
Arsenic	- \$ 40/30
Barium	- \$ 23/17
Beryllium	- \$ 23/17
Cadmium	- \$ 23/17
Calcium	- \$ 23/17
Chlorides	- \$ 25
Chromium	- \$ 23/17
Copper	- \$ 23/17
Cyanide	- \$ 40/25
Fluoride	- \$ 12
Hardness (Ca, Mg)	- \$ 40/30
Iron	- \$ 23/17
Lead	- \$ 23/17
Manganese	- \$ 23/17

Magnesium	- \$ 23/17
Mercury	- \$ 40/30
Nickel	- \$ 23/17
Nitrate-Nitrite	- \$ 23
Phosphates, Total	- \$ 30
Phosphates, Ortho	- \$ 25
Potassium	- \$ 23/17
Selenium	- \$ 40/30
Silver	- \$ 23/17
Sodium	- \$ 23/17
Sulfates	- \$ 25
Thallium	- \$ 23/17
Total Kjeldahl Nitrogen	- \$ 25
Total Solids @ 180 C	- \$ 15
Total Dissolved Solids @ 180 C	- \$ 20
Zinc	- \$ 23/17

E. CONTRACTOR may perform other analyses as requested by the Chief of the Hazardous Waste Division or the Head of the Groundwater Planning Branch, provided that additional costs associated with the analyses are agreed to in writing by the parties prior to the performance of the service.

4. Schedule

The services referred to in paragraph 3. Statement of Work, shall be provided to DEQ by CONTRACTOR in accordance with the following schedule:

Routine Samples: A turnaround time of 40 calendar days for non-emergency and non-priority samples is required for submittal of the analytical reports to DEQ. When possible DEQ will notify MSCL at least 15 days prior to submission of routine samples. The 40 calendar-day turnaround time starts at the time the samples are received by MSCL.

Emergency Response Samples: The MSCL will provide the DEQ with the analytical results within one to three days.

Priority Samples: These samples will be placed "next in line" for analysis following those DEQ samples already in progress. Reports will be submitted to DEQ within 15 working days of receipt of the samples by MSCL.

Transportation: The MSU Transportation Department will provide for the transport of samples from Jackson, Mississippi to the MSCL in Starkville, Mississippi. Staff of the DEQ will coordinate the transport of these samples with the Transportation Department at MSU and the MSU Van Service in Jackson, Mississippi.

5. Schedule Exceptions

If the services referred to in paragraph 3 Statement of Work, are not provided to DEQ by CONTRACTOR in accordance with paragraph 4. Schedule, Routine Samples, there will be a reduction in the amount charged DEQ by 20% provided the 15 day prior notice of sample submission was given by DEQ. Such reductions will be itemized separately on the invoice.

6. Period of Performance

The period of performance of this contract shall begin on July 1, 1996, and end no later than June 30, 1997.

7. Consideration and Payment

a. Consideration

As consideration for the performance of this contract, DEQ agrees to pay CONTRACTOR actual cost incurred based on the number of samples submitted and the schedule listed in paragraph 3. The cost schedule in paragraph 3. Statement of Work, reflects actual cost based on historical materials, personnel, and overhead, with a maximum cap sum of \$160,000. This maximum contract amount consists of \$60,000 limitation for analyses performed for the Hazardous Waste Division and \$100,000 limitation for analyses performed for the Groundwater Division, not to exceed a contract total amount of \$160,000.

b. Payment

1. DEQ shall pay, or make payments on, the above-mentioned consideration in accordance with the following schedule or procedure:

CONTRACTOR will submit invoices supported by documentation of the actual work performed within 45

days of completion of analysis and submission of analytical reports to DEQ. Invoices will be submitted separately for that work performed for the Hazardous Waste Division and that work performed for the Groundwater Division. Payment will be made to the CONTRACTOR within 45 days after receipt of each invoice.

2. In accordance with this payment schedule, CONTRACTOR shall submit to DEQ, in such form and reasonable detail as DEQ may require, invoices supported by documentation of the actual work performed on this contract and, if they are found to be in order, DEQ shall promptly cause payment to be made thereon to CONTRACTOR. In all cases, CONTRACTOR shall submit a final invoice for work performed within the time period of this contract no later than July 31, 1997.

8. Personnel

- a. CONTRACTOR represents that it has, or will secure at its own expense, all personnel required to perform this contract. Such personnel shall not be employees of DEQ. All of the services required hereunder shall be performed by CONTRACTOR, and all personnel engaged in the work shall be fully qualified to the satisfaction of DEQ and shall be authorized as permitted under federal, state and local law to perform such services.
- b. None of the work or services covered by this contract shall be subcontracted without the prior written approval of the Executive Director of DEQ. In the event a subcontract is so approved, then the subcontractor is subject to the conditions stipulated in this contract in paragraphs 9 through 35.

9. Covenant Against Contingent Fees

The CONTRACTOR assures that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee excepting bona fide employees or bona fide established commercial or selling agencies maintained by the CONTRACTOR for the purpose of securing business. For breach or violation of this assurance, the DEQ shall have the right to annul this contract without liability or, at its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee.

10. Audit: Access to Records

- a. The CONTRACTOR shall maintain books, records, documents and other evidence directly pertinent to performance on U.S. Environmental Protection Agency, other federal or fully state funded work under this contract in accordance with generally accepted accounting principles (GAAP) and practices consistently applied, 40 CFR Part 30 in effect on the date of execution of the contract. The CONTRACTOR shall also maintain the financial information and data used in the preparation or support of the cost submission required under the provisions of DEQ policy for any negotiated contract or change order and a copy of the cost summary submitted to the DEQ. The United States Environmental Protection Agency, the Comptroller General of the United States, the United States Department of Labor, the DEQ or any auditors in their employ or under contract representing these departments as agents, the Auditor of the State of Mississippi, the Attorney General of the State of Mississippi, any member of the Legislature of the State of Mississippi, the Chief of the Financial Division or of the Purchasing and Travel Division of the Office of Finance and Administration or any of their authorized representatives shall have access to all such books, records, documents and other evidence for the purpose of inspection, audit, and copying during normal business hours. The CONTRACTOR will provide proper facilities for such access and inspection.
- b. If this is a formally advertised, competitively awarded, fixed price contract, the CONTRACTOR agrees to make paragraphs a. through g. of this clause applicable to all negotiated change orders and contract amendments affecting contract price. In the case of all other types of prime contracts, the CONTRACTOR agrees to make paragraphs a. through g. applicable to all subcontracts he awards in excess of \$10,000 at any tier, and to make paragraphs a. through g. of this clause applicable to all change orders directly related to project performance.
- c. Audits conducted under this provision shall be in accordance with generally accepted auditing standards and with established

procedures and guidelines of the federal government, the state and the DEQ.

- d. The CONTRACTOR agrees to disclose all information and reports resulting from access to records under paragraphs a. and b. of this clause to any of the agencies referred to in paragraph a.
- e. Records under paragraph a. and b. above shall be maintained by the CONTRACTOR during the performance of any work under this contract and for the time periods specified in 40 CFR 30. In addition, those records which relate to any controversy arising under an Environmental Protection Agency assistance agreement, litigation, the settlement of claims arising out of such performance or to costs or items to which an audit exception has been taken shall be maintained by the CONTRACTOR for the time periods specified in 40 CFR 30
- f. Access to records is not limited to the required retention periods. The authorized representatives designated in paragraph a. shall have access to records at any reasonable time as long as the records are maintained.
- g. This right of access clause to financial records applies to all contracts (except formally advertised, competitively awarded, fixed price contracts), all contract change orders and all contract amendments regardless of the type of contract. In addition, this right of access applies to all records pertaining to all contracts, contract change orders and contract amendments:
 1. To the extent the records pertain directly to contract performance;
 2. If there is any indication that fraud, gross abuse or corrupt practices may be involved; or
 3. If the contract is terminated for default or for convenience.

11. Priority of Subagreement

This contract is expected to be funded in part with funds from the federal government. Neither the United States nor any of its departments, agencies or employees is, or will be, a party to this contract or any lower tier subcontract. This contract is subject to regulations promulgated by the federal grantor agency pertinent to the program providing funds for this contract, which were in effect on the day the assistance award was made to the DEQ. The applicable federal grantor agency regulation for this contract is 40 CFR 31 and 35, Subpart O.

12. Supersession

The DEQ and the CONTRACTOR agree that this and other appropriate clauses attributed to 40 CFR 33.1030 apply to all work to be performed under this contract and that those clauses attributed to 40 CFR 33.1030 supersede any conflicting provisions of this contract.

13. Price Reduction for Defective Cost or Pricing Data

- a. This clause shall be applicable to:
 1. Any contract negotiated between the DEQ and its CONTRACTOR in excess of \$10,000;
 2. Negotiated contract, amendments or change orders in excess of \$10,000 under a subcontract other than a formally advertised, competitively awarded, fixed price contracts; or,
 3. Any lower tier subcontract or purchase order in excess of \$10,000 under a subcontract other than a formally advertised, competitively awarded, fixed price subcontract. This clause does not apply to contracts awarded on the basis of effective price competition except with respect to those covered under paragraph a.2. above.
- b. The CONTRACTOR, and SUBCONTRACTOR where appropriate, assure that the cost and pricing data submitted for evaluation with respect to negotiation of prices for negotiated contracts, lower tier subcontracts and change orders are based on current, accurate and complete data supported by their books and records. If the DEQ or the federal grantor agency determines that any price (including profit) negotiated in connection with this contract, lower tier subcontract or amendment thereunder was increased by any significant sums because the data was incomplete, inaccurate or not current at the time of submission, then such price or cost or

profit shall be reduced accordingly and the contract shall be modified to reflect the reduction.

- c. If the responsible contracting official in the DEQ determines under paragraph b. of this clause that a price or cost or profit reduction should be made, the CONTRACTOR agrees not to raise the following matters as a defense:
1. The CONTRACTOR or SUBCONTRACTOR was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete and current cost or pricing data had been submitted.
 2. The responsible DEQ procurement official should have known that the cost or pricing data in issue were defective even though the CONTRACTOR or SUBCONTRACTOR took no affirmative action to bring the character of the data to the attention of the DEQ.
 3. The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.
 4. The CONTRACTOR or SUBCONTRACTOR did not submit a certificate of current cost or pricing data.
- d. Failure to agree on a reduction shall be subject to the remedies clause of the contract.

14. Remedies

Unless otherwise provided in this contract, all claims, counter-claims, disputes and other matters in question between the DEQ and the CONTRACTOR arising out of, or relating to, this contract or the breach of it will be decided in a court of competent jurisdiction within the State of Mississippi. Before pleading to the Mississippi judicial system at any level, the CONTRACTOR must exhaust all administrative remedies. A written complaint must first be sent to the executive director of DEQ. Pending non-resolution of the complaint at this point, successive administrative remedies will include bringing the complaint before the Mississippi Commission on Environmental Quality, with appeals from the Commission's decision following procedure as outlined by state statute.

15. Termination

- a. This contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this contract through no fault of the terminating party, provided that no termination may be effected unless the other party is given: a) not less than ten (10) calendar days written notice (delivery by certified mail, return receipt requested) of intent to terminate; and b) an opportunity for consultation with the terminating party prior to termination.
- b. This contract may be terminated in whole or in part in writing by the DEQ for its convenience, provided that the CONTRACTOR is given: a) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate; and b) an opportunity for consultation with the DEQ prior to termination.
- c. If termination for default is effected by DEQ, an equitable adjustment in the price provided for in the contract shall be made, but:
1. No amount shall be allowed for anticipated profit on unperformed services or other work; and,
 2. Any payment due to the CONTRACTOR at the time of termination may be adjusted to cover any additional costs to DEQ because of the CONTRACTOR's default. If termination for default is effected by the CONTRACTOR, or if termination for convenience is effected by DEQ, the equitable adjustment shall include a reasonable profit for services or other work performed. The equitable adjustment for any termination shall provide for payment to the CONTRACTOR for any services rendered and expenses incurred prior to the termination, in addition to termination settlement costs reasonably incurred by the CONTRACTOR relating to commitments which had become firm prior to the termination.
- d. Upon receipt of a termination action under paragraphs a. or b. above, the CONTRACTOR shall: 1) promptly discontinue all affected work (unless the notice directs otherwise); and, 2) deliver or

otherwise make available to DEQ all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the CONTRACTOR in performing this contract, whether completed or in process.

- e. Upon termination under paragraphs a. or b. above, DEQ may take over the work and may award another party a contract to complete the work under this contract.
- f. If, after termination for failure of the CONTRACTOR to fulfill contractual obligations, it is determined that the CONTRACTOR had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of DEQ. In such event, adjustment of the contract price shall be made as provided in paragraph c. of this clause.

16. Limitation of Cost

- a. The parties estimate that performance of this contract, exclusive of any fee, will not cost the DEQ more than, (1) the estimated cost specified in the schedule or, (2) if this is a cost-sharing contract, the DEQ's share of the estimated cost specified in the schedule. The CONTRACTOR agrees to use its best efforts to perform the work specified in the schedule and all obligations under this contract within the estimated cost, which, if this is a cost-sharing contract, includes both the DEQ's and the CONTRACTOR's share of the cost.
- b. The CONTRACTOR shall notify the contracting officer in writing whenever it has reason to believe that --
 - 1. The costs the CONTRACTOR expects to incur under this contract in the next 60 days, when added to all costs previously incurred, will exceed 75 percent of the estimated cost specified in the schedule; or
 - 2. The total cost for the performance of this contract, exclusive of any fee, will be either greater or substantially less than had been previously estimated.
- c. As part of the notification, the CONTRACTOR shall provide the contracting officer a revised estimate of the total cost of performing this contract.
- d. Except as required by other provisions of this contract, specifically citing and stated to be an exception to this clause --
 - 1. The DEQ is not obligated to reimburse the CONTRACTOR for costs incurred in excess of (i) the estimated cost specified in the schedule or, (ii) if this is a cost-sharing contract, the estimated cost to the DEQ specified in the schedule; and
 - 2. The CONTRACTOR is not obligated to continue performance under this contract (including actions under the Termination clause of this contract) or otherwise incur costs in excess of the estimated cost specified in the schedule, until the contracting officer, (i) notifies the CONTRACTOR in writing that the estimated cost has been increased, and (ii) provides a revised estimated total cost of performing this contract. If this is a cost-sharing contract, the increase shall be allocated in accordance with the formula specified in the schedule.
- e. No notice, communication, or representation in any form other than that specified in subparagraph (d) (2) above, or from any person other than the contracting officer, shall affect this contract's estimated cost to the DEQ. In the absence of the specified notice, the DEQ is not obligated to reimburse the CONTRACTOR for any costs in excess of the estimated cost or, if this is a cost-sharing contract, for any costs in excess of the estimated cost to the DEQ specified in the schedule, whether those excess costs were incurred during the course of the contract or as a result of termination.
- f. If the estimated cost specified in the schedule is increased, any costs the CONTRACTOR incurs before the increase that are in excess of the previously estimated cost shall be allowable to the same extent as if incurred afterward, unless the contracting officer issues a termination or other notice directing that the increase is solely to cover termination or other specified expenses.
- g. Change orders shall not be considered an authorization to exceed the estimated cost to the DEQ specified in the schedule, unless they contain a statement increasing the estimated cost.

- h. If this contract is terminated or the estimated cost is not increased, the DEQ and the CONTRACTOR shall negotiate an equitable distribution of all property produced or purchased under the contract, based upon the share of costs incurred by each.

17. Suspension of Work

- a. The DEQ may order the CONTRACTOR in writing to suspend, delay or interrupt all or any part of the work for such period of time as DEQ may determine to be appropriate for the convenience of DEQ.
- b. If the performance of all or any part of the work is suspended, delayed or interrupted for an unreasonable period of time by an act of DEQ in administration of this contract, or by DEQ's failure to act within the time specified in this contract (or if no time is specified, within a reasonable time), the DEQ shall make an adjustment for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay or interruption and modify the contract in writing. However, no adjustment shall be made under this clause for any suspension, delay or interruption to the extent:
 - 1. That performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the CONTRACTOR; or,
 - 2. For which an equitable adjustment is provided for or excluded under any other provision of this contract.
- c. No claim under this clause shall be allowed:
 - 1. For any costs incurred more than twenty (20) calendar days before the CONTRACTOR notified DEQ in writing of the act, or failure to act, involved (this requirement does not apply from a suspension order); and,
 - 2. Unless the amount claimed is asserted in writing as soon as practicable after the termination of such suspension, delay or interruption, but not later than the date of final payment under the contract.

18. Contract Changes

- a. The DEQ may, at any time, by written order, make changes within the general scope of the contract as to the services or work to be performed. If such changes cause an increase or a decrease in the CONTRACTOR's cost or time required to perform any services under this contract, whether or not changed by any order, DEQ shall make an equitable adjustment and modify this contract in writing. The CONTRACTOR must assert any claim for adjustment under this clause in writing within 30 days from the date it receives DEQ's notification of change, unless DEQ grants additional time before the date of final payment.
- b. No services for which the CONTRACTOR will charge an additional compensation shall be furnished without the written authorization of DEQ.

19. Anti-Kickback Procedures

- a. Definitions
 - 1. "Kickback", as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime CONTRACTOR, prime CONTRACTOR employee, SUBCONTRACTOR or SUBCONTRACTOR employee for the purpose of improperly obtaining or receiving favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.
 - 2. "Person", as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.
 - 3. "Prime contract", as used in this clause, means a contract or contractual action entered into by the DEQ for the purpose of obtaining supplies, materials, equipment or services of any kind.
 - 4. "Prime CONTRACTOR", as used in this clause, means a person who has entered into a prime contract with the DEQ.
 - 5. "Prime CONTRACTOR employee", as used in this clause, means any officer, partner, employee or agent of prime CONTRACTOR.

6. "Subcontract", as used in this clause, means a contract or contractual action entered into by a prime CONTRACTOR or SUBCONTRACTOR for the purpose of obtaining supplies, materials, equipment or services of any kind under a prime contract.
7. "SUBCONTRACTOR", as used in this clause,
 - (a) Means any person, other than the prime CONTRACTOR, who offers to furnish or furnishes any supplies, materials, equipment or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and
 - (b) Includes any person who offers to furnish general supplies to the prime CONTRACTOR or a higher tier SUBCONTRACTOR.
- b. The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from --
 1. Providing, or attempting to provide, or offering to provide any kickback;
 2. Soliciting, accepting or attempting to accept any kickback; or
 3. Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime CONTRACTOR to the DEQ or in the contract price charged by a SUBCONTRACTOR to a prime CONTRACTOR or higher tier SUBCONTRACTOR.
- c. Procedures
 1. The CONTRACTOR shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph b. of this clause in his own operations and direct business relationships.
 2. When the CONTRACTOR has reasonable grounds to believe that a violation described in paragraph b. of this clause may have occurred, the CONTRACTOR shall promptly report in writing the possible violation. Such reports shall be made to the Director of Administration of DEQ.
 3. The CONTRACTOR shall cooperate fully with any state or federal agency investigating a possible violation described in paragraph b. of this clause.
 4. The DEQ may
 - (a) Offset the amount of the kickback against any monies owed by DEQ under the prime contract; and/or,
 - (b) Direct that the prime CONTRACTOR withhold from sums owed a SUBCONTRACTOR under the prime contract, monies in the amount of the kickback. DEQ may order the monies withheld under paragraph c.4.(b) of this clause be paid over to DEQ unless DEQ has already offset those monies under paragraph c.4.(a) of this clause. In either case the prime CONTRACTOR shall notify DEQ when the monies are withheld.
 5. The CONTRACTOR agrees to incorporate the substance of this clause, including paragraph c.5. but excepting paragraph c.1., in all subcontracts under this contract.

20. Responsibility of the Contractor

- a. The CONTRACTOR is responsible for the professional quality, technical accuracy, timely completion and coordination of all designs, drawings, specifications, reports, drillings, interpretations of drillings, analyses and other services furnished by the CONTRACTOR under this contract. If the contract involves environmental measurements or data generation, the CONTRACTOR shall comply (whether or not Environmental Protection Agency funds are involved in the contract) with Environmental Protection Agency quality assurance requirements in 40 CFR 30.503. The CONTRACTOR shall, without additional compensation, correct or revise any errors, omissions or other deficiencies in his designs, drawings, specifications, reports and other services.
- b. The CONTRACTOR shall perform the professional services necessary to accomplish the work specified in this contract in accordance with this contract and if Environmental Protection Agency funds

are used in whole or in part to finance the work, the services shall be provided in accordance with applicable Environmental Protection Agency requirements in effect on the date of execution of the contract.

21. Final Payment

Upon satisfactory completion of the work performed under this contract, as a condition before final payment under this contract or as a termination settlement under this contract, the CONTRACTOR shall execute and deliver to DEQ a release of all claims against DEQ arising under, or by virtue of, this contract, except claims which are specifically exempted by the CONTRACTOR to be set forth therein. Unless otherwise provided in the contract, by state law or otherwise expressly agreed to by the parties in this contract, final payment under this contract or settlement upon termination of this contract shall not constitute waiver of DEQ's claims against the CONTRACTOR or his sureties under this contract or applicable performance and payment bonds.

22. Equal Opportunity

a. During performance of this contract, the CONTRACTOR agrees as follows:

1. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin.
2. The CONTRACTOR shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to:
 - (a) Employment,
 - (b) Upgrading,
 - (c) Demotion,
 - (d) Transfer,
 - (e) Recruitment or recruitment advertising,
 - (f) Layoff or termination,
 - (g) Rates of pay or other forms of compensation, and
 - (h) Selection for training, including apprenticeship.
3. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment such notices as are provided by the DEQ setting forth the provisions of this equal opportunity clause.
4. The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
5. The CONTRACTOR will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract, or understanding, the notice to be provided by DEQ advising the labor union or worker's representative of the CONTRACTOR's commitments under this equal opportunity clause, and shall post copies of the notice in conspicuous places easily seen by employees and applicants for employment.
6. The CONTRACTOR will comply with Executive Order 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor.
7. The CONTRACTOR will furnish the DEQ all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto.
8. The CONTRACTOR shall permit access to its books, records and accounts by DEQ and the Office of Federal Contract Compliance (OFCCP) for the purpose of investigation to ascertain the CONTRACTOR's compliance with the applicable rules, regulations and orders.
9. In the event of the CONTRACTOR's noncompliance with the equal opportunity clause or with any of the said rules, regulations or orders, this contract may be canceled, terminated or suspended, in whole or in part, and the CONTRACTOR may be declared ineligible for further DEQ contracts, under the procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked against the CONTRACTOR

as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

10. The CONTRACTOR will include the provisions of paragraph a.1. through a.10. of this clause in every subcontract or purchase order that is not exempted by the rules, regulations and orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each SUBCONTRACTOR or vendor.

11. The CONTRACTOR will take such action with respect to any subcontract or purchase order as DEQ may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the CONTRACTOR become involved in, or is threatened with litigation with a SUBCONTRACTOR or vendor as a result of such direction by DEQ, the CONTRACTOR may request the state and/or the United States, if federal monies are used in whole or in part to fund the contract, to enter into the litigation to protect the interest of the state or the United States.

23. Affirmative Action for Handicapped Workers

a. During performance of this contract, the CONTRACTOR agrees as follows:

1. The CONTRACTOR will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified.

2. The CONTRACTOR shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their physical or mental handicap. This shall include, but not be limited to:

- (a) Employment,
- (b) Upgrading,
- (c) Demotion,
- (d) Transfer,
- (e) Recruitment or recruitment advertising,
- (f) Layoff or termination,
- (g) Rates of pay or other forms of compensation, and
- (h) Selection for training, including apprenticeship.

3. The CONTRACTOR agrees to comply with applicable Executive Orders, rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Rehabilitation Act of 1973, 29 U.S.C. Sections 792 through 794, as amended, and Title I of the Americans with Disabilities Act of 1990, 42 U.S.C. Section 12101.

24. Discrimination Prohibited

No person in the United States shall, on the grounds of race, creed, color, sex, or national origin, be excluded from participation in, be denied the proceeds of, or be subject to discrimination in the performance of this contract. CONTRACTOR will comply with the Civil Rights Act of 1964, as amended, and any regulations promulgated thereto. CONTRACTOR shall comply with Executive Order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375 and as supplemented in Department of Labor regulations (41 C.F.R., Part 60).

25. Debarment

a. General

It is DEQ's and the federal grantor agency's policy to do business only with participants which properly use federal assistance. Thus the federal grantor agency, and those states using federal monies to fund contracts, shall deny participation in contracts by those who have been debarred or suspended under 40 CFR 32. Debarment and suspension shall be used to protect the interests of the DEQ and are not intended as sanctions, penalties or forms of punishment.

b. Causes for Debarment.

A person or its affiliate may be debarred for the following:

1. Conviction of or a civil or nolo contendere judgement obtained for:

- (a) Criminal commission of fraud, embezzlement, theft, forgery, bribery, falsification or destruction of records, or receiving stolen property;
 - (b) Violation of law or regulation relating to personal or organizational conflict of interest as an incident to obtaining, attempting to obtain, or in the performance of, federally or state assisted programs or public contracts; or
 - (c) Violation of federal or state antitrust statutes arising out of submission of applications, bids or proposals.
2. Involvement in bribery or other unlawful or corrupt practices on a public contract or publicly-assisted project.
 3. A willful or serious failure to perform, or a recent history of substantial non-compliance with the terms of one or more federal assistance agreements, contracts or subagreements.
 4. Violation of any contractual provision against receipt of contingent fees.
 5. Record of noncompliance with rules and regulations governing public assistance and contracts so as to indicate a careless attitude toward good faith compliance.
 6. Debarment by any federal or State of Mississippi agency.
 7. Failure to pay debts to the federal grantor agency that have been finally adjudicated and that are not subject to a good faith defense by the debtor.
 8. Doing business on any federally funded project, or portion thereof, with a person, who, at the time of the initiation of such business, was listed on the Master List as specified in 40 CFR 32.400 and it is known or should have been known that the person was on the list.
 9. For any other causes of serious and compelling nature indicating lack of business integrity or competency which may be determined to justify debarment.
- c. CONTRACTORS and SUBCONTRACTORS must not make any award or permit any award at any tier to any party which is debarred or suspended (see 40 CFR 32.300) or is otherwise excluded from or is ineligible for participation in federal assistance programs under Executive Order 12549, "Debarment and Suspension". Failure to abide by this clause shall be adequate grounds for termination of this contract for default.

26. Patents and Copyrights

a. Notice and Assistance

1. The CONTRACTOR must report to DEQ, promptly and in reasonable written detail, each known notice or claim of patent or copyright infringement occurring under this contract.
2. In the event of any claim or suit against the state or federal government, an account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed hereunder, the CONTRACTOR must furnish to DEQ, when requested, all evidence and information in possession of the CONTRACTOR pertaining to such suit or claim. Such evidence and information will be furnished at the expense of DEQ except where the CONTRACTOR has agreed to indemnify DEQ.
3. The CONTRACTOR must include in each subcontract in excess of \$10,000 a clause substantially similar to the foregoing provisions.

b. Authorization and Consent

The DEQ and the U.S. Environmental Protection Agency, if this is an EPA funded contract, gives its authorization and consent for all use and manufacture of any invention described in and covered by a patent held by the State of Mississippi or the United States in the performance of this contract and any subcontract.

c. Rights in Data and Copyrights.

1. The term "subject data" as used in this clause includes writing, technical reports, sound recordings, magnetic recordings, computer programs, computerized data bases, data bases in hard copy, pictorial reproductions, plans, drawings, including engineering or manufacturing drawings, specifications or other graphical representations, and works of any similar nature (whether or not copyrighted) which a CONTRACTOR submits or which DEQ specifies to be delivered under this contract or which a CONTRACTOR develops or produces and DEQ pays for under this contract.
2. Except as may be otherwise provided in this contract, when publications, films or similar materials are developed directly or indirectly from a contract funded wholly or in part by EPA or the State of Mississippi, the author is free to arrange for copyright without approval. However such materials shall be subject to the provisions of 40 CFR 30.518. The CONTRACTOR agrees to and does hereby grant to the State of Mississippi and to the federal government, and to its officers, agents and employees acting within the scope of their official duties, a royalty free, nonexclusive, and irrevocable license throughout the world for state or federal governmental purposes to publish, translate, reproduce, deliver, perform, dispose of and to authorize others so to do, all subject data, or copyright material based on such data, covered by copyright now or in the future.
3. The CONTRACTOR shall not include in the subject data any copyright matter without the written approval of DEQ, unless he provides DEQ with the written permission of the copyright owner for the state or federal government to use the copyrighted matter in the manner provided in paragraph 3.b. above.
4. Nothing contained in this clause shall imply a license to the state or federal government under any patent or be construed as affecting the scope of any license or other rights otherwise granted to the state or federal government under any patent.
5. Unless otherwise limited below, the state or federal government may, without additional compensation to the CONTRACTOR, duplicate, use and disclose in any manner and for any purpose whatsoever, and have others so do, all subject data.
6. Notwithstanding any provisions of this contract concerning inspection and acceptance, the state and federal government shall have the right at any time to modify, remove, obliterate, or ignore any marking restricting disclosure of subject data if the marking is not authorized by the terms of this contract.
7. Data need not be furnished for standard commercial items or services which are normally sold, or have been sold, or offered to the public commercially by any supplier and which are incorporated as component parts in or to be used with the product or process being developed or investigated under this contract, if in lieu thereof identification of source and characteristics (including performance specifications, when necessary) sufficient to enable the state or federal government to procure the part or practice the process, or acquire an adequate substitute, are furnished.
8. In addition to any data specified elsewhere in this contract to be furnished to DEQ, the CONTRACTOR shall retain and, upon written request of DEQ at any time during the life of this contract or within two years after final payment, deliver any subject data not previously delivered.

27. Publication and Publicity

- a. CONTRACTOR may publish results of its participation pursuant to this contract, provided that (1) such publications acknowledge that the program is supported by funds granted by the federal grantor agency through DEQ, and (2) that three (3) copies of each publication are furnished to both the federal grantor agency and the DEQ.
- b. The acknowledgement will include the federal grantor agency grant number under which the contract is awarded and the DEQ contract number as well as the percentage on the program financed with federal money and the dollar amount of federal funds for the program.

- c. Any publication printed by the CONTRACTOR as a result of this contract will contain a statement placed conspicuously on the outside of the publication stating the cost per copy and, if applicable, will include a notice providing as follows:

NOTICE

This publication results from work sponsored by an agency of the State of Mississippi through a grant from the United States Government. Neither the State of Mississippi, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the State of Mississippi or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the State of Mississippi or any agency thereof.

28. Confidential Records

In order for CONTRACTOR to perform the services, DEQ shall grant CONTRACTOR access to all files pertaining to the subject matter of this agreement. However, CONTRACTOR, for itself and all personnel retained by it for the purposes of this agreement, hereby accepts and agrees to be bound by the provisions of Section 17-17-27, Mississippi Code Annotated, (1972), pertaining to unauthorized disclosure of confidential information.

29. Energy Efficiency

The CONTRACTOR shall comply with mandatory standards and policies concerning energy efficiency as contained in the state's energy conservation plan promulgated in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

30. Small, Minority, and Women's Businesses

It is the federal grantor agency's policy to award a fair share of contracts to small, minority and women's businesses. CONTRACTORS awarded contracts with full or partial federal funding will abide by the following affirmative steps and will include this clause in any subcontracts at any tier:

- a. Including small, minority, and women's businesses on solicitation lists;
- b. Assuring that small, minority and women's businesses are solicited whenever they are potential sources;
- c. Dividing total requirements, when economically feasible, into small tasks or quantities to permit maximum participation of small, minority and women's businesses;
- d. Establishing delivery schedules, where the requirements of the work permits, which will encourage participation by small, minority and women's businesses;
- e. Using the services and assistance of the Small Business Administration and the Office of Minority Business Enterprise of the U.S. Department of Commerce, as appropriate; and
- f. Including these steps in any subcontracts awarded under this contract.

31. Political Activity Prohibited

None of the funds, materials, property, or services contributed by DEQ or CONTRACTOR under this contract shall be used in the performance of this contract for any partisan political activity, or to further the election or defeat of any candidate for public office.

32. Religious Activity Prohibited

There shall be no religious worship, instruction, or proselytization as part of or in connection with the performance of this contract.

33. Compliance with Federal, State and Local Laws

CONTRACTOR shall comply with all applicable laws and regulations of the United States of America or any agency thereof, the State of Mississippi or any agency thereof, or any local government or political subdivision that may be affected by this contract.

34. Violating Facilities

The CONTRACTOR shall comply with all applicable standards, orders or requirements issued by the federal grantor agency or the Mississippi DEQ under Section 305 of the Clean Air Act (42 U.S.C. 1857(h)), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and EPA regulations (40 CFR Part 15) which prohibits the use under nonexempt federally funded contracts, loan or grants of facilities on the EPA List of Violating Facilities.

35. Certification Regarding Lobbying

The undersigned certifies, to the best of his or her knowledge and belief that:

- a. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress in connection with the awarding of any federal contract, state contract funded in whole or in part with federal funds, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan or cooperative agreement.
- b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or an employee of Congress, or an employee of a member of Congress in connection with this federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
- c. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

WITNESS THE SIGNATURE OF THE PARTIES, this 3rd day of July, 1996.

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Kristi Hales
for G. I. Palmer, Jr.
Executive Director

7/3/96
Date

Witness

MISSISSIPPI STATE UNIVERSITY

Earl Alley
Dr. Earl Alley
State Chemist

6-28-96
Date

Anna C. Henson
Witness

Ralph E. Powe
Dr. Ralph E. Powe
Vice-President for Research

6/28/96
Date

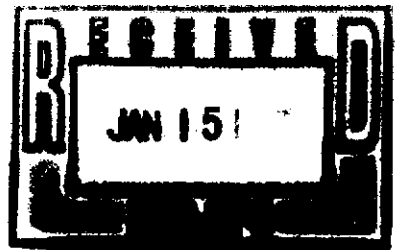
Johnny Prather
Witness

ADAMS AND REESE

*Registered Limited Liability Partnership
Attorneys and Counselors at Law*

4500 ONE SHELL SQUARE
NEW ORLEANS, LOUISIANA 70139

Telephone: (504) 581-3234
Facsimile: (504) 566-0210
Internet: info@arlaw.com



NEW ORLEANS
BATON ROUGE
MOBILE
HOUSTON
WASHINGTON, D.C.

GLEN M. PILIÉ
(504) 585-0260
piliem@arlaw.com

January 14, 1997

FILE COPY

Mr. Russell Smith
Uncontrolled Sites Section Supervisor
Mississippi Department of Environmental Quality
P.O. Box 10385
2380 Highway 80 West
Jackson, Mississippi 39204

Federal Express

Re: Former Gulf States Creosoting Site Hattiesburg, Mississippi
Quality Assurance Project Plan
Our File: 298-240

Dear Mr. Smith:

Enclosed please find a Quality Assurance Project Plan by Michael Pisani & Associates, Inc. for the above-referenced matter.

Very truly yours,

ADAMS AND REESE

BY:

GLEN M. PILIÉ

Attorney for:

Kerr-McGee Chemical Corporation

GMP/js

cc: Mr. W. O. Green, III (w/encl.)
Mr. Walter Dukes (w/encl.)
Mr. Jon Mark Weathers (w/encl.)

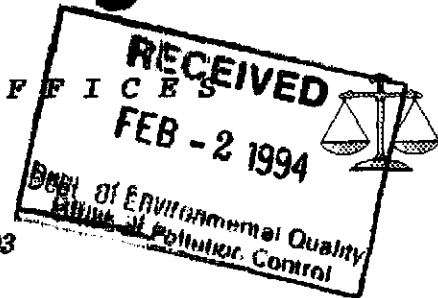
Enclosure

JAN 15



VAN SLYKE LAW OFFICES

ATTORNEYS AT LAW
P. O. BOX 1506
808 W. PINE STREET
HATTIESBURG, MS 39403



J. B. VAN SLYKE, JR.
GREGORY J. ALSTON

January 31, 1994

TELEPHONE: (601)544-7514
(601)544-7520
FAXCIMILE: (601)545-2335

LEGAL ASSISTANT
NANCY SASAKI

FILE COPY

Mr. Ken Whitten
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

RE: GULF STATES CREOSOTE - HATTIESBURG PUBLIC SCHOOL DISTRICT

Dear Mr. Whitten:

Per our conversation, I enclose herewith copy of Complaint which details the connection with the Defendants, Kerr-McGee and Union Camp. I call your attention in particular to paragraph 9, 10 and 11, which connects up both Defendants. I notice that there were various mergers, etc., which connected up the corporations, which documents I can produce.

I am confident that both Kerr-McGee and Union Camp had an interest in Gulf States Creosote either directly or through after acquired property and mergers.

I hope this information is helpful.

Very truly yours,

J. B. Van Slyke, Jr.

JBVjr/ns
enclosures

IN THE CHANCERY COURT OF FORREST COUNTY, MISSISSIPPI

HATTIESBURG PUBLIC SCHOOL DISTRICT

PLAINTIFF

VERSUS

NO. _____

KERR-McGEE CHEMICAL CORPORATION,
A Delaware Corporation

Defendants

COMPLAINT

COMES NOW, the Plaintiff, Hattiesburg Public School District, and files this its Complaint against the Defendant, Union Camp Corporation and Kerr-McGee Chemical Corporation, in assault and battery, trespass to land, private nuisance, public nuisance, strict liability for ultra-hazardous activity, negligence, inverse condemnation, damage to property in violation of the Mississippi Constitution, and in other tortious wrongs warranting relief, and imposition of damage. In support of the Complaint, the Plaintiff would show unto the Court as follows:

A.

PARTIES

1.

The Hattiesburg Public School District was created and is existing by virtue of the laws of the State of Mississippi.

2.

The Defendant, Union Camp Corporation is a foreign corporation whose predecessor has committed a tort, in whole or in part, in the State of Mississippi, and who is now responsible therefore, and may

be served with process at its corporate offices at 1600 Valley Road, Wayne, New Jersey, 07470, by U.S. mail, return receipt requested.

3.

The Defendant, Kerr-McGee Chemical Corporation, is a foreign corporation whose predecessor has committed a tort, in whole or in part, in the State of Mississippi, and who is now responsible therefor, and may be served with process by serving a copy of this pleading on its attorney Honorable Jon Mark Weathers.

B.

FACTS

4.

Plaintiff hereby incorporates each of the foregoing paragraphs as though they were here stated.

5.

Plaintiff would show that under the laws of the State of Mississippi, it is the owner/trustee of 16th Section property located in the City of Hattiesburg, Forrest County, Mississippi, upon which there was once operated a creosote plant.

6.

During the mid 1930's, Gulf State Creosoting Company, a Delaware corporation, commenced doing business on 16th Section property now located in the City of Hattiesburg, Forrest County, Mississippi, consisting of approximately 84 acres and more fully described in Exhibit "A" attached hereto and made a part hereof.

7.

That Gulf States operated and treated for preservation of

cross ties and all other timbers; handled and preserved forest products; purchased preservatives for the manufacturing of said products; manufactured and purchased tar products, creosote, chemicals, spirits, acids, and alkalies and their respective derivatives, compounds, products, by-products, and residuals.

8.

That Gulf States operated at said site until the late 1950's at which time the un-expired portion of that certain 16th Section lease was conveyed to American Creosoting Corporation, a Delaware corporation, of which Gulf States was a wholly owned subsidiary, liquidating Gulf States and transferring all assets and American assuming all liabilities. Operations about that time were ceased on said 16th Section property. That attached hereto and marked as Exhibit "B" is a true and correct copy of the conveyance hereinabove identified.

9.

Upon information and belief during the 1950's American Creosoting was a subsidiary of Union Camp. That in any event Union Camp through predecessors and subsidiaries had a direct interest in American Creosoting Corporation and Gulf States Creosoting.

10.

That on or about April 16, 1965, American Creosoting Corporation changed its name to Moss-American, Inc., which is reflected by the amended certificate of authority on file in the office of the Secretary State of the State of Mississippi, and attached hereto and marked as Exhibit "C".

11.

Plaintiff would show that Moss-American, Inc., merged with Kerr-McGee Chemical Corporation on or about August 15, 1974, at a time when Kerr-McGee owned all of the issued and outstanding shares of each class of the stock of Moss-American, Inc., a copy of the certificate of ownership and merger being attached hereto and marked as Exhibit "D". That all of the subsidiary's obligations were assumed by Kerr-McGee Chemical Corporation.

12.

That Gulf States Creosote, predecessor and or subsidiary to Defendants herein, operated a wood processing plant and among other things were engaged in wood preserving processes over the years, using various chemicals and pollutants containing or resulting into the following: Naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(K)fluoranthene, benzo(a)pyrene, and other chemicals. Further, nineteen polynuclear aromatic hydrocarbons have been identified at the site location.

13.

Plaintiff would show that Gulf States for many years introduced pollutants into the soil, sediment and ground water, posing a hazard to the public. Plaintiff would show that while the hazardous substances have probably not reached the ground water supply, there is a serious concern about an aquifer. Plaintiff would further show that hazardous substances are in close proximity to the first water bearing unit of the aquifer of concern and could

migrate to the public water supply over a period of years.

14.

Plaintiff would show that said pollutants have been persistent in a source of continuous contamination in the soil, sediment and ground water causing damage thereto.

15.

Plaintiff would show that the release of said chemicals and pollutants has provided a source of chronic pollution and has through biological magnification created a hazard.

16.

Plaintiff would show that the presence of said contaminants disrupts the stable ecological relationships and has an adverse effect on the environment.

17.

Plaintiff would show that through the years there has been releases of contaminants which has magnified the build up in and upon the land of Plaintiff causing damage.

C.

INJURIES SUFFERED

18.

Plaintiff incorporates each of the foregoing paragraphs as though they were stated herein.

19.

Plaintiff has suffered substantial decreased property value.

20.

Plaintiff is now deprived of the reasonable rental or use value because of Gulf States' use of its property as an industrial

hazardous waste disposal facility and site.

21.

Plaintiff now suffers and will suffer in the future with annoyance and inconvenience due to the acts of the predecessors and/or subsidiary of the Defendants.

22.

Defendants have wrongfully and without permission, entered, taken, and damaged the property of Plaintiff by converting it for the purpose of industrial hazardous waste disposal.

23.

That Defendants should be required to pay the Plaintiff clean up cost in this action.

24.

The injuries of the Plaintiff will continue in the future and it should be entitled to damages therefore.

25.

Each and every act and omission on behalf of Defendants complained of herein are the proximate cause of the above stated injuries to the Plaintiff.

D.

CAUSE OF ACTION

26.

In each of the following causing of action, the Plaintiff hereby incorporates each and every allegation contained in the preceding paragraphs.

COUNT ONE

27.

As a further and alternate grounds for relief, the Plaintiff has a cause of action for continuing assault and battery using hazardous substances. Defendants predecessor and/or subsidiary brutally, and wrongfully discharged, disbursed bio-accumulative compounds onto and in the property of Plaintiff, which wrongful acts the Defendants knew or should have known would affect the environment and pose a threat to the population without their informed consent.

28.

As a consequence, the Court should order the Defendants to pay damages therefore.

COUNT TWO

29.

As a further and alternative grounds for relief, the Plaintiff has a cause of action for past, continuing and prospective private nuisance.

30.

The operation of the Defendants predecessors and/or subsidiary business and hazardous waste disposal practices, is a private nuisance in that it has caused and is causing Plaintiff injuries, and damages and will cause it further injuries unless abated.

31.

As a consequence, the Court should order the Defendants to pay damages therefore.

COUNT THREE

32.

As a further and alternate grounds of relief, the Plaintiff has a cause of action for continuing trespass to the land.

33.

The continuous introduction of chemicals to the land of the Plaintiff and the magnification thereof has created a continuous trespass on Plaintiff's property.

34.

That Defendants trespasses were the proximate cause of Plaintiff's injuries and further deprives the Plaintiff of the reasonable use and value of its land and a decrease in value therefore.

35.

As a consequence, the Court should order the Defendants to pay damages therefore.

COUNT FOUR

36.

As a further and alternate grounds of relief, the Plaintiff has a cause of action for public nuisance.

37.

Defendants wrongfully damaged the property of the Plaintiff and as a consequence the Court should order the Defendants to pay damages therefore.

COUNT FIVE

38.

As a further and alternate grounds of relief, the Plaintiff has a cause of action for damages and strict liability resulting from ultra-hazardous activities.

39.

Defendants operation in discharging hazardous waste onto the property of Plaintiff amount to ultra-hazardous activities for which the Defendants are strictly liable for all of Plaintiff's injuries and resulting damages from said activities.

40.

As a consequence the Court should require the Defendants to pay damages therefore.

COUNT SIX

41.

As a further and alternate grounds of relief, Plaintiff has a cause of action in negligence.

42.

Defendants owed the Plaintiff multiple duties not to cause the injuries complained of. The Defendants breached said duties and Plaintiff suffered injuries as a proximate result therefrom; alternatively, Defendants conduct was a substantial contributing factor in Plaintiff's injuries.

43.

The aforesaid duties owed to the Plaintiff that were breached by the Defendants, cumulatively or in the alternative, include: the

duty to obtain Plaintiff's informed consent before exposing the property to hazardous waste; the duty to obtain an easement or license, or to require that said easement or license be obtained before using or permitting the use of Plaintiff's property as a hazardous waste disposal facility and site; the duty to investigate, to test, and to determine the constituents and effects of the Defendants waste and chemicals before discharging same on the property of the Plaintiff; the duty to use less hazardous, feasible and affordable alternative means of disposing said hazardous waste; the duty to take remedial measures such as, but not limited to, clean up of previous pollution on land.

44.

As a consequence, the Court should order the Defendants to pay damages therefore.

COUNT SEVEN

45.

In the alternative the Plaintiff has a cause of action in inverse condemnation.

46.

The acts of the Defendants amounted to taking the Plaintiff's property without just compensation, as required by the Mississippi Constitution Article III, Section 17. Said taking proximately caused the Plaintiff's consequential injuries. Furthermore, said taking did not precede the payment of just compensation, as required by said Constitutional provision.

47.

As a consequence, the Court should order the Defendants to pay

the Plaintiff the damages therefore.

48.

Plaintiff would show that this court should issue a mandatory injunction requiring the Defendants or either of them and all other extraordinary relief in equity, to perform clean up operations under the supervision of the Mississippi Department of Environmental Quality or such other appropriate agency the Court deems necessary at the cost of the Defendants.

WHEREFORE, PREMISES CONSIDERED, the Plaintiff brings this its suit and demands Judgment of and from the Defendants, Union Camp Corporation and/or Kerr-McGee Chemical Corporation, jointly and severely in an appropriate amount compensating Plaintiff for the loss of value of said property, damages for annoyance and inconvenience, expenses involved in this litigation including attorney's fees. Further, that this Court will issue an injunction or other appropriate equitable relief requiring the Defendants to perform clean up operations under appropriate supervision.

Respectfully submitted,

OF COUNSEL FOR PLAINTIFF

J. B. VAN SLYKE, JR.
VAN SLYKE LAW OFFICE
P. O. BOX 1506
HATTIESBURG, MS 39403-1506
(601) 544-7514
MSB# 6588



Jim Walter HOMES
INC.

4576 Hwy. 80 West • P.O. Box 10418 • Phone 601—922-3061
JACKSON, MISSISSIPPI 39289-0418

FILE COPY

September 2, 1993

Mississippi Department of Environmental Quality
2380 Highway 80 West
Jackson, Mississippi 39204

Dear Sirs:

We would like to request that you make available the Hazardous Waste file relating to Gulf States Creosote property, Section 16, Township 4 North, Range 13 West, Forrest County, Hattiesburg, Mississippi.

Thank you for your help in this matter.

Sincerely,

Jim Walter Homes, Inc.

Lewis Turner
Assistant Regional Manager

LT/bc

SAMPLE & ASSOCIATES, INC.

2600 INSURANCE CENTER DR.
JACKSON, MISSISSIPPI 39216

PHONE: (601) 362-2863
FAX: (601) 362-7427

August 30, 1993

FILE COPY

Ms. Frances Grillo
Department of Environmental Quality
2380 Highway 80 West
Jackson, MS 39289

Dear Ms. Grillo:

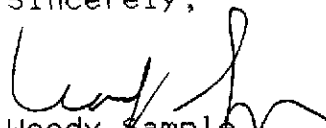
Subject: Request for File Review
Gulf States Creosote
Hattiesburg (Forrest County), MS

As per Jimmy Wilson's telephone conversation with you, this is to request permission to review your files pertaining to the above company's operations in Forrest County.

The purpose of this review is to satisfy environmental requirements associated with a proposed Community Development Block Grant Project to be undertaken by the Forrest County Board of Supervisors. This project involves the rehabilitation and conversion of a vacant commercial building into offices for the county's Department of Human Services. Based on preliminary information, this building is located on or near the site previously used by Gulf States Creosote and we must determine if there are any adverse conditions which could significantly effect this undertaking.

Thank you for your cooperation and if there are any problems in complying with this request, please call me at the above number.

Sincerely,


Woody Sample
Project Administrator



FILE COPY

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

February 7, 1992

Mr. James Snowden
Industrial Park, Inc.
7284 U. S. 49 Highway
Hattiesburg, MS 39402-9158

Subject: SI-Phase II Report
Gulf State Creosote
Hattiesburg, MS
MSD985967199

Dear Mr. Snowden:

Enclosed, as you requested, is a copy of the above referenced report submitted to EPA on January 15, 1992. EPA will determine if this site requires further action under the Federal Superfund program. This office could also require further action pursuant to state pollution control laws.

Please contact me at (601) 961-5065 if you have any questions.

Sincerely,

Jim Hardage

Jim Hardage
CERCLA Unit

JH:MS_mes7

Enclosure



FILE COPY

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

January 17, 1992

Mr. J.B. VanSlyke
P.O. 1506
Hattiesburg, MS 39401

Subject: SI-Phase II Report
Gulf State Creosote
Hattiesburg, MS
MSD985967199

Dear Mr. VanSlyke:

Enclosed, as you requested, is a copy of the above referenced report submitted to EPA on January 15, 1992. EPA will determine if this site requires further action under the Federal Superfund program. This office could also require further action pursuant to state pollution control laws.

Please contact me at (601) 961-5065 if you have any questions.

Sincerely,

Jim Hardage

MTS:Gulf_State

Enclosure



STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

January 17, 1992

FILE COPY

Mr. Greg Caraway
MS State Dept. of Health
Division of Water Supply
P. O. Box 1700
Jackson, MS 39215-1700

Dear Greg:

Enclosed, per our telephone conversation on January 16, 1992, is a copy of test results on a water sample collected October 15, 1991, from one of the Hattiesburg public water supply wells.

The sample was collected relative to a sampling investigation of the old Gulf State Creosote site. The well is located about one and one-half miles east of the site and was identified as Well #1 by the local water works person. It is the shallowest of a cluster of four wells located at the Water Works off Williams Street.

The sample was analyzed for semi-volatile organic compounds on the EPA Target Compound List (TCL). No TCL compounds were detected. However, two peaks not on the TCL or the EPA Appendix IX list were tentatively identified as substituted chlorinated benzenes at an estimated concentration of ten (10) micrograms per liter.

Please call me at 961-5065 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Jim Hardage".

Jim Hardage
CERCLA Unit
Hazardous Waste Division

Enclosure

cc: Joe Brown (w/enclosure)



STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

FILE COPY

January 16, 1991

Mr. Brian Farrier
Site Investigation and Support Branch
Waste Management Division - Region IV
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, GA 30365

Subject: SI-Phase II Report
Gulf State Creosote
Hattiesburg, MS
MSD985967199

Dear Brian,

Enclosed is the referenced report. Please contact Michael Slack or me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Jim Hardage".

Jim Hardage

MTS:Brian

PHONE CONVERSATION RECORD

Talked with William McDaniel Date _____ Time _____ a.m. p.m.
Of EPA Athens Lab - Organic Chemistry Phone No. 404 546 3112
(Company)
Re Gulf State Creosote

I placed call Party called
My message reply _____

Question: If groundwater samples contain sediment, how should the lab analyze the sample?
Answer: Discard the sediment and analyze the water fraction.
This was relayed to Doug Dollar, MSCL.

Party's message reply _____

Action or follow-up necessary _____

Refer to _____ File
Signed Jim Hardage



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

ENVIRONMENTAL SERVICES DIVISION
ATHENS, GEORGIA 30613



October 11, 1991

Mr. Jim Hardage
Mississippi Department of Environmental Quality
Office of Pollution Control (MS OPC)
P.O. Box 10385
Jackson, Mississippi 39289

FILE COPY

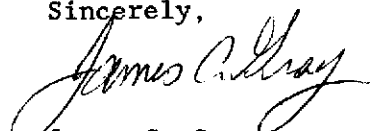
Dear Mr. Hardage:

The study plan for the screening site inspection (SSI) phase II sampling at Gulf State Creosote has been reviewed. The following comments on the plan are offered for your consideration.

- Figure 2 needs to show the site boundaries and the areas of suspected contamination derived from the site's operational history and from the emergency removal conducted at the location.
- There are two sample locations in Figure 2 labeled GS-TW-01. It is assumed that the location nearest the river should be 02.
- If the site geology shows that groundwater is fifteen feet below the surface in sandy soil, is it really necessary to use a drill rig to bore the temporary wells?
- Two temporary wells and one subsurface soil sample within the site boundaries do not appear adequate to characterize this site. There is not sufficient information given in the plan (see first comment) to adequately determine a sampling strategy, but it does not seem possible that the number of samples proposed could serve to address more than an area fifty feet by fifty feet. If the area of concern is larger than that area, more samples are in order. Also, it is recommended that surface soil samples be included in the study.

If you have any questions concerning this review or the comments offered, please call me at 404/546-3308.

Sincerely,


James C. Gray

FILE COPY



US-EPA
 Waste Management Division
 Emergency Response & Removal Branch
 345 Courtland Street, N.E.
 Atlanta, Georgia 30365

404/347-3931 commercial
 404/347-4464 FAX
 257-3931 FTS
 404/347-4062 24-hr. emergency No.

FACSIMILE TRANSMISSION SHEET

Date: 10/14/91 Number of Pages: 8 (including cover sheet)

TO: Jim Harbage/Mike Slack Telephone No. _____

Address: _____ FAX No. 601/354-6612

FROM: Don Rigger

SPECIAL INSTRUCTIONS: Call 404/489-7319 w/ any problems or questions

Note: If message is received poorly or other errors are detected, please contact _____ in our office at the above listed telephone numbers (except the 24-hr. No.)... Thank you.

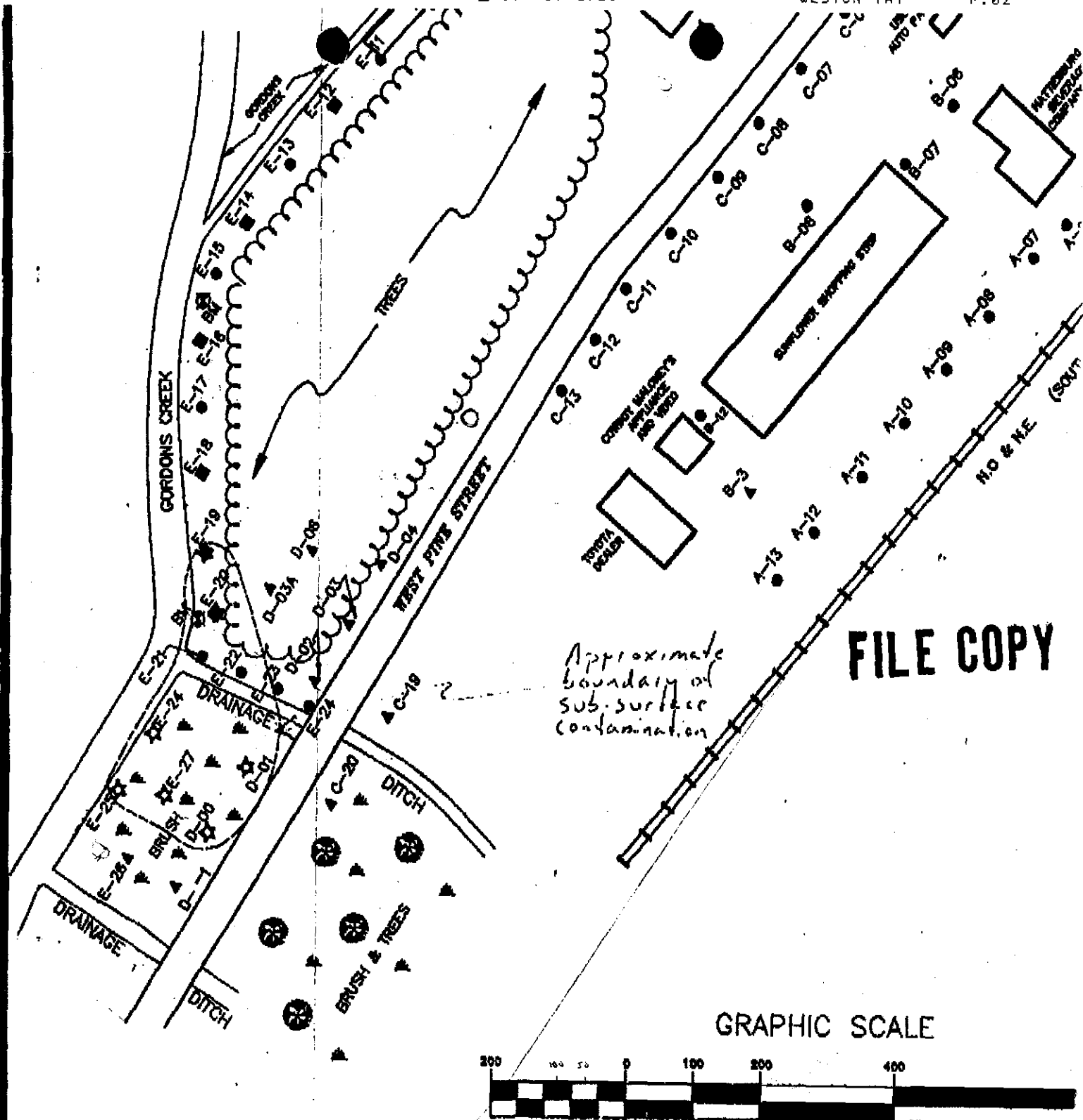


FIGURE 2
SAMPLE LOCATION MAP
GULF STATE CREOSOTE

LEGEND	
☆	- HOT BORI
●	- SOIL GAS
▲	- SOIL BOR
■	- SOIL GAS
⊠	- BENCHMA
- - -	- APPROXIMA
	- ZONE BOU

TABLE 2. SUMMARY OF SOILS ANALYSIS

GULF STATES CREOSOTE SITE
HATTIESBURG, MISSISSIPPI
JANUARY, 1990

FILE COPY

Parts per million (ppm)

Compound Name	Sample Location Sample Depth	B0 2.5 0-12 in.	D00 5 ft.	D00 8 ft.	D01 5 ft.	D01 8 ft.	E20 4 ft.
Naphthalene	*		178	354	280	148	4.1J
2-Methylnaphthalene	*		99	197	460	82	3.6J
1-Methylnaphthalene	*		72	104	340	45	*
Biphenyl	*		22J	55	9J	24	*
2,6-Dimethylnaphthalene	*		72	66	53	28	*
Aconaphthylene	*		4.4J	4.2J	2.3J	*	*
Aconaphthene	*		259	156	225	81	14J
Dibenzofuran	*		158	125	114	78	4.7J
Fluorene	*		245	140	219	90	9.4J
Phenanthrene	6.5J		718	325	715	229	26
Anthracene	*		465	210	521	114	69
Carbazole	*		173	96	157	38	15J
Fluoranthene	3J		844	215	763	188	138
Pyrene	1.1J		181	64	266	65	98
Benzo(a)anthracene	1.6J		181	54	259	62	104
Chrysene	2.9J		230	61	318	73	160
Benzo(b)fluoranthene	3.8J	*	*	78	143	127	248
Benzo(k)fluoranthene	*		231	74	135	121	236
Benzo(e)pyrene	2.5J		83	25	97	52	83
Benzo(a)pyrene	2.5J		125	35	133	55	116
Indeno(1,2,3-cd)pyrene	1.8J		51	15J	54	26	53
Dibenzo(a,h)anthracene	.5J		23	5J	19J	12J	17J
Benzo(g,h,i)perylene	1.5J		41	11J	42	22	42

Total 4,455 3,322

* - Non-detectable levels.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the lowest linear detection limit of 10.0 ug/ml, but greater than zero and the concentration is given as an approximate value.

TABLE 3. SUMMARY OF SOILS ANALYSIS

GULF STATES CREOSOTE SITE
 HATTIESBURG, MISSISSIPPI
 MARCH, 1990

FILE COPY

Parts per million (ppm)

Compound Name	Sample Location Sample Depth	D03A 10 ft. Top of Auger	D03A Bottom of 11 ft. Auger	E19 11 ft.	E24 8 ft.	E25 8 ft.	E27 8 ft.
Naphthalene		0.5J	7.3	2.5	544	48	753
2-Methylnaphthalene		*	.1J	.9	224	26	293
1-Methylnaphthalene		*	.06J	.6	107	26	193
Biphenyl		*	.02J	.3J	55	3.5J	140
2,6-Dimethylnaphthalene		*	*	.4J	71	13	160
Acenaphthylene		*	*	.04J	7.3J	2.4J	20
Acenaphthene		*	.1J	1.5	264	86	213
Dibenzofuran		*	.05J	.7	159	37	125
Fluorene		*	.05J	.9	194	66	129
Phenanthrene		*	.04J	2.7	420	136	425
Anthracene		*	*	1.7	87	41	126
Carbazole		*	.07	.3	48	5.5J	59
Fluoranthene		.1J	.03J	2.9	224	144	288
Pyrene		.2J	.04J	3.4	180	126	296
Benzo(a)anthracene		.07J	*	1.1	52	34	100
Chrysene		.08J	*	1.2	42	37	86
Benzo(b)fluoranthene		*	*	1.0	*	*	86
Benzo(k)fluoranthene		*	*	.4	27J	30	*
Benzo(e)pyrene		*	*	.5	*	9.7J	31
Benzo(a)pyrene		*	*	.6	*	11	42
Indeno(1,2,3-cd)pyrene		*	*	*	*	*	*
Dibenzo(a,h)anthracene		*	*	*	*	*	*
Benzo(g,h,i)perylene		*	*	*	*	*	*

* - Non-detectable levels.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the lowest linear detection limit of 10.0 ug/ml, but greater than zero and the concentration is given as an approximate value.



100 Atlanta Technology Center, Suite 120, 1575 Northside Drive, NW,
Atlanta, GA 30318 • (404) 352-4147 • FAX (404) 352-0659

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-7367

FILE COPY

MEMORANDUM

TO: File *MSD*

FROM: Donnissa L. Duvic
TAT, Region IV

THRU: Conley B. Phifer *CBP*
TATL, Region IV

SUBJECT: Gulf State Creosote Analytical Data
TDD# 04-8908-L15-0816
TAT# 04-F-03477

DATE: 7 September 1989

Bonner Analytical Testing Company conducting the requested analysis of base neutrals/acid extractables on two samples from the Gulf State Creosote site. The data was received prior to the requested due date.

A summary of the analytical data may be found on the following page. All results are in ppb.

*Stagnant creek water
w/ creosote liquid
layer on top*

*"Hot" soil
in creek bank*

GULF STATE CREOSOTE ANALYTICAL DATA

	<u>Water</u>	<u>Soil</u>
Naphthalene	57,420	2,830,000
Aconaphthylene	1,570	43,750
Acenaphthene	23,910	783,600
Fluorene	26,740	919,300
Phenanthrene	43,270	2,021,000
Anthracene	11,640	355,300
Fluoranthene	40,620	1,037,000
Pyrene	31,530	861,000
Benzo (a) anthracene	9,800	215,000
Chrysene	8,360	217,400
Benzo (b) fluoranthene	3,880	73,460
Benzo (k) fluoranthene	5,580	142,900
Benzo (a) pyrene	4,660	109,100
Indeno (1,2,3-c,d) pyrene	1,200	9,040
Dibenzo (a,h) anthracene	201J	-
Benzo (g,h,i) perylene	706J	3,370J
Total Polynuclear Aromatics	271,000	9,620,000

J indicates compound was detected below the detection limit, the value given is an estimate

(The above results are in ppb. To convert in ppm, divide by 1000).

cc: Don Rigger
Greg Shaia

FILE COPY

FAX

FILE COPY

DEPARTMENT OF ENVIRONMENTAL QUALITY
Bureau of Pollution Control
P.O. Box 10385
2380 Hwy. 80 West
Jackson, MS 39289-0385
FAX Number: (601) 354-6612

Date Oct 14 1991

Please deliver the following 3 pages including transmittal sheet to:

Name James Snowden Phone 268 2006

Location Hattiesburg, MS FAX # 268 2008

Routine

Priority

RE: Industrial Park Inc.

From:

Name Jim Hardage Phone 961 5065

Location MS Office of Pollution Control
Jackson MS

Message

See attached letter as we discussed by
telephone on 10-14-91.

JH

If all pages are not received or are not legible please call us as soon as possible at (601) 961-5171.



FILE COPY

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

October 14, 1991

CERTIFIED MAIL P 685 416 616

Industrial Park, Inc.
7284 U. S. 49 Hwy.
Hattiesburg, Mississippi 39402-9158

ATTENTION: Mr. James Snowden

RE: Gulf States Creosote Site
CERCLA Site Investigation

Mr. Snowden JH
Dear ~~Dr. Walker~~:

The Mississippi Office of Pollution Control (Office), pursuant to the authority and requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 41 U.S.C. 9601, et seq., as amended by the Superfund Amendments and Reauthorization ACT (SARA), Public Law 99-499, is planning to conduct a sampling investigation of the above referenced site. The Office has reason to believe that there may be a release or threat of a release of hazardous substances from the site into the surrounding environment. The purpose of the investigation is to determine the nature and extent of contamination at the site and to determine what, if any, further response action is appropriate.

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Collection of surface and subsurface soil samples.

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Mr.

Dr. James Snowden

Page 2

Collection of sediment samples.

Movement of vehicles and equipment onto and about the premises as necessary to accomplish the above mentioned activities.

At your request, the Office will split samples with you. However, you will have to furnish your own containers and make your own arrangements for laboratory analyses.

If you have any questions, please contact me at (601) 961-5065 or 5171. Your cooperation in this matter is appreciated.

Sincerely,

Jim Hardage

Jim Hardage
Hazardous Waste Division
CERCLA Unit

JH:ms_mes16

cc: Brian Farrier - EPA

TRANSACTION REPORT

OCT 14 1991 MON 14:32

DP

CERCLA MS

SENDER:

- Complete it 1 and/or 2 for additional services.
- Complete it 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Industrial Park, Inc.
7284 U.S. 49 Hwy.
Hattiesburg, MS 39402-9158

ATTENTION: Mr. James Snowden

4a. Article Number

P 685 416 616

4b. Service Type

- Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery

10/15/91

8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)

Margaret Olson

6. Signature (Agent)

United States Postal Service



Official Business



PENALTY FOR PRIVATE
USE, \$300

Print your name, address and ZIP Code here

DEPT. OF ENVIRONMENTAL QUALITY
BUREAU OF POLLUTION CONTROL
P. O. BOX 10335
JACKSON

MS 39239-0335

Attention: Michael Slack

P 685 436 616

Certified Mail Receipt



UNITED STATES
POSTAL SERVICE

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to

Industrial Park, Inc.

Street No. ~~7284~~ U.S. 49 Hwy.

City, State & ZIP Code
Hattiesburg, MS 39402-9158

Attention: Mr. James Snowden

Postage Fee

Special Delivery Fee

Restricting Delivery Fee

Return Receipt Showing
to Whom & Date Delivered

Return Receipt Shown to Whom,
Date, & Address of Delivery

TOTAL Postage
& Fees

Postmark or Date

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE.
NO MAIL FEE, AND CHARGE FOR ANY SELECTED OPTIONAL SERVICES (see front).

If you want this receipt postmarked, check the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, check the gummed stub to the right of the return address of the article, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in Item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

U.S.G.P.O. 1990-270-163



FILE COPY

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

October 14, 1991

CERTIFIED MAIL P 685 416 616

Industrial Park, Inc.
7284 U. S. 49 Hwy.
Hattiesburg, Mississippi 39402-9158

ATTENTION: Mr. James Snowden

RE: Gulf States Creosote Site
CERCLA Site Investigation

Mr. Snowden JH
Dear ~~Dr. Walker~~:

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Mr.

~~Dr.~~ James Snowden

Page 2

Collection of sediment samples.

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If you have any questions, please contact me at (601) 961-5065 or 5171. Your cooperation in this matter is appreciated.

Sincerely,

Jim Hardage

Jim Hardage
Hazardous Waste Division
CERCLA Unit

JH:ms_mes16

cc: Brian Farrier - EPA

PHONE CONVERSATION RECORD

Talked with Dispatcher Date 10/14/91 Time 9:00 ^{PM} p.m.

Of Phone Company (Company) Phone No. _____

Re Gulf States Crew.

I placed call Party called

My message reply _____

- They have marked lines @ Timothy Lane for 70-1

Party's message reply _____

- OK, what about the location @ Pine Street

- they have not done it yet OK

Action or follow-up necessary _____

Refer to _____ File

Signed [Signature]

PHONE CONVERSATION RECORD

Talked with Eddy (Disphen) Date 10/11/91 Time 1:22 a.m.
Of Water Dept. Plant #2. Phone No. 545-4635
(Company)
Re Water lines & Goldstate Crso.

I placed call Party called

My message reply _____

- I gave directions to the site. (Goldstate)

Party's message reply _____

- OK, the lines will be marked by Monday
- Orange is sewer line
- Blue is water line

Action or follow-up necessary _____

Refer to _____

File

Signed [Signature]

FAX

DEPARTMENT OF ENVIRONMENTAL QUALITY
Bureau of Pollution Control
P.O. Box 10385
2380 Hwy. 80 West
Jackson, MS 39289-0385
FAX Number: (601) 354-6612

Date Oct 10, 1991

Please deliver the following 3 pages including transmittal sheet to:

Name DR. GORDON WALKER Phone (601) 584-6283

Location HATTIESBURG, MS

Routine Priority

From:

Name MICHAEL SLACK Phone (601) 961-5217

Location MS DEQ, JACKSON, MS

Message

If all pages are not received or are not legible please call us as soon as possible at (601) 961-5171.



STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

October 10, 1991

CERTIFIED MAIL P 675 196 205

Board of Education
P. O. Box 1569
Hattiesburg, Mississippi 39403

ATTENTION: Dr. Gordon Walker, Superintendent
of Hattiesburg Public Schools

RE: Gulf States Creosote Site
CERCLA Site Investigation

Dear Dr. Walker:

The Mississippi Office of Pollution Control (Office), pursuant to the authority and requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 41 U.S.C. 9601, et seq., as amended by the Superfund Amendments and Reauthorization ACT (SARA), Public Law 99-499, is planning to conduct a sampling investigation of the above referenced site. The Office has reason to believe that there may be a release or threat of a release of hazardous substances from the site into the surrounding environment. The purpose of the investigation is to determine the nature and extent of contamination at the site and to determine what, if any, further response action is appropriate.

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Collection of sediment samples.

Dr. Gordon Walker
Page 2

Movement of vehicles and equipment onto and about the premises as necessary to accomplish the above mentioned activities.

At your request, the Office will split samples with you. However, you will have to furnish your own containers and make your own arrangements for laboratory analyses.

If you have any questions, please contact Michael Slack or myself at (601) 961-5171. Your cooperation in this matter is appreciated.

Sincerely,

Michael J. Slack for

Jim Hardage
Hazardous Waste Division
CERCLA Unit

JH:ms_mes16

cc: Brian Farrier

TRANSACTION REPORT

OCT-17 91 THU 10:12

DP

PHONE CONVERSATION RECORD

Talked with _____ Date 1-17/77 Time 9:00 ^{a.m.} p.m.

Of MS - 1 - Corp. Phone No. 362-4374
(Company)

Re Gulf States Corp.

I placed call Party called

My message reply _____

Handwritten notes:
- now I depend on it. to the 1st end
- The 2nd end is in the computer system
- I will get back to you on this
- Thank you for today

Party's message reply _____

Handwritten notes:
- Company # _____ = 910 110 270054
- _____ = 910 110 340058

Handwritten notes:
Willy Easton ^{with} MS Power SEB
EAS, Cable, Phoenix + phone.; AT&T

Action or follow-up necessary _____

Handwritten notes:
Call the Walter Company (City of HB's)

Handwritten notes:
- Final Conf. #'s are : TW-1 ⇒ 9110 1110 270053
TW-3 ⇒ 9110 1110 340058

Handwritten notes:
(DORNA)

Refer to _____ File

Signed *Vicki White*

- Comp's notifies for Bill
- Wilmont Easton
- UA Cable
- MS Power
- South Central Bell
- AT&T

United States Postal Service

Official Business



PENALTY FOR PRIVATE
USE, \$300

Print your name, address and ZIP Code here

DEPT. OF ENVIRONMENTAL QUALITY
OFFICE OF POLLUTION CONTROL
P. O. BOX 10385
JACKSON

MS 39289-0385

Att: Michael Slack
Slack

Bas

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. Addressee's Address
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Board of Education
P. O. Box 1569
Hattiesburg, MS 39403

4a. Article Number

P 675 196 205

4b. Service Type

- Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

ATTENTION: Dr. Gordon Walker, Supt.
Hattiesburg Public Schools
Hattiesburg, MS 39403

7. Date of Delivery

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

Ray Horn

P 675 196 205



Certified Mail Receipt

No Insurance Coverage Provided

Do not use for International Mail

(See Reverse)

Sent to Board of Education

P. O. Box 1569

Hattiesburg, MS 39403

ATT: Dr. Gordon Walker, Supt.

Hattiesburg Public Schools

**POSTAGE WILL BE PAID BY ADDRESSEE
FIRST CLASS PERMIT NO. 2096 NEW YORK, N.Y.
PS Form 3800, June 1990 (Reverse)**

Return this receipt to the sender in the right of the return address
shown on this receipt. If you use a return service window or hand it to
the carrier, you are responsible for postage.

When you receive this receipt, you may sign the right of the return
address and return it to the sender.

When you receive this receipt, you may sign and address on a
return envelope and return it to the sender. If the return is
gummed, you may sign and address on a return envelope and return it to the sender.

When you receive this receipt, you may sign and address on a
return envelope and return it to the sender.

When you receive this receipt, you may sign and address on a
return envelope and return it to the sender.

U.S.G.P.O. 1990-270-153

MICKY RYAN

584 - 8451

12 Ryan Motors, Inc.
Michael F. Ryan

~~11/1/51~~

~~Robert James~~

341 0001

11/1/51 516

~~341 0001~~

11/1/51 516

Form 1101a
10-11-90

Mississippi Department of Environmental Quality
ROUTE AND INSTRUCTION SHEET

Date _____

To: _____

From: _____

PLEASE

___ Answer Direct

___ See me

___ Copy (ies) to:

___ Phone me at _____

___ Returning to you _____

___ For your approval _____

___ For your information _____

___ Note, pass on to _____

___ Investigate and report _____

___ Comment and return _____

___ Handle _____

___ Return _____

___ Take up with _____

___ File _____

___ Order _____

Comments: _____



FILE COPY

STATE OF MISSISSIPPI

DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

October 10, 1991

CERTIFIED MAIL P 675 196 205

Board of Education
P. O. Box 1569
Hattiesburg, Mississippi 39403

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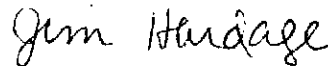
Dr. Gordon Walker
Page 2

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If you have any questions, please contact Michael Slack or me at (601) 961-5171. Your cooperation in this matter is appreciated.

Sincerely,



Jim Hardage
Hazardous Waste Division
CERCLA Unit

JH:ms_mes16

cc: Brian Farrier - EPA
Michael E. Ryan

9/27/91

GULF STATES
TOBACCO CO.

- J. C. DELANEY
- DALE BOUNDS

(601) 582-3532

JIM AND MYSELF TRAVELED TO
HATTIESBURG TO RECON THE
GULF STATE CREOSOTE SITE.

THE ABOVE LISTED REFERENCE
IS FOR A CONTACT FOR THE
INSTALLATION OF A BACKGROUND
TEMPORARY WELL.

9/28/91

Michael J. Shuck

Speed Letter

To
Kenneth L. Whitten
Department of Environmental Quality
Bureau of Pollution Control
P.O. Box 10385
Jackson, MS 39289-0385

From

THE CITY OF HATTIESBURG

WATER DEPARTMENT

WATER PLANT No. 2 - 900 JAMES STREET

HATTIESBURG, MISSISSIPPI 39401

TELEPHONE 601-544-4113

Subject

—No. 9 & 10 FOLD

Message

Enclosed is the information that you requested. If I can be of further assistance, please feel free to contact me.

Date _____ Signed Chuck Henderson

Reply

—No. 9 FOLD

—No. 10 FOLD

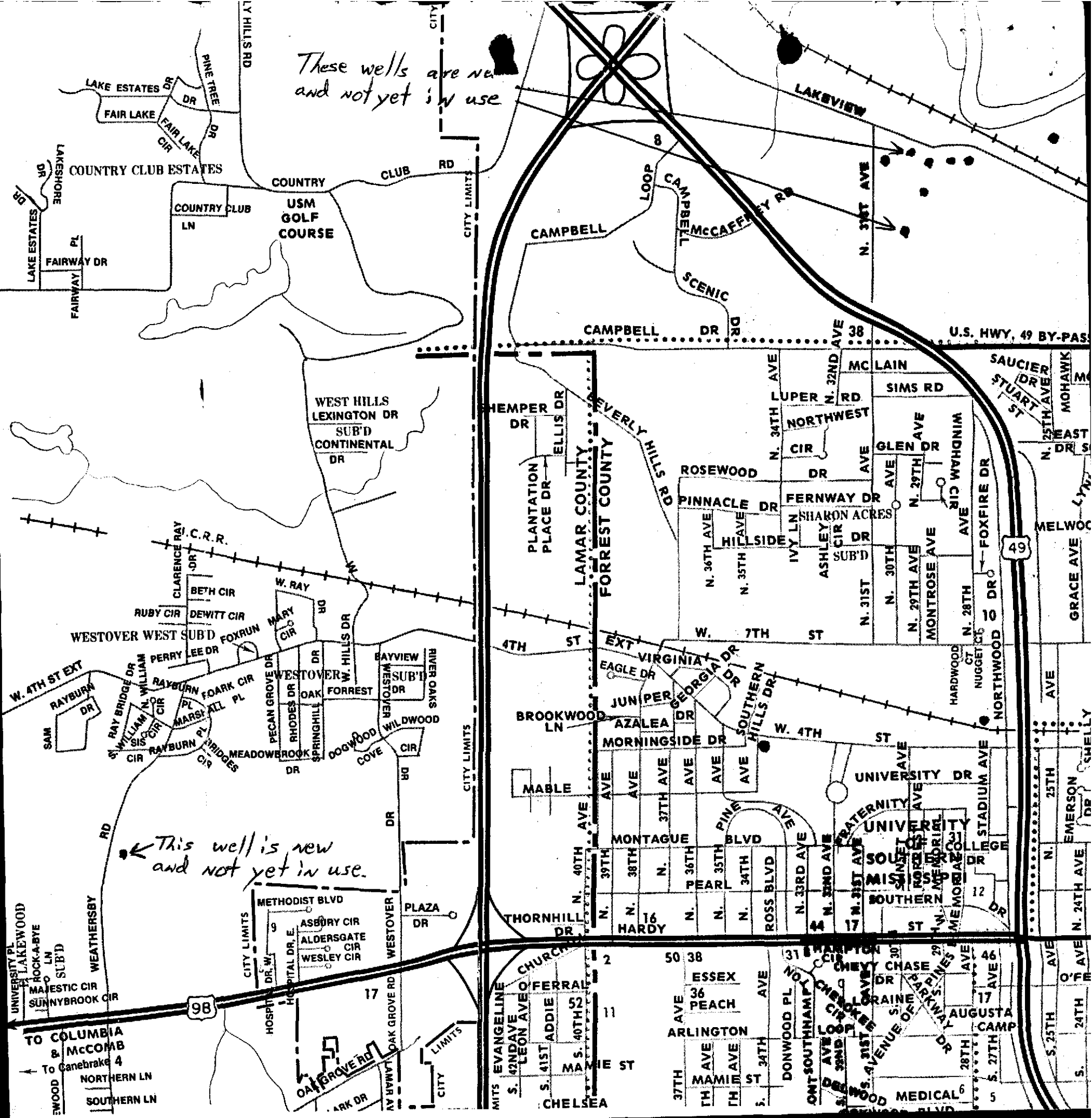
Wilson Jones Company
GRAYLINE FORM 44-902P - 3-PART
© 1974 - PRINTED IN U.S.A.

Date _____ Signed _____

RECIPIENT—RETAIN WHITE COPY, RETURN PINK COPY.

These wells are new
and not yet in use

This well is new
and not yet in use.





STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

FILE COPY

March 8, 1990

Mr. Brian Farrier
Site Investigation and Support
Branch
Waste Management Division
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Farrier:

Re: Gulf State Creosote
MSD985967199
Hattiesburg, MS

Enclosed is a preliminary assessment for the above referenced site. A site discovery form for this site was sent to you on February 14, 1990. On the discovery form, the site was identified as American Creosote. We later realized that the site had already been entered into CERCLIS under the name of Gulf State Creosote, so please disregard the February 14, 1990, notification.

According to our emergency response staff, EPA Region IV is planning a removal action at this site. With your concurrence, the Bureau could perform an SSI at the site later this year or in calendar year 1991.

Please contact Michael Slack or me if you have any questions or comments.

Sincerely,

Jim Hardage
Hazardous Waste Division

JH-5:lr
Enclosure

1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1,000
11	1,100
12	1,200
13	1,300
14	1,400
15	1,500
16	1,600
17	1,700
18	1,800
19	1,900
20	2,000
21	2,100
22	2,200
23	2,300
24	2,400
25	2,500
26	2,600
27	2,700
28	2,800
29	2,900
30	3,000
31	3,100
32	3,200
33	3,300
34	3,400
35	3,500
36	3,600
37	3,700
38	3,800
39	3,900
40	4,000
41	4,100
42	4,200
43	4,300
44	4,400
45	4,500
46	4,600
47	4,700
48	4,800
49	4,900
50	5,000
51	5,100
52	5,200
53	5,300
54	5,400
55	5,500
56	5,600
57	5,700
58	5,800
59	5,900
60	6,000
61	6,100
62	6,200
63	6,300
64	6,400
65	6,500
66	6,600
67	6,700
68	6,800
69	6,900
70	7,000
71	7,100
72	7,200
73	7,300
74	7,400
75	7,500
76	7,600
77	7,700
78	7,800
79	7,900
80	8,000
81	8,100
82	8,200
83	8,300
84	8,400
85	8,500
86	8,600
87	8,700
88	8,800
89	8,900
90	9,000
91	9,100
92	9,200
93	9,300
94	9,400
95	9,500
96	9,600
97	9,700
98	9,800
99	9,900
100	10,000

... the
 ... (1000) ...

FILE COPY

February 14, 1990

Mr. Brian Farrier
Site Invest. & Support Branch
Waste Management Division
U.S. EPA - Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Dear Brian:

Enclosed is a site discovery form for American Creosote on W. Pina Street in Hattiesburg, Mississippi. Please quickly enter this site into CERCLIS.

The site is an old creosote plant that is leaching into Gordan's Creek. Mississippi Bureau of Pollution Control and EPA emergency response personnel are currently assessing the site for possible immediate removal action.

Emergency response staff has requested that the CERCLA Section of the Bureau perform a preliminary assessment of the site. The PA needs to be completed by or around March 15, 1990, in order to assist their efforts in evaluating the site.

The Bureau would like to begin the PA immediately. We do not believe that this one additional PA will have an adverse impact on our 1990 preredial schedule.

I would appreciate your verbal and written concurrence with this work. I will send you an updated preredial schedule showing this addition at my earliest convenience.

If you have any questions or comments, please contact me.

Sincerely,

Jim Hardage

Jim Hardage
Hazardous Waste Division

JH:mas-99

cc: Don Rigger, EPA Region IV - Emergency Response
Enclosure

SITE DISCOVERY FORM

Part 1: Information necessary to add a site to CERCLIS

ACTION: A

EPA ID: _____

SITE NAME: AMERICAN Cicosote SOURCE: I (R=EPA, T=STATE)

STREET: W. Pine Street, 7600 CONG DIST: _____ (optional)

CITY: Mattiesburg ZIP: 39401

CNTY NAME: Lowndes CNTY CODE: _____ (optional)

LATITUDE: ___ / ___ / ___ LONGITUDE: ___ / ___ / ___ (optional)

INVENTORY IND: Y REMEDIAL IND: Y REMOVAL IND: N FED FAC IND: N

RPM NAME: _____ RPM PHONE: _____ - _____ - _____ (EPA Project Officer)

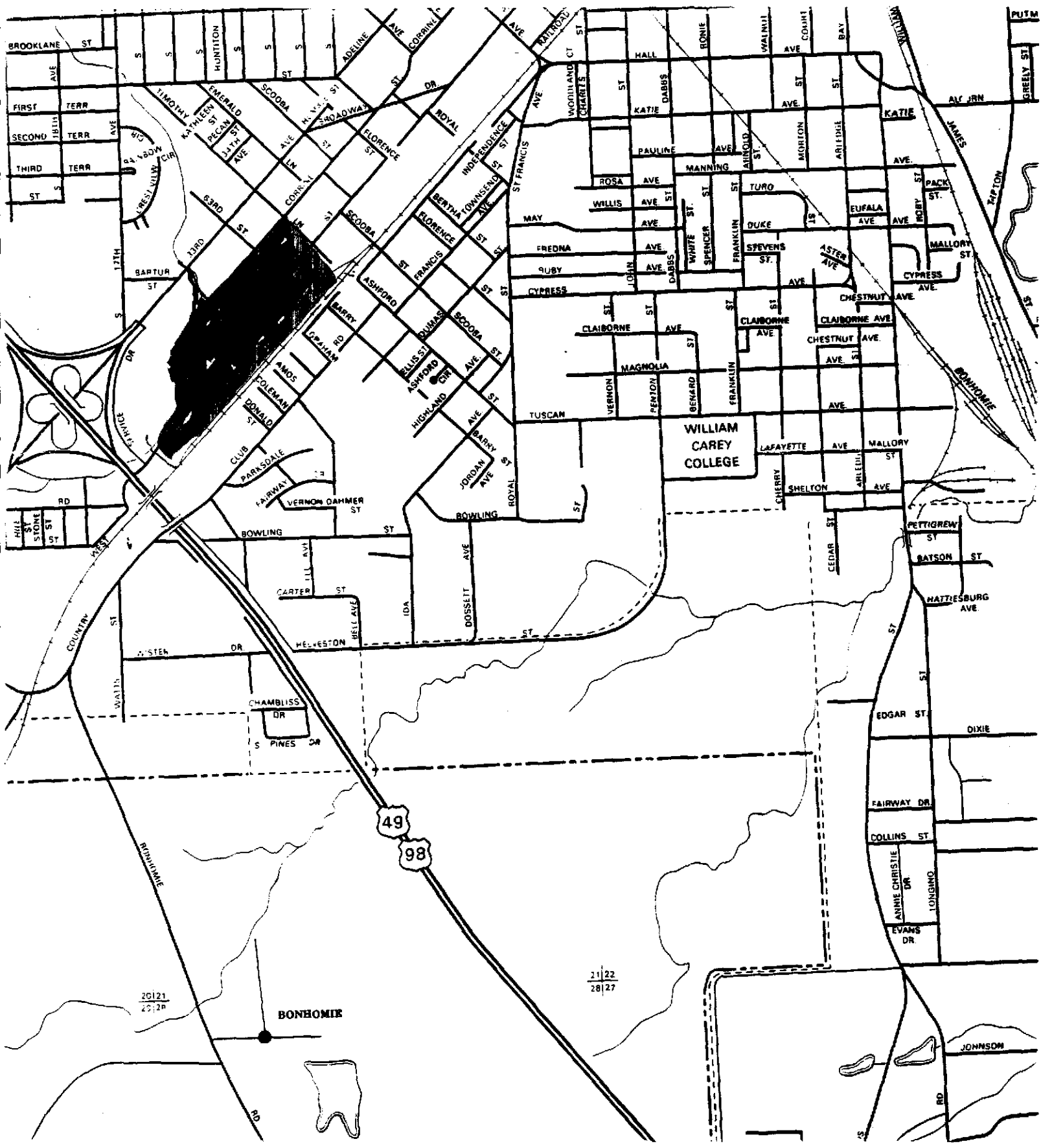
SITE DESCRIPTION: (optional)

84.43 ACRES MORE OR LESS in Sec 16, T4N R13 West
Lowndes County, Ms.
Old Cicosote site operated from 1900 to 1960

Part 2: Other site information

DATE SITE FIRST REPORTED: 08 / 07 / 89 REPORTED BY: Jim Vance

REASON FOR LISTING: ~~Not reported~~
Cicose discovered flowing into
Gordan's Creek.



20121
20120

BONHOMIE

21|22
28|27

JOHNSON

SHOWS & DEARMAN, INC.

CONSULTING ENGINEERS

MICHAEL T. WAITS, P.E., R.L.S.

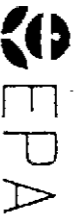
VICE PRESIDENT

601-544-1821

301 HARDY STREET

P. O. BOX 1711

HATTIESBURG, MS 39403-1711



Greg Powell

Federal On-Scene Coordinator

Emergency Response and Control Section

U. S. Environmental Protection Agency

Region IV

345 Courtland Street, N.E.

Atlanta, Georgia 30365

404/347-3931

FTS: 257-3931

24 Hr: 404/347-4062

PAT HARRISON WATERWAY DISTRICT

WILLIAM H. REID

DISTRICT ENGINEER

**P.O. DRAWER 1509
HATTIESBURG, MS 39401**

**OFF. (601) 264-5951
RES. (601) 544-5110**

USED CARS - LAND - WHISKEY - MANURE - NAILS
FLY SWATTERS - RACING FORMS - BONCOS
FERRIS WHEELS - SLAVES - ROLLER COASTERS

ENTREPRENEUR - EXPERT - CONSULTANT

GRIEVANCES SETTLED

WARS FOUGHT	STUD SERVICE
REVOLUTIONS STARTED	TIGERS TAMED
ASSASSINATIONS PLOTTED	BARB EMPLOYED
GOVERNMENTS RUN	COMPUTERS VERIFIED
UPRISING QUELLED	ORGIES ORGANIZED

PUBLIC

SERVICES



C.G. (Joe) MEADOR III
ASST. DIRECTOR

P. O. Box 1898
Hattiesburg, MS 39401
(601) 545-4540

1-2-90

C. G. Meador III

City of Hattiesburg

545-4540

Bill Reid PHWD

264-5951

KEN GUIDRY

CORPS OF ENGINEERS

205-694-4004

Jim Vance COFE

205 690 3445

Richard Ball

Ms. Dept. Env. Qual.

601-961-5171

DON RIGGER

EPA REGION IV

404-347-3931

Greg Powell

EPA /ERT

404-347-3931

MEMORANDUM

TO: Bob Rogers
FROM: Richard Ball
RE: Hattiesburg - American Creosote Site
DATE: January 4, 1990

- 8-7-89 Jim Vance, Mobile District Corps., reported to this agency creosote in borings along Gordon Creek.
- 8-31-89 I investigated site and discovered creosote seeping into Gordon Creek. Title search of county records revealed a creosote operation was in operation along Gordon Creek from around 1900 to 1960. The last operator of record was American Creosote. The site is located on 16th sections land, with the Hattiesburg School District as trustee.
- 9-5-89 Don Rigger, EPA and myself investigated the site. Creosote was found seeping into creek. Water samples from creek taken.
- 9-12-89 Contacted Hattiesburg School District Superintendent about our discovery on Gordon Creek and implication.
- 10-10-89 Meet with Mayor of Hattiesburg and discussed what this agency had found.
- 12-12-89 Contacted Mobile District of Corps., and told them of the problem we found in Gordon Creek.
- 1-2-90 Don Rigger, Greg Powell, EPA, Jim Vance, Ken Guidry, Corps of Engineers, Joe Meador, City of Hattiesburg, Burce Reid, Pat Harrison, Waterway District, and myself met and discussed the problem along Gordon Creek as it relates to Hattiesburg flood control project.
- 1-22-90 EPA plans to sample area. At present, we do not know how large and extensive an area is contaminated. The old site was around 84 acres along the railroad, about 1/2 mile long by 1/4 mile wide. Today this area is covered by car dealers, and other small businesses. Plan to contact local authorities and affected lease holders when identified prior to the 22d and inform them of our investigation.

RB-4:lr

~~8/10/89~~

Cover. w/ Jim Vance

12-12-89

- located by Peddler Motel + BK.

- Enlarging channel \Rightarrow bottom width 30'
dilled 4 or 5 miles up. Those 3 only are found

Sponsor - Pat Harrison Waterway District

(~~264~~) 264-5951

* Mike Waters - Engr. 544-1821

Joe Meador - City Engr. 545-4640
City Hall.

John Foyle from Texas (713) 866-6939
wants to use the land.

Neil Schaefer, cons. in Jackson, Danny Cotton, AE
45 ^{to complete} for the job 948-3071

Roger Williams, out of Houston, (713) 621-9067
represents a client who wants to
purchase K-mart property. They are
drilling in K-mart parking lot now.
found water at 10'
according to Page, to Gulf Coast
Creosoting leased the land in 1947
& owned it until \approx 1955?
maybe stored at McDonalds.

being duly sworn, says that the notice, a true copy of which is hereto annexed, appeared in the issues of said newspaper as follows:

Date 3-10, 1933

Number words 1000
Published 1 Times

Printer's Fee \$20.00
Making Proof .50
Total \$20.50

(Signed) Thos. St. John, Publisher.

Sworn to and subscribed before me this 10 day of March 1933.

F. Delsing,
Notary Public.
My Commission Expires April 12, 1934.

(Seal)

Recording fee \$6.20

THE GULF STATES LIQUIDATING COMPANY

Filed for record 9 o'clock A.M. March 24, 1933,

TO () DEED

Recorded March 24, 1933,

THE GULF STATES CREOSOTING COMPANY

Ethel Baylis, Clerk.

STATE OF MISSISSIPPI: :

COUNTY OF FORREST : :

For and in consideration of the sum of -----FORTY THOUSAND & NO/100 (\$40,000.00) DOLLARS ----- cash in hand paid, the receipt of which is hereby acknowledged, the undersigned THE GULF STATES LIQUIDATING COMPANY, a Mississippi corporation, does hereby grant, bargain, sell, convey and warrant unto the GULF STATES CREOSOTING COMPANY, a Delaware corporation, the following described property lying and being situated in the City of Hattiesburg, Forrest County, Mississippi, to-wit:

All of Block 75 of the D. D. McInnis Third Survey of the City of Hattiesburg, excepting, however, the following described parcels of land:

Except that parcel of land described as beginning at the Northwest corner of said Block 75 and run Eastward along the Southern boundary line of Florence Street a distance of 200 feet, thence at right angles to last named course Southward a distance of 150 feet, thence at right angles to the last named course Westward a distance of 200 feet to Thirty Second Avenue; thence Northward along the East boundary line of Thirty Second Avenue a distance of 150 feet to the point of beginning; and

Except also that part of land described as beginning at the Northeast corner of said Block 75 and run Southward along the West boundary line of West Pine Street 75 feet; thence at right angles to the last named course Westward 180 feet; thence at right angles to the last named course Northward 75 feet to Florence Street; thence at right angles to the last named course Eastward 180 feet to point of beginning; and

Except that parcel of land described as a part of said Block 75 beginning at the point of intersection of the Northwest line of Pine Street with the Southwest line of Florence Street and run thence Southwest along the Northwest line of Pine Street 75 feet to the point of beginning, and thence run Southwest along the North-west line of Pine Street, 75 feet, thence run Northwest at right angles to Pine Street 180 feet, thence run Northeast parallel with Pine Street 75 feet and thence run Southeast 180 feet to the point of beginning; and

All of Lot 1 of Block 74 of the D. D. McInnis Third Addition to the City of Hattiesburg, and

All of Lot 2 of the Davis & Johnson Subdivision of Block 74 of the D. D. McInnis Third Addition to the City of Hattiesburg; and

Beginning at the Northerly corner of Block 72 of the original D. D. McInnis Third Survey of the City of Hattiesburg, the same being the point of intersection of the Southeasterly boundary line of Thirty Second Avenue with the Southwesterly boundary line of the unimproved strip lying between Blocks 72 and 74 of the said D. D. McInnis Third Survey, which is the point of beginning, and run thence in a Southwesterly direction along the southeasterly boundary line of Thirty Second Avenue 550 feet, more or less, to the East prong of Gordon's Creek, thence in a Southerly direction along and following the meanderings of said Gordon's Creek 450 feet, more or less, thence run East 380 feet, more or less, to the Eastern boundary line of Lewin Avenue or Pine Street, thence run in a Northeasterly direction along the Western boundary line of Lewin Avenue or Pine Street 710 feet to the East Easterly corner of said Block 72 of said D. D. McInnis Third Survey, and thence run Northwest along the Northeast boundary line of said Block 72 to the point of beginning; the same containing 10 acres of land, more or less.

All of Blocks 11, 12 and 13 of the Hicks Subdivision of the D. D. McInnis Survey of Section 16, Township 4 North, Range 13 West, and

All of Blocks 4, 5, 6, 7, 8 and 14 of the Hicks Subdivision of the D. D. McInnis Survey of Section 16, Township 4 North, Range 13 West.

All of the above described land located in and being a part of Section 16, Township 4 North, Range 13 West, in the City of Hattiesburg, Forrest County, Mississippi, and lying West of the New Orleans and Northeastern R.R. right of way through said section.

Said property being described as:

Beginning at the intersection of the Western boundary of Florence Street with the Southern boundary of Thirty Second Avenue, run thence South 44 degrees and 53 minutes West along the southeasterly boundary of Thirty Second Avenue a distance of 150 feet to a concrete monument at the point of beginning.

Thence run South 44 degrees and 53 minutes West which is along the southerly boundary of Thirty Second Avenue for a distance of 2897.2 feet to a concrete monument, thence continue along the above mentioned course a distance of 14 feet to the center of Gordon's Creek; thence South 84 degrees and 36 minutes East along center of Gordon's Creek a distance of 15.81 feet; thence South 56 degrees and 22 minutes East along center of Gordon's Creek a distance of 15.81 feet; thence South 4 degrees and 15 minutes East along the center of Gordon's Creek a distance of 18.02 feet, thence South 14 degrees and 56 minutes West along the center of Gordon's Creek a distance of 41.04 feet; thence South 4 degrees and 30 minutes East along the center of Gordon's Creek a distance of 18.02 feet; thence South 4 degrees and 30 minutes East along the center of Gordon's Creek a distance of 18.02 feet; thence South 76 degrees and 32 minutes East along the center of Gordon's Creek a distance of 69.02 feet, thence South 59 degrees and 44 minutes East along the center of Gordon's Creek a distance of 17.46 feet; thence South 7 degrees and 22 minutes East along the center of Gordon's Creek a distance of 16.49 feet; thence South 0 degrees and 58 minutes East along the center of Gordon's Creek a distance of 30.24 feet; thence South 19 degrees and 18 minutes East along the center of Gordon's Creek a distance of 12.94 feet; thence South 19 degrees and 41 minutes East along the center of Gordon's Creek a distance of 12.94 feet; thence West 38 feet to a concrete monument; thence continue West a distance of 809.83 feet to a concrete monument located on the West boundary of Section 16, Township 4 North, Range 13 West, thence South 1773.09 feet to a concrete monument which is the intersection of the West boundary line of Section 16 with the westerly right of way line of the New Orleans and Northeastern Railroad; thence run South 44 degrees and 53 minutes East along the Northwesterly right of

way line of the New Orleans & Northeastern Railroad a distance of 4219.45 feet to a concrete monument, thence North 45 degrees and 07 minutes West a distance of 483 feet to a concrete monument which is on the Northwesterly boundary of West Pine Street; thence North 44 degrees and 53 minutes East along the Northwesterly boundary of West Pine Street a distance of 611.21 feet to a concrete monument, thence North 45 degrees and 07 minutes West a distance of 400 feet to point of beginning.

All of said property being located in Section 16, Township 4 North, Range 13 West, in Forrest County, State of Mississippi, and containing 84.43 acres, more or less.

The interest hereby conveyed is the unexpired portion of a lease on said land for 99 years made on July 3, 1854.

There is located on the above described property a creosoting plant consisting of buildings, structures, tanks, boilers, machinery and equipment, and this conveyance embraces and includes not only the above described lands, but any and all buildings, improvements, tanks, machinery and equipment going to and making up the said creosoting plant.

The grantor herein warrants the payment of all taxes on the above described land up to and including the year 1932. The grantee herein assumes and agrees to pay the taxes for the year 1933.

The Gulf States Liquidating Company is a corporation created and existing under and by virtue of the Laws of the State of Mississippi and was originally incorporated under the name of the Hattiesburg Creosoting Company, which name by proper Amendment to its Charter of Incorporation was changed to the Gulf States Creosoting Company, and which name has been recently changed by proper Amendment to its Charter of Incorporation to The Gulf States Liquidating Company.

Witness the signature and corporate seal of The Gulf States Liquidating Company hereunto affixed by its duly constituted and authorized officers on this the 20th day of March, A. D., 1933.

THE GULF STATES LIQUIDATING COMPANY,

By H. S. Hagerty
Vice President

(SEAL)

ATTEST:

T. C. Hannah
Secretary

WITNESSES:

A. D. Katz

Hazel C. Kraus

STATE OF MISSISSIPPI,

COUNTY OF FORREST,

CITY OF HATTIESBURG.

Personally came and appeared before me, the undersigned authority in and for said state, county and city, H. S. Hagerty, Vice President, and T. C. Hannah, Secretary, of The Gulf States Liquidating Company, a Mississippi corporation, who acknowledged that they signed, sealed, executed and delivered the foregoing and attached conveyance on the day and year therein mentioned for and on behalf of, and as the voluntary act and deed of, said Corporation.

Given under my hand and seal of office on this the 20 day of March, 1933.

Mrs. Ila Rester

Notary Public

My Commission Expires May 6, 1936

(SEAL)

"WHEREAS, The stockholders of this Corporation in their annual meeting assembled on the 15th day of February, 1933, at which time the corporate name of this Company was the GULF STATES CREOSOTING COMPANY, by proper resolution approved the sale of the creosoting plants of this Corporation to the GULF STATES CREOSOTING COMPANY, a Delaware corporation, and authorized and empowered this Board of Directors to provide for the form of transfer for said properties; and

WHEREAS, It now appears that practically all details in the consummation of the said transaction have been worked out to the mutual satisfaction of both parties:

NOW, THEREFORE, BE IT RESOLVED, That H. S. Hegerty, the Vice President, and T. C. Hannah, the Secretary, of this Corporation be, and they are hereby, authorized, empowered and directed to execute the proper and necessary deeds of conveyance, or other papers, for the purpose of conveying to and vesting in the GULF STATES CREOSOTING COMPANY, a Delaware corporation, the creosoting plants and other properties of this Company, and particularly the creosoting plants located at Slidell, Louisiana, Hattiesburg, Meridian and Jackson, Mississippi, Birmingham, Alabama, and Brunswick, Georgia; also the railroad and railroad right of way at Jackson, Mississippi, and the oil storage tank at Chalmette, Louisiana, together with the inventories and any other properties embraced and included in this transaction."

I hereby certify that the above and foregoing is a true and exact copy of the resolution passed at a regularly convened and held meeting of the Board of Directors of The Gulf States Liquidating Company on March 13, 1933, at which a quorum and majority of the said Board was present and participating.

This the 18th day of March, 1933.

T. C. Hannah
Secretary



(SEAL)

Recording fee \$4.95

Mrs. Ed C. Corley

Filed for Record at 2 o'clock P. M. Mar. 23, 1933

To () Deed

Recorded March 25, 1933.

Mrs. Gertrude C. Smith

Ethel Baylis, Clerk

STATE OF MISSISSIPPI

FORREST COUNTY.

For and in consideration of the sum of \$250.00 and other valuable consideration heretofore and now paid and assumed, the receipt of which is hereby acknowledged, I hereby sell, convey and warrant to Mrs. Gertrude C. Smith, the following described lands situated and being in Forrest County, State of Mississippi;

All of Lot 15 - and 20 feet off West side Lot 14 Block 21, according to Hattiesburg Heights second survey, as per plat of said survey of record in office of Chancery Clerk of said County.

This land constitutes no part of my homestead.

Witness my signature this the 24th day of March 1933.

Mrs. Ed C. Corley

STATE OF MISSISSIPPI

FORREST COUNTY.

Personally appeared before me the undersigned authority, in and for said county and State, Mrs. Ed. C. Corley, who acknowledged that she signed and delivered the above and foregoing deed on the day and date therein mentioned as her act and deed and for the

FIELD LOG OF BORINGS

PROJECT: Gordon's Creek

BORING NO. B-32-89

LOCATION Hatchlesburg, Ms.

DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

SHEET NO. 1 OF 2
OPERATOR C Brown

WEATHER HOT

DEPTH TO GROUND WATER / INITIAL 9.0 SURFACE ELEV. NOT SURVEYED

INSPECTOR Robert Brown

DRILL FLUID None DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

DRILL RIG F-314 CD-24

SAMPLE NO.	DRIVE		SAMPLE		BLOWS	TYPE OF SAMPLER	SAMPLE CONTAINER	COLOR	SYMBOL	CLASSIFICATION AND REMARKS
	FROM	TO	FROM	TO						
1	0.0				1	SKDSS. \$140lb.	Boxloc1	Brown	ML	Sandy clayey silty mica w/lt. rocks moist.
	4	1.5			1	Hmr.				
2	1.5				2	"	"	"	"	Sandy clayey silty mica w/lt. rocks w/lt. gravel 1/2" max. moist.
	4	3.0			2					
3	3.0				2	"	"	"	"	Sandy clayey silty mica moist w/lt. rocks.
	4	4.5			1					
4	4.5				1	"	"	"	"	" " " " "
	4	6.0			1					
5	6.0				1	"	"	Gray	SM	Silty sand, fine gr. mica, w/lt. rocks, moist.
	4	7.5			3					
6	7.5				3	"	"	"	"	Silty sand, coarse gr. mica, moist.
	4	9.0			6					

FIELD LOG OF BORINGS

PROJECT: Gordon's Creek

BORING NO. B-33-89

LOCATION Haffies Burg, MS.

DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

SHEET NO. 1 OF 1
OPERATOR C Brown

WEATHER Hoz

DEPTH TO GROUND WATER / INITIAL 13.0 SURFACE ELEV. Not Surveyed.

INSPECTOR Don Z. Bryant
DRILL RIG F-314 CD-24

DRILL FLUID None

STARTED AT 13.0 DAYS 1 HRS 1

SAMPLE NO	DRIVE		SAMPLE		BLOWS	TYPE OF SAMPLER	SAMPLE CONTAINER	COLOR	SYMBOL	CLASSIFICATION AND REMARKS
	FROM	TO	FROM	TO						
1			0.0	3.0		6" Augur	Box 10/11	Brown	SM	Silty sand, coarse gr, mica, moist.
2			3.0	6.0		"	"	"	SC	Clayey sand, coarse gr, mica, moist.
3			6.0	9.0		"	"	"	CL	Silty lean clay, mica, moist.
4			9.0	12.0		"	"	Gray	SM	Silty sand, fine gr, mica, moist. 15 kronq fuel odor.
5			12.0	15.0		"	"	"	"	Silty sand, coarse gr, mica, wet. (Strong fuel odor.)
6			15.0	16.0		"	"	"	"	Silty sand, coarse gr, mica, wet
6			16.0	18.0		"	"	Greenish	CH	Fat clay, mica, moist.
7			18.0	20.0		"	"	Gray	"	"
										Hole w/ back filled w/ overburden.

FIELD LOG OF BORINGS

PROJECT: Gordon's Creek

BORING NO. B-30-89

LOCATION Hattiesburg, MS.

DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

SHEET NO. 1 OF 1

WEATHER Hot

DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

OPERATOR C Brown

DRILL FLUID None

DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

INSPECTOR Ken W. Bryan

DEPTH TO GROUND WATER / INITIAL 6.0

DATE/STARTED: 7-27-89 COMPLETED: 7-27-89

DRILL RIG E-314 (D-27)

SAMPLE NO.	DRIVE		SAMPLE		BLOWS	TYPE OF SAMPLER	SAMPLE CONTAINER	COLOR	SYMBOL	CLASSIFICATION AND REMARKS	
	FROM	TO	FROM	TO						OTHER	REMARKS
1			0.0	3.0		6" Augur	Box 10/11	Brown	ML		Sandy inorganic silt, micaceous dry.
2			3.0	6.0		"	"	Gray	SM		Silty sand, coarse gr. micaceous, moist.
			6.0	7.5		"	"	"	"		" " " " " wet.
3			7.5	9.0		"	"	Greenish	CL		Silty leuc clay, micaceous, moist.
								Gray			
4			9.0	12.0		"	"	Gray	SM		Silty sand, fine gr. micaceous, moist.
								"	"		" " " " " "
5			12.0	15.0		"	"	"	"		" " " " " "
								"	"		" " " " " "

Hole w/ back filled w/ overburden.

Note: Strong fuel odor in all samples. Natural gas pipeline approx. 30' away.

Bourings

SE S 23 24-86 1969
 SE S 26 18-41 1988 - didn't go past 135
 N S 04 3-45 + 50-225 1988
 Hard clay 335-367

SW S 19 Run 4-22 wht 22-25 1987
 Blue 75-200+

SE S 27 16-21, 26-119 1970
 129-185,
 sand 189-242
 sand 307-498

E S 12 32-44 Hard 119-195
 346-361
 Hard 507-523

NE S 15 Hard blue green 28-71 1983
 104-180 Hattie
 Clay W/ sand streaks 180-250
 Clay 250-277
 clay W/ sand str. 326-373
 clay, tough 474-548

S 15 32-39 1968
 120-154 Des Moines
 W/ soft spots 154-215
 Clay 215-240
 dot streaks 240-246
 soft 246-270
 Blue Cl. 502-569
 " " 572-580

42 SHEETS 2 SQUARE
 42 SHEETS 2 SQUARE
 42 SHEETS 2 SQUARE
 42 SHEETS 2 SQUARE



NE
 East

who owns prop. now
get 1-mile rad.

Whom

under
Joe ~~Harwood~~
City Hall
545-4500

S16 TAN R13 W

31° 18' 42"

89° 18' 40"

42-981 50 SHEETS 5 SQUARE
42-982 50 SHEETS 5 SQUARE
42-983 100 SHEETS 5 SQUARE



NATIONAL

G. W

11850 — 11849
11763 — 11848
11178 — 11758
11177 — 11955

9910
7463

5572
5055

3242
3241
3240
3239 — 1988
1900
1899 — 1898
1574 — 1659 — 1661
1231 — 1023
1013 — 1022
1021

3238
3236
3235
3234
3233 — 2892
2611 — 2891
2610

S.W.

2034- Eaton Electric Generating Plant industrial from Leaf R. to Pigeonville

325- E. C. Palk ~~Domestic~~ ^{irrigation} ~~from~~ ^{pumped} from Dordon Creek which drains into Leaf R. } permit issued but not using it
(~~possible~~) (601) 583-4384

238- Hercules - Industrial from Bowie R which drains into Leaf R.

199- Mrs. Charlotte K. Cook - Irrigation - ^{pumped} from Priest Creek which drains to Leaf R.

G.W.

Wattsburg WA 545-4531

2 plants, 1 w/ 6 wells, & 1 w/ 4

Plant #2 (James Street Plant) has 4 wells
(^{G.W.} 3239, 40, 41, + 42), combined serve 41,962 persons
all screened in Catapoula at 400-600'

3239	depth	top of screen	screen length	} surface Elev. 143'
3239	495	435	50'	
3240	678	615	50	
3241	673	585	80	
3242	688	595	70	

<u>GW</u>		<u>SW</u>
11850	1900	2034
11849	1899	325
11848	1898	238
11763	1661	199
11758	1660	
11955	1659	
11178	1574	
11177	1231	
9910	1023	
7463	1022	
5572	1021	
5055	1013	
3242		
3241		
3240		
3239	Petal WA	alum, TRCS
3238	Kaman Park WA	CHL
3236	Hattiesburg WA	CHL
3235	Palmer's X-ing WA	HBRG
3234	Orthal WA	CHL
3233		
2892		
2891		
2611		
2610		
1988		

depth
aq

400' + 600' → maintain
↓
level

14,500 comments
45000 people

2 plants
sep

6 wells at one
4 " at other
wells all come together

1 mill. gal. tank w/ 2 wells
chlorin. + pH adj.

31 20 44

89 5 92

31 19

5 44

72

Catahoula Sandstone

1013 dnd

3239

Miscellaneous
" "
700'

11177

"

3240

11178

"

41

42

3239 - Hall, WA municipality Catahoula

495' screen 50' total 485'

top 435'

surface
elev 143'

pop 41,962

(Swell)

3240 - depth = 678' screen 50' total 665'

Catahoula

top 615'

3241

Depth 573

cut 70 1665

top 585

3242

Depth 688

cut 70 1665

top 595

James H. Plant NO. 2

4 wells

slowing 4 1/2 962

Bever FERGUSON Gordon Creek, Hattiesburg, Miss. 23, 1989

PHONE CONVERSATION

DANNY COTTON w/ Neel-Schaller

2 phases to the Gordon Creek project

Phase 1 is from Broad to Hardy Street

Phase 2 is SW of Broad Street

Has plans for 1st Phase and is designing the 2nd Phase now. Plans for each phase can be obtained through Neel-Schaller.

George Stitameyer w/ Mobil Corps of Eng,
Phase 1 design is complete. Project will probably go up for bid the first of next year. Contaminated borings were borings taken for the 2nd phase. Contamination could have been creosote but not sure.

To call

TO: RUSSELL SMITH R142

FROM: CALFB DANA

SUBJ: Creosote in Borings in CORPS project on
Gordon Creek, Hattiesburg

DATE: 8/7/89

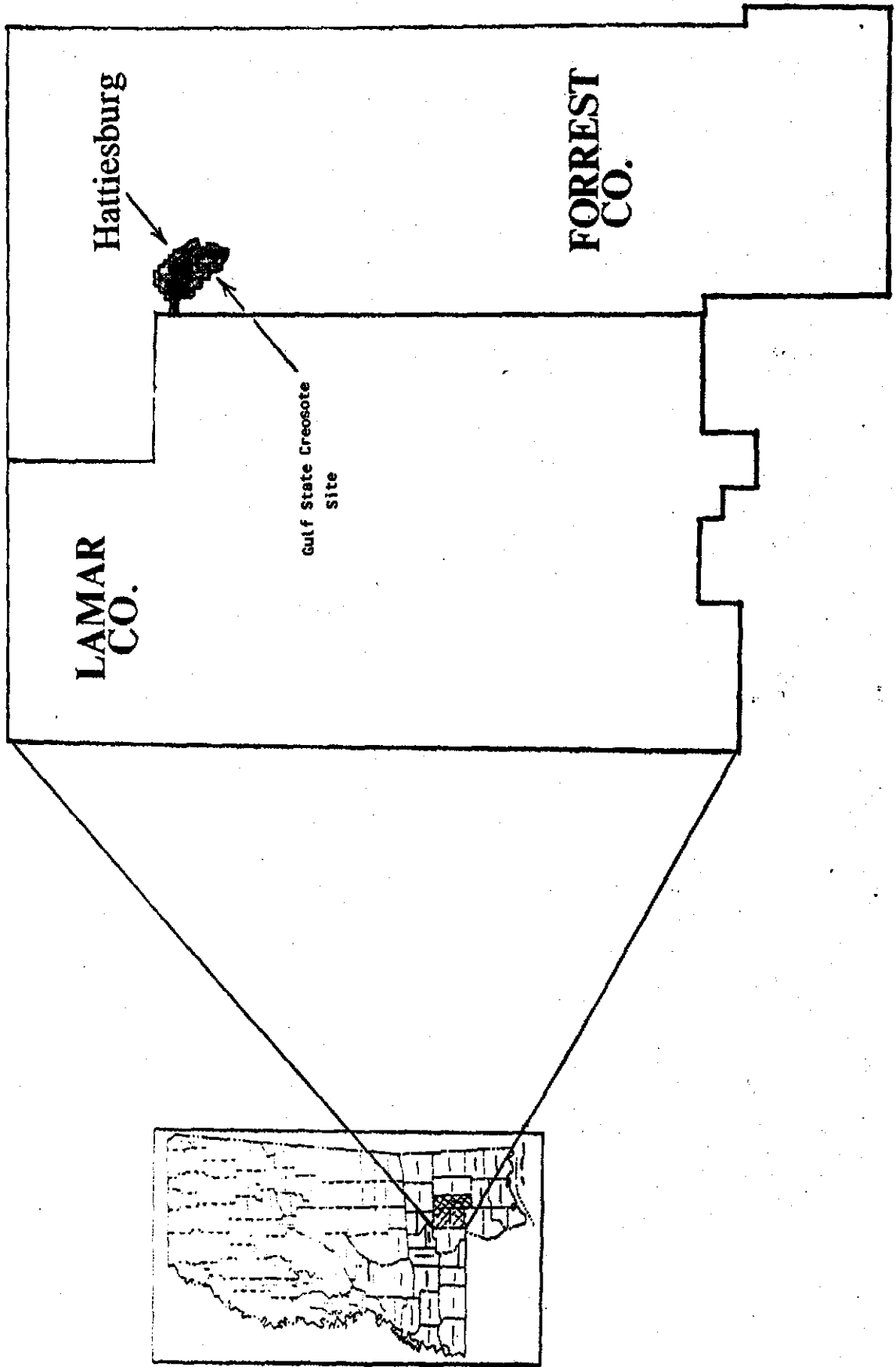
Mr. Jim Vance of the Mobile District
CORPS at 205-690-3445 reported to Robert
Seyforth on 8/7/89 that the CORPS had hit
creosote in a boring they were doing in conjunction
with a project on Gordon Creek near Hattiesburg.
The general vicinity was reported to be roughly
1/2 mile east of Hwy 49 and Hwy 11.

Oders of "fuel" and creosote appearing material
was hit about 15 ft deep. Mr. Vance is sending a
map to Robert Seyforth showing the boring locations.

Please assign to your staff and try to have
someone go look at the material. Check with Steve
Spengler as he may have an idea of whether there
was a wood treating facility at the location.

FIGURE 1

GULF STATE CREOSOTE SITE



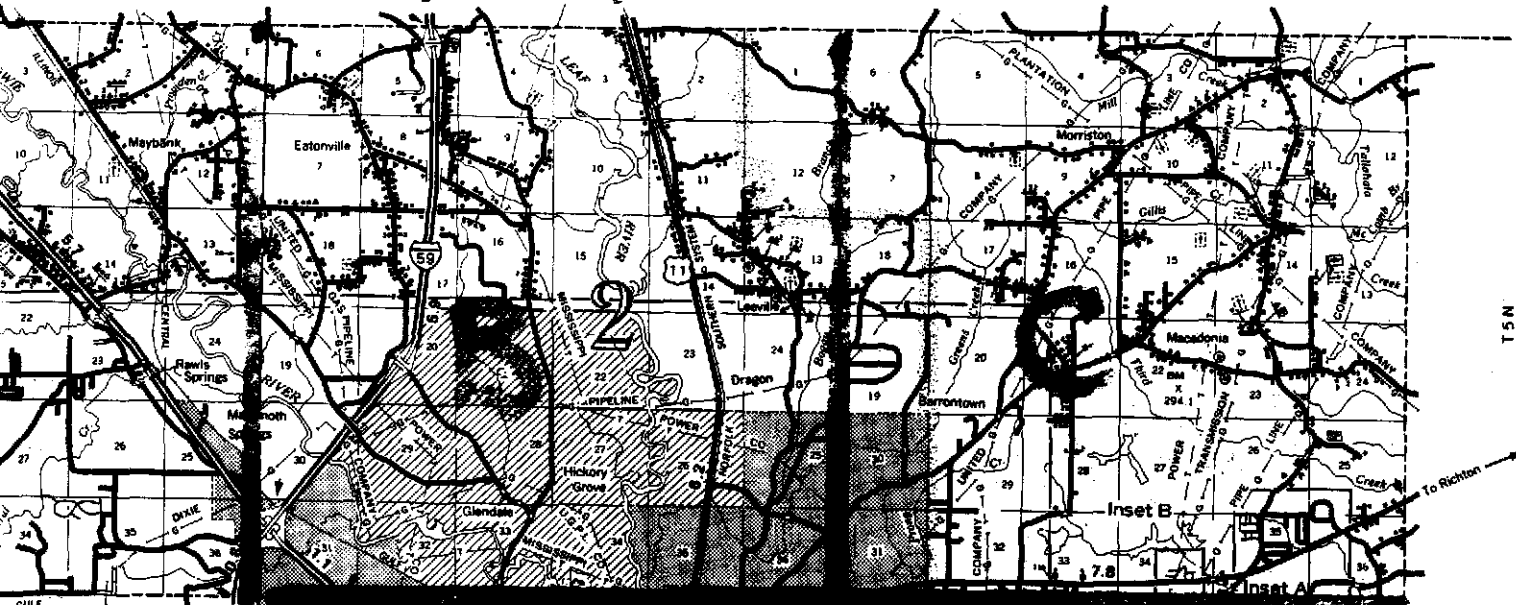


R 13 W

R 12 W

JONES COUNTY

JONES COUNTY



T 5 N

To Richmon

Inset B

Inset A

POP. IN FORREST CO.—39,681
POP. IN LAMAR CO.—1,142

To Columbia

T 4 N

LAMAR COUNTY

HATTIEBURG
POP. 29

PETAL
POP. 8,476

3

PERRY COUNTY

T 4 N

T 3 N

To Runn

To Paris

AIRPORT

Ralston

Four Points

Quickcamp Lake

Harry Lake

Cliffed Lake

Blue Lake

Upper Dead River

Ragland

McCallum

CAMP SHELBY

MILITARY RESERVATION

Inset C

To New Augusta

T 3 N

