FILE COPY

A
STUDY PLAN
FOR THE SI-PHASE II AT
GULF STATE CREOSOTE SITE
FORREST COUNTY, MISSISSIPPI
MSD985967199

PREPARED FOR:

WILLIAM BOKEY
HAZARDOUS WASTE SECTION
ENVIRONMENTAL COMPLIANCE BRANCH
ENVIRONMENTAL SERVICES DIVISION
U.S. EPA
COLLEGE STATION ROAD
ATHENS, GEORGIA 30613-7799

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
Office Of Pollution Control (MS OPC)
P. O. Box 10385
Jackson, Mississippi 39289

September 30, 1991

Prepared By:	Reviewed & Edited By:	Approved By:
Michael Slack	Jim Hardage	Jim Hardage

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1.0 Introduction

The Mississippi Department of Environmental Quality (MS DEQ), Office of Pollution Control (OPC), plans to conduct a SI-Phase II, sampling investigation, for the Gulf State Creosote site in October of 1991. This study plan briefly describes the site history and setting, and the type of sampling that will be conducted. For detailed information concerning the site, refer to the Preliminary Assessment)PA) report attached in Appendix A. The PA was performed in March of 1990 by the MS OPC. The Safety Plan for the sampling investigation is attached as Appendix B.

Background

In August of 1989, Richard Ball of the Mississippi Office of Pollution Control (OPC) investigated the site in Hattiesburg due to reports from the Corps of Engineers, Mobile District, indicating creosote in borings along Gordons Creek. A title search of county records revealed a creosote plant was in operation along Gordons 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 (Appendix A).

1.1 Objective

The objective of the SI-Phase II is to further evaluate the risk posed by the site based on the potential harm to humans or the environment due to soil exposure and migration of hazardous substances from the site via groundwater and surface water. Data collected during the SI-Phase II will be used to determine whether or not this site is a likely candidate for the National Priorities List.

1.2 Scope of Work

The scope of the investigation will include the following activities:

- Evaluate the groundwater and surface water use in the area,
- Collect environmental samples consisting of subsurface soil, sediment, surface water, and groundwater (if encountered),
- Complete and submit a report of the investigation.

1.3 Schedule

October, 1991

1.4 Personnel

MDEQ personnel will perform the SI-Phase II.

1.5 Site History and Description

As stated earlier, a creosote plant was in operation along Gordons Creek from around 1900 to 1960. 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, a large wooded area, automobile dealers, and other small businesses.

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 (Appendix A).

1.6 Drainage Features

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 fifteen-mile migration pathway ends in the Leaf River.

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.

According to the Mississippi Bureau of Land and Water Resources, there is one surface water intake located along the 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 (Appendix A).

1.7 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.

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.

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.

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 four-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 four-mile radius. Four Forrest County aquifer tests of the Hattiesburg Formation show hydraulic conductivities ranging from 96 to 180 ft/d.

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 1,000 feet below sea level with the base of fresh water occurring approximately 800 feet below sea level.

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.

The first water bearing unit 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 x 10^{-5} cm/s (Appendix A).

2.0 Sampling Investigation

Soil, sediment, and water samples will be collected as described below. Sample locations are indicated in Table 1 and Figure 2.

A background boring will be drilled northeast of the site using a drilling rig. This location should be upgradient, since the groundwater flow directions at the site are thought to be northeast to southwest, based on lithologic data.

If groundwater is encountered in the boring, a temporary well (GS-TW-01) will be installed and a groundwater sample collected. A background subsurface soil sample (GS-SB-01) will also be collected at this location. The borehole will be backfilled with cuttings from the borehole and bentonite powder.

A background sediment (GS-SD-01) and surface water (GS-SW-01) sample will be collected from Gordons Creek upstream from the site. A sediment (GS-SD-02) and surface water (GS-SW-02) sample will also be collected from Gordons Creek adjacent to the site. The surface water intake indicated in Section 1.6, Drainage Features, will be investigated and a sample will be collected if it is deemed appropriate.

An on-site boring will be drilled on the northwest side of Pine Street using a drill rig. This location will be in close proximity to the past creosote operations. If groundwater is encountered in the boring, a temporary well (GS-TW-02) will be installed and a groundwater sample collected. A subsurface soil sample (GS-SB-02) will also be collected at this location. The borehole will be backfilled with cuttings and bentonite powder.

A downgradient boring will be drilled southwest of the site approximately 1,000 feet northeast of the intersection of Hwy 49 and Pine Street. If groundwater is encountered in the boring, a temporary well (GS-TW-03) will be installed and a groundwater sample collected. The borehole will be backfilled with cuttings and bentonite powder.

These sample locations, as discussed above and indicated on Figure 2 and Table 1, should provide a representative sampling of the entire site. However, site conditions at the time of the field investigations may necessitate the relocation of one

or more of the samples. If any of the samples have to be relocated, the new locations will also reflect site or background conditions.

2.1 Sample Methodology

All sample collection, preservation, and chain-of-custody procedures will be in accordance with the standard operating procedures specified in Sections 3 and 4 of the Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, U. S. EPA, Region IV, Environmental Services Division, February 1, 1991. All soil and sediment samples collected for analysis of purgeable organic compounds will be grab samples. Other soil and sediment samples will be either grab or composite samples depending on field conditions. Approximately 9 samples will be collected, including a VOC trip blank.

Analysis	Container	Preservatives
Water samples:		
° VOCs	2-40 ml amber bottles	HCl
° Semi Volatile Organic Compounds	2-1 liter amber bottler	--
° Pesticides/PCBs	1-1 liter amber bottles	--
° Metals	1-1 liter high density Polyethylene (HDP) bottle	HNO_3
° Cyanides	1-1 liter HDP bottle	NaOH
Soil/Sediment Samples:		
° VOCs	1-120 ml VOC bottle	--
° Semi Volatile Organic Compounds	1-250 ml amber bottle	--
° Pesticides/PCBs	1-250 ml amber bottle	--
° Metals/Cyanide	1-250 ml amber bottle	--

Non-hazardous investigation derived waste (IDW) will be double-bagged and disposed of in a permitted landfill as outlined in Section 4.5 of the ECBSOPQAM. No hazardous IDW is expected to be generated.

2.2 Analytical Methodology

Samples will be analyzed for extractable and purgeable organic compounds, semi-volatile organic compounds, pesticides, PCBs, cyanide, and metals as per the CERCLA Target Compound List (TCL). Analyses will be performed by Mississippi State Chemical Laboratory.

TABLE 1

SAMPLE LOCATIONS AND RATIONALE
GULF STATE CREOSOTE SITE
HATTIESBURG, MS

Collection Date	Sample Code	Sample Type	Locations	Rationale	Depth (ft bls)
	GS-TW-01	Groundwatef	Approximately 400 feet southeast of Timothy Lane and Pine Street Intersection	Background	15-25
	GS-TW-02	Groundwater	On-site, located on the northwest side of Pine Street	Determine presence or absence of contamination	15-25
	GS-TW-03	Groundwater	Downgradient, located on the northwest side of Pine Street, approximately 1,000 feet northeast of the intersection of Pine Street and Hwy. 49	Determine presence or absence of contamination	15-25
	GS-SB-01	Subsurface Soil	Same Location as GS-TW-01, approximately 400 feet southeast of Timothy Lane and and Pine Street Intersection	Background	5-10
	GS-SB-02	Subsurface Soil	On-site, located between Pine Street and Gordons Creek	Determine presence or absence of contamination	5-10
	GS-SD-01	Sediment	Located in Gordons Creek, upgradient, near Intersection of Hwy 49 and Pine St.	Background	NA
	GS-SW-01	Surface Water	Located in Gordans Creek, upgradient, near Intersection of Hwy 49 and Pine St.	Background	NA

NA - None Applicable

TABLE 1 (cont'd)

SAMPLE LOCATIONS AND RATIONALE
GULF STATE CREOSOTE SITE
HATTIESBURG, MS

Collection Date	Sample Code	Sample Type	Locations	Rationale	Depth (ft bls)
	GS-SD-02	*Sediment*	*Located in Gordons Creek, on-site*	Determine presence or absence of contamination	NA
	GS-SW-02	Surface Water	Located in Gordons Creek, on-site	Determine presence or absence of contamination	NA
	Trip Blank	Water	Collected prior to entry of site	QA/QC	NA

NA - None Applicable

A:ms_mes15

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
RAY MABUS
GOVERNOR

March 8, 1990

FILE COPY

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

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
345 Courtland Street, N.E.
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PREPARED BY:

Michael Slack
Hazardous Waste Division
Mississippi Bureau of Pollution Control (BPC)
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REVIEWED AND EDITED BY:

Jim Hardage (BPC)

March 6, 1990

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 condutivities 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 hyraulic 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 evapotransportation (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 sight 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.

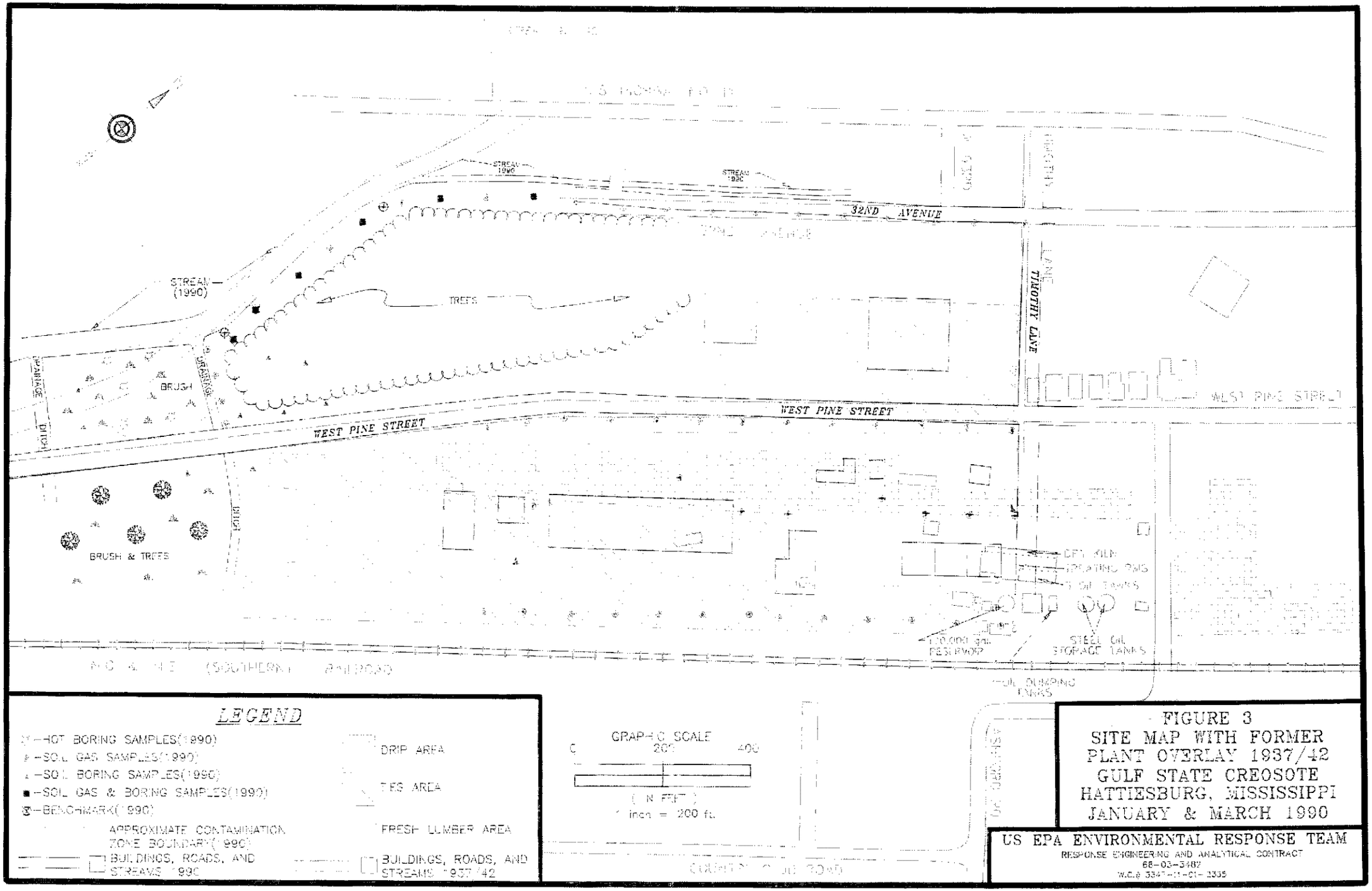
13. Field Log of Borings, Gordons Creek, Hattiesburg, Mississippi, July 27, 1989.

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



LEGEND

- X—SOIL BORING SAMPLES(1990)
- ⊕—SOIL GAS SAMPLES(1990)
- ▲—SOIL BORING SAMPLES(1990)
- ■—SOIL GAS & BORING SAMPLES(1990)
- ⊛—BENCHMARK(1990)
- APPROXIMATE CONTAMINATION ZONE BOUNDARY(1990)
- BUILDINGS, ROADS, AND STREAMS 1990
- BUILDINGS, ROADS, AND STREAMS 1937/42

FIGURE 3
SITE MAP WITH FORMER PLANT OVERLAY 1937/42
GULF STATE CREOSOTE
HATTIESBURG, MISSISSIPPI
JANUARY & MARCH 1990

US EPA ENVIRONMENTAL RESPONSE TEAM
RESPONSE ENGINEERING AND ANALYTICAL CONTRACT
68-03-3482
W.O.# 3347-11-01-3355