

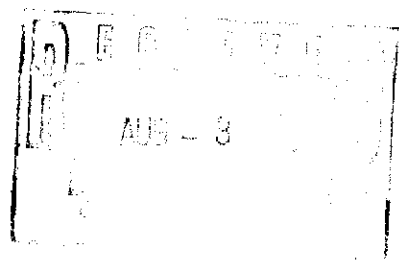
**FILE COPY**

**Work Plan for  
Additional Site Investigation Activities**

**Former Gulf States Creosoting Site  
Hattiesburg, Mississippi**

**August 2, 2000**

**Project No. 21-04**



**MICHAEL PISANI & ASSOCIATES, INC.**

**Environmental Management and Engineering Services**

1100 Poydras Street  
1430 Energy Centre  
New Orleans, Louisiana 70163  
(504) 582-2468

**Table of Contents  
Work Plan for  
Additional Site Investigation Activities**

**Former Gulf States Creosoting Site  
Hattiesburg, Mississippi**

	<b>Page</b>
<b>Summary</b>	<b>1</b>
<b>1.0 Introduction</b>	<b>4</b>
<b>1.1 Site Background</b>	<b>4</b>
<b>1.2 Objectives of Investigation</b>	<b>4</b>
<b>1.3 Work Plan Organization</b>	<b>4</b>
<b>1.4 Access to Sampling Locations</b>	<b>7</b>
<b>2.0 Soil Sampling</b>	<b>8</b>
<b>2.1 Fill Area</b>	<b>8</b>
<b>2.2 Process Area</b>	<b>8</b>
<b>3.0 Ground Water Investigations</b>	<b>11</b>
<b>3.1 Ground Water Screening</b>	<b>11</b>
<b>3.1.1 Sampling and Analytical Procedures</b>	<b>11</b>
<b>3.1.2 Sampling Locations</b>	<b>11</b>
<b>3.2 Well Abandonment and Replacement</b>	<b>14</b>
<b>3.3 Ground Water Monitoring</b>	<b>16</b>
<b>4.0 Sediment Sampling</b>	<b>18</b>
<b>4.1 Onsite Drainage Ditches</b>	<b>18</b>
<b>4.2 Northeast Drainage Ditch</b>	<b>18</b>
<b>5.0 Data Evaluation and Reporting</b>	<b>21</b>
<b>6.0 Schedule</b>	<b>22</b>

**Table of Contents  
Work Plan for  
Additional Site Investigation Activities**

**Former Gulf States Creosoting Site  
Hattiesburg, Mississippi**

**Figures**

- 1-1 Site Location**
- 1-2 Current Site Features**
- 2-1 Proposed Fill Area Soil Sampling Locations**
- 2-2 Proposed Process Area Soil Sampling Locations**
- 3-1 Proposed Fill Area Ground Water Screening Locations**
- 3-2 Proposed Offsite Ground Water Screening Locations**
- 3-3 Monitoring Wells to be Plugged/Abandoned and Replaced**
- 3-4 Ground Water Monitoring Wells**
- 4-1 Proposed Sediment Sampling Locations – Onsite Drainage Ditches**
- 4-2 Proposed Sediment Sampling Locations – Northeast Drainage Ditch**
- 6-1 Project Schedule**

## **Work Plan for Additional Site Investigation Activities**

### **Former Gulf States Creosoting Site Hattiesburg, Mississippi**

#### **Summary**

##### **Project Background**

During 1997 and 1998, Kerr-McGee Chemical, L.L.C. (KMC) completed an extensive, two-phase Remedial Investigation (RI) at the Gulf States Creosoting Site (the site) in Hattiesburg, Mississippi. Phase I RI activities focused on the area comprising the original wood treating site. Phase II RI activities included the assessment of offsite areas, as well as additional onsite investigations to further delineate impacted media. The results of assessment activities conducted in 1997 and 1998 were presented in the following reports:

- *Remedial Investigation Report*, June 30, 1997
- *Interim Report - Phase II Remedial Investigation*, August 14, 1998
- *Phase II Remedial Investigation Report*, December 30, 1998.

In a letter dated April 20, 1999, the Mississippi Department of Environmental Quality (MDEQ) approved the investigation work conducted to date. Based on that approval, KMC submitted a Risk Assessment Work Plan (*Proposed Work Plan for Developing Site-Specific, Risk-Based Cleanup Goals for the Former Gulf States Creosote Site*, May 25, 1999) for MDEQ review and approval. MDEQ approved the Risk Assessment Work Plan for implementation in a letter dated August 3, 1999.

Since receiving MDEQ approval of the Risk Assessment Work Plan, KMC has submitted the following documents for MDEQ review and approval:

- *Human Health Risk Assessment for the Former Gulf States Creosoting Facility, Hattiesburg, Mississippi*, November 12, 1999
- *Ecological Risk Assessment for the Former Gulf States Creosoting Facility, Hattiesburg, Mississippi*, January 14, 2000
- *Remedial Action Work Plan*, February 14, 2000.

MDEQ issued comments on the Ecological Risk Assessment on June 15, 2000. KMC submitted responses to MDEQ and U.S. EPA comments on the Ecological Risk Assessment in a letter dated July 25, 2000. To date, MDEQ has not issued comments on the Human Health Risk Assessment or Remedial Action Work Plan.

Representatives of KMC met with MDEQ on June 21, 2000 to discuss the site status. MDEQ personnel identified several areas where they believe additional assessment activities are needed to support deed restrictions and the proposed remedial action. The additional site assessment activities proposed in this document are intended to address remaining MDEQ concerns and to bring the investigation phase of the project to a close.

## Summary of Previous Studies

Beginning in January 1990, the site has been studied extensively to determine the presence and extent of impacted media. Approximately 200 soil samples have been collected and submitted to fixed-base laboratories for analysis of chemical constituents. Ground water samples have been collected from 11 onsite and five offsite ground water monitoring wells, as well as numerous ground water screening locations, for chemical analysis. Surface water and sediment samples from two separate drainage pathways have been collected and analyzed.

The results of previous studies indicate that the majority of wood treating residuals exist at two distinct and separate locations. The first location is an approximate 2.5-acre former process area located in the northeastern corner of the site (the Process Area). The second location is an obvious fill area located between Gordon's Creek and West Pine Street, within and adjacent to the former Gordon's Creek channel (the Fill Area). The results of previous studies also indicate offsite migration of site constituents via the ground water and surface water pathways.

An extensive analytical database has been generated through previous studies. In general, sufficient data to establish the vertical and horizontal extent of impacted media are currently available. The assessment activities proposed in this document will further delineate impacted media and will help to refine the conceptual site model. However, it is not anticipated that the results of the additional assessment activities will significantly impact potential site risks or alter the proposed site remedy.

## Proposed Additional Activities

Proposed additional activities can be divided into the following tasks:

- Soil Sampling
- Ground Water Investigations
- Sediment Sampling
- Data Evaluation and Reporting

A brief description of the activities proposed to complete each task is provided below. Detailed information and supporting rationale for proposed additional activities are provided in Sections 2.0 through 5.0.

### Soils Sampling

Additional soil sampling is proposed as follows:

- **Fill Area** – MDEQ has requested that KMC delineate the extent of impacted soil in the vicinity of ROST screening location RST-16. Three soil borings will be advanced at the southern end of the Fill Area to achieve this goal.
- **Offsite Process Area** - MDEQ has requested that KMC delineate the extent of impacted soil in the vicinity of soil borings GEO-19 through GEO-21 (i.e., between Courtesy Ford and the Southern Railroad). Further assessment work in this area would

require access to the Southern Railroad right-of-way. If a mutually-agreeable access agreement can be established between KMC and the Southern Railroad, three borings will be advanced on the Southern Railroad right-of-way to achieve this goal.

### **Ground Water Investigations**

Additional ground water investigations are proposed as follows:

- **Ground Water Screening** – MDEQ has requested that KMC delineate the extent of impacted ground water east of MW-09, south of CPT-09, and north of MW-12. Approximately 10 temporary monitoring wells will be installed and sampled to achieve this goal.
- **Well Abandonment and Replacement** – MDEQ has expressed concerns regarding the presence of dense nonaqueous phase liquids (DNAPLs) in two Process Area monitoring wells (MW-1 and MW-2). KMC believes that the presence of DNAPLs in these wells is not indicative of a layer of DNAPL in the aquifer, but is the result of faulty well construction. To demonstrate this, wells MW-1 and MW-2 will be plugged and abandoned and will be replaced with wells constructed appropriately to monitor for the presence of DNAPLs.
- **Ground Water Monitoring** – MDEQ has requested that KMC establish a ground water monitoring plan for the site. During additional assessment activities, ground water samples will be collected from all existing monitoring wells, plus the two proposed replacement wells. Based on an evaluation of the data from all phases of investigation, a Ground Water Monitoring Plan will be prepared and will be submitted to MDEQ for review and approval.

### **Sediment Sampling**

Additional sediment sampling is proposed as follows:

- **Onsite Ditches Leading to Gordon's Creek** – MDEQ has requested that KMC collect sediment samples from the ditch adjacent to the Southern Railroad and the ditch that runs from the railroad ditch to Gordon's Creek. Six sediment samples will be collected from these two ditches and analyzed to determine the presence and concentrations of creosote constituents.
- **Northeast Drainage Ditch** – MDEQ has requested that KMC further delineate the extent of impacted sediment in the northeast drainage ditch. Six additional sediment samples will be collected and analyzed to achieve this goal.

### **Data Evaluation and Reporting**

Upon completion of the activities detailed in Sections 2.0 through 4.0 of this Work Plan, and once laboratory analytical reports are received and validated, the data obtained will be evaluated and presented in an Additional Site Investigation Report. The report will include descriptions of field activities, summary data tables, maps depicting sample locations, and conclusions drawn from the new data.

## **1.0 Introduction**

### **1.1 Site Background**

The former Gulf States Creosoting site is located in Hattiesburg, Mississippi near the intersection of U.S. Highways 49 and 11. The site is situated entirely within Section 16 of Township 4 North, Range 13 West, in Forrest County, Mississippi (Figure 1-1). Creosoting operations were conducted at the site between the early 1900s and approximately 1960. Wood treating operations were confined to a 2.5-acre area at the northeast corner of the site (Figure 1-2).

The property was developed commercially beginning in approximately 1962. During the redevelopment of the site, fill materials containing creosote residuals were apparently placed in the southwestern portion of the site adjacent to Gordon's Creek. The original plant area is currently occupied by several automobile dealerships, auto parts retailers, a beverage dealership, and other commercial operations (Figure 1-2).

### **1.2 Objectives of Investigation**

The objectives of additional site investigation activities are to address remaining MDEQ concerns and to bring the investigation phase of the project to a close.

### **1.3 Work Plan Organization**

The original *Site Investigation Work Plan* (January 7, 1997) and its appendices presented extensive site background information (Sections 2.0 through 4.0) and detailed procedures for data collection, quality assurance and quality control (QA/QC), health and safety, and planning and reporting activities (Sections 5.0 through 9.0). Additional sampling procedures were presented in the *Revised Addendum to the Site Investigation Work Plan* (April 8, 1998). In order to avoid duplication and reduce the volume of this document, this Work Plan incorporates the background information and procedures from the previous Work Plans by reference. This Work Plan, therefore, consists of the proposed scope of work and rationale for additional activities and presents only those procedures not detailed in previous Work Plans.

This Work Plan includes the following sections:

- 1.0 Introduction
- 2.0 Soil Sampling
- 3.0 Ground Water Investigations
- 4.0 Sediment Sampling
- 5.0 Data Evaluation and Reporting